PORTFOLIO CONSTRUSTION OF NEPALESE COMMRCIAL BANKS
(With Reference to NABIL, NIBL, BOK, HBL, EBL and SCBNL)

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RECOMMENDATION

This is to certify that the Thesis

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

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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 Master Degree of Business Studies (M.B.S.)

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DECLARATION

I hereby declare the thesis entitled " PORTFOLIO CONSTRUCTION OF NEPALESE COMMERCIAL BANKS (With Reference to NABIL, NIBL, BOK, HBL, EBL and SCBNL)", submitted to office of the Dean, Faculty of Management, Tribhuvan University is my original work, done in the form of partial fulfillment of the requirement for the Master of Business Studies (M.B.S) under the supervision of Associate Prof. Achyut Raj Bhattarai and Mr. Prakash Sapkota, Shanker Dev Campus.

Date: Aug, 2014

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ABBREVIATIONS

BOKL	:	Bank of Kathmandu Limited.
CAPM	:	Capital Assets Pricing Model
CV	:	Coefficient of Variation
DPS	:	Dividend per Share
EBL	:	Everest Bank Limited
EPS	:	Earning per Share
F/Y	:	Fiscal Year
GDP	:	Gross Domestic Product
HBL	:	Himalayan Bank Limited
JVBs	:	Joint Venture Banks
NABIL	:	Nepal Arab Bank
NEPSE	:	Nepal Stock Exchange
NIBL	:	Nepal Investment Bank Limited
PA	:	Per Annum
R&D	:	Research and Development
RRR	:	Realized Rate of Return
SCBNL	:	Standard Chartered Bank Nepal Limited
SD	:	Standard Deviation
SML	:	Security Market Line
TU	:	Tribhuvan University

CHAPTER I

INTRODUCTION

1.1 Background of the study

Securities market is recognized as an effective way of raising capital for commercial enterprises, and at the same time providing an investment opportunity for individuals and institutions. The activities of buying and selling securities in the securities markets are extremely important for the efficient allocation of capital within economies. The securities market is a requisite for the sound development for an economy because it not only provides stable long-term capital for companies and an effective savings vehicle for the public, but also functions as an efficient tool for resource allocation. Mass participation in country's industrialization process is possible only through the efficient mechanism of securities markets as it promotes efficient collection of small and scattered savings from the investors and provides returns to them in the form of dividend. A developed securities market in the medium through which only productive firms that have better performance can easily raise capital. In other words, well – developed capital markets enable high –quality firms to increasingly finance themselves from securities (bond and equity)rather than from bank loans .this type of behavior of developed market enhances economic growth process by productivity growth*(Shirai, 2004:189-208).*

Capital plays a vital role in the economic development of a country. Nepal being one of the least developed countries in the world has to make every possible endeavor to efficiently mobilize the available capital .The need for securities market development in Nepal has been accepted reality, however, it has not been developed at desired rate. if we see the size of the market during the past 20 years (i.e., F/Y 1994/95-F/Y2012/13), the annual average amount of public issue was Rs,620.04 million, annual average amount of turnover was Rs,12197.96 million, annual average market capitalization was Rs.60723.70 million ,annual average percent of turnover on paid up value was 13.35, and annual average percent of turnover of market capitalization was 4.30 and annual average percent of market capitalization on nominal

GDP at market price was 8.11. The above indicators show that securities market has low level of resource mobilization, low level of turnover, low level of impact on national economy (*Adhikari, 2012:75-79).*

The last few years basically after the restoration of democracy (1990) in the country in the government's move towards liberalization and privatization have paved the way for economic growth and the resultant effect has been positive. The continuing development has helped in establishing many banks financial intuitions and industries under joint venture arrangements. Economic prosperity is a function of banking development. Economic development is inevitable for the overall prosperity of the country. Well – developed banking system is the route for the economic prosperity. So, banking system is supposed to be the backbone of the nation, which supports for the establishment of industries, development and extension of nation and international trade and mobilization of saving to the productive sectors.

The number of joint venture banks has been increasing so the investment volume and opportunity in various sectors that extends to agriculture, industry commercial and social sectors. Among all banks, 11 joint venture banks are listed in Nepal stock exchange In FY2011/12, which claims the highest contribution on the market capitalization as compared to other sectors .As financial intermediary, the joint venture banks also play a important role as fiscal policy implementing body for central bank. The monetary structure involves analysis of the behavior of banking system, so needs and importance of the commercial banks are increasing. The first joint venture bank is NABIL Bank Limited (NABIL), which was established in 2041B.S. There after Nepal Indosuez bank ltd. (2042B.S.), Nepal Grindlays Bank (2043B.S.), Himalayan Bank Ltd. (2049 B.S), Nepal SBI Bank Ltd. (2050 B.S) and other were established as JVB's.

A JVB is the joining of force between two or more enterprises for the purpose of carrying out a specific operation i.e. industrial/commercial investment, production or trade. By this definition .any agreement between two or more than two parties for specific purpose is called joint –venture (Radhaswami and Vashudevan(1996:351-353).

In global perspective, joint –ventures are the modes of credit through partnership among and also form of negotiations between various groups of traders and industries to achieve mutual exchange of goods and services for sharing competitive advantages. From the above definition, it is clear that a joint venture is a single business deal, which is jointly undertaken by two or more persons or parities with a view to making and sharing profit. The specific features of joint venture are as follows:

- It is confined to a single deal.
- A joint venture is limited to a single business adventures.
- Participants contribute capital for the joint venture and share profits and losses in proportion to their capital (investment) and
- The work of joint venture may be done by all the participants or by one participant.

Now a day, each and every managerial decision –making is based on financial analysis. It covers the acquisition, utilization, control and administration of fund. "Managerial finance is an interesting, exciting and dynamic area of study. And its importance to the long run success of today's business is unquestioned" *(Lawrence, 1985:12).* Common stockholders are residual owner of the firm. In real, they're real owners of the firm. They invest in firm. That is why, they participate in the management and entitled to all the profit left after all the liabilities or claims are satisfied. So, common stockholders have to bear all the risk relating to the business. Thus, common stock is the most risky security.

Risk is the bitter truth of life, which is a product of future uncertainty and its magnitude depends upon the degree of variability in uncertain cash flow. Risk in fact, is an indication of chance of losing investment back. Interpretation of risk varies as per people's attitude towards it; in real; risk is any unknown unfavorable event. It real, risk is any unknown unfavorable event. It is a chance of happening some or huge unfavorable even or danger of losing some materials value." The rights and responsibilities attached to equity consist of positive considerations (income potential and control of the firm) and negative considerations (loss potential, legal responsibility, and personal liability) *(Weston and Copeland, 1992:931)."*Risk was defined as

the variability of possible outcomes from that which was expected" *(Van Horne, 1999:72).* "Risk refers to the set of unique outcomes for a given which can be assigned probabilities" *(Khan and Jain, 1992, 1992).* "Risk is the pornography, it's hard to define, but you know it when you see it" (*Van Horn and Wachowicz, 1986:89).*

An investor always wants high return but low risk which is totally impossible. Where there is high return, there is high risk and vice –versa. To earn more return, people invest their wealth in common stock thinking that they will get the entire residual amount as dividend. But their expected return may or may not be high in reality. So, it can be easily conclude that return is uncertain .This uncertainty is the major risk to investor in common stock investment.

"Every investment entails some degree of risk, it requires a present certain sacrifice for a future uncertain benefit" (*Francis, 200:11).* "The return on investment is dividend plus, changes in market price of the share (MPS). It is expressed in percentage. Both of these items are uncertain. So, the actual return on investment in common stock may differ substantially from the expected return" (*Malakar, 2001"32).* "Return is the income received in investment. People invest their belongings with an expectation of getting some reward for leaving its liquidity. They only invest in those opportunities where they can get higher return. Hence, investor wants favorable return to be yield by its stock. And go for those, which yield more" *(Upadhya, 2001:25).*

1.1.1 A Brief Profile of Sample Banks

(a)Nepal Investment Banks Ltd. (NIBL)

Nepal investment Bank Limited was established on 21 January 1986 as a third joint venture bank under the Company Act, 1964. The bank is managed by Banque Indosuez Paris in accordance with joint-venture and technical services agreement signed between it and Nepalese promoters. As mention in the NEPSE annual report main objectives of the bank is to provide loans and

advances to the agriculture, industries and commerce and to provide modern banking services to the people . The bank s authorized capital, issued capital and paid up capital is Rs.4, 000,000,000 and 3,768,007,700 respectively, with 2780 number of outstanding shareholders. Bank was listed in stock exchange at B.S05/08/2044. It has forty-four branches around the country.

(b)NABIL Bank Ltd. (NABIL)

NABIL Bank Ltd. is the first joint venture bank incorporated in 1984 A.D (2041 B.S) and listed in NEPSE in year 1986 A.D. (08/09/042 B.S) in Nepal. Initially Dubai Bank Ltd. Invested 50% of equity share of Nepal Arab Bank Limited. The shares owned by Dubai Bank Ltd. Were transferred to Emirates Bank International Ltd. (EBIL), Dubai. Later on, EBIL sold its entire 50% equity holding to National Bank Ltd, Bangladesh (NBLB).NBLB is managing the bank in accordance with the technical services agreement signed between NBLB and the Bank (NABIL) on June 1995. Forty-eight Branches of the bank are in operation around the country. Authorized capital, issued capital and paid up capital of NABIL are RS. 2,500,000,000, Rs.2,436,841,400 and Rs.2,436,841,400 respectively with per value per share Rs. 100 and number of shareholders is 5076.

C) Bank of Kathmandu Ltd. (BOKL)

Bank of Kathmandu is the latest Joint – Venture bank listed in NEPSE. It was established in 2050 B.S in collaboration with the SIAM commercial bank PCL of Thailand under the Company Act. The SIAM commercial bank out of 50% holding diluted its 25% holding to the Nepalese citizen in 1998. The bank has two branches in operation. Bank of Kathmandu limited is a culmination of a comprehensive vision of the promoter to take the Nepalese economy to a newer realm in the global market. Each promoter of Bank of Kathmandu has successfully demonstrated leadership skills, businessmen and entrepreneurial talents in his/her respective field.

Bank of Kathmandu is committed to providing products and services of the highest standards to its customers by understanding their requirement best suiting the market needs. In pursuit to deliver the products and services of

the highest standards, Bank of Kathmandu has state-of art technology for appropriate and efficient management Information System (MIS) and rendering quality services, VSAT and Radio Modem for networking, SWIFT for international trade and transfer of funds around the world, correspondent banking relationships with over 200 banks worldwide for effective and proficient execution of international trade and remittance activities, gamut of corporate and retail banking products and services and centralized banking operations for better risk management, consistent service deliveries and lowering operation cost. It has 44 branches in Nepal and its Authorized capital, issued capital and paid up capital are RS. 2,000,000,000, Rs.1,684,396,700 and Rs.1,684,396,700 respectively.

(d) Himalayan Bank Ltd. (HBL)

Himalayan Bank Limited was established in 1992 by the distinguished business personalities of Nepal in partnership with Employees Provident and Habib Bank Limited, one of the largest commercial banks of Pakistan. It is first commercial bank of Nepal with maximum shareholding by the Nepalese private sector. Besides commercial activities, the bank also offers industrial and merchant banking. The bank at present has the eighteen branches in Kathmandu Valley and 26 outside valley. Himalayan Bank's policy is to extend quality and personalized service to its customers as promptly as possible. All customers are treated with utmost courtesy as valued clients. The Bank, as far as possible, offers tailor. Made facilities to its clients, based on the unique needs and requirements. To extend more efficient services to its customers, Himalayan Bank Limited was registered in 2049/10/05 and started its operation on the same date. Its authorized capital is Rs4,000,000,000 and paid-up capital is 2,760,000,000 and issued capital is 2,760,000,000. It has 7210 shareholders and issued of 100 paid up shares whose par value is also Rs, 100. It has main aim of operation of collecting deposits under different account and granting loan to needy persons. It has positive role to strengthening the financial sector of Nepal. 80% of the investment of this bank is made from Nepalese investors and 20%from

foreign investors. The share is listed in Nepal Stock Exchange Ltd. On 2050/03/21 B.S.

(e) Standard Charted Bank Nepal Limited (SCBNL)

Standard Charted Bank Nepal Limited (SCBNL) with was formerly Nepal Gridlays Bank Limited (NGB) was established in 1985 as a second foreign joint venture bank under the company Act, 1964. ANZ Grindlays Bank PLC is the foreign joint venture partner with 50% equity investment. ANZ Grindlays Bank is managing the bank under joint venture and technical service agreement signed between ANZ Grindlays Bank PLC and Nepalese promoters.

Now, SCBNL group had taken over ownership from ANZ Grindlays Bank in17th Shrawan 2057 (2000). Due to change in 50% ownership, its name changed to Standard Chartered Bank Nepal Limited. The main objectives of the bank is to collect deposits and provide loans to agriculture, commerce and industry, apart from this it also provide modern banking services to the people. Its share's listing -data in NEPSE is 20th Ashad 2045 - (04-07-1988). The bank has authorized capital, issued capital and paid up capital of Rs2,000,000,000 Rs,1,853,900,000 and Rs 1,853,900,000. And their number of shareholders is 5037. It has 15 branches and 4 extension counter in operating in Nepal.

(f) Everest Bank Limited (EBL)

Everest Bank Limited (EBL) was established in 1994 and started its operation with a view and objective of extending professionalized and efficient banking services to various segments of the society. EBL joined hands with Panjab National Bank (PNB) India as its joint venture partner in 1997. PNB is the largest Public Sector Bank of India having 109 years of banking history with more than 4400 offices all over India and is known for its strong systems and procedures and a distinct work culture. The Banks Paid up capital has increased to Rs.1,761,126,410 against the Authorized

Capital of Rs.2,000,000,000. The local Nepalese promoters hold 50 % stock in the Banks equity, while joint venture partner PNB contributes 20% equity whereas the public holds remaining 30%. Despite fragile law and order situation especially during last 2-3 years, the bank has doubled its deposits, advances as well as profits during the period. Its operating profit have grown by 55% during the financial year 2060-61, the net profit has increased by 52%. The average credit growth has been over 26% reaching a figure of 6099 million, deposit having reached a figure of 8064 million. A notable feature of the banks achievement is its containment of NPAs with gross NPAs restricted to 1.72% of the total credit whereas net NPA is reduced to NIL.

1.2 Statement of the Problem

Recent trend shows that the general people are interested to invest their small money on the common stock of financial institutions like joint venture banks. But due to the lack of proper information about market status and situation and poor knowledge, market intermediaries exploit investors. Sometimes they think that investing in common stocks is intolerably hazardous. Due to this, many investors afraid to invest into stocks, this is the main problem that does not allow gearing up the capital market of the nation. The main problem for the individual investor are lack of proper information about market whereas the problem for financial sector to enhance the goodwill among the public due to frequent collapse of some finance companies being unable to utilize public funds properly. The investors are responsible to make rational investment decision. For which rational analytical knowledge is essential. The investor's attitude and perception also plays a vital role in rational decision regarding whether the investment should be made or not. We look in Nepal most of investor invest their funds in a single security rather they can be benefited by investing in portfolio of securities and achieving diversification of risk. The main problem is that the general public cannot perfectly analyze the risk and return analysis of common stock of commercial banks in Nepal.

As the economic status and consciousness towards economic activities are very poor, development and growth of the capital market in Nepal is still in its infancy. Investors use their own guess and hunches to invest their wealth because they don't have any knowledge about financial assets and they also don't know to take decision to construct an ideal portfolio and to reach a profitable decision. Investor's of Nepal invest their wealth on the basis of looking the past trend of stock prices; so, sometimes they have to face heavy losses. "People assume more risk in stock investment than its real risk. To boost confidence analysis in the field is a must. Unavailability of clear and simple techniques to analyze risk associated with return is also a constraint" (*Upadhya, 2001:11).*

Investment on common stock is the main sources of fund for the companies. The investors are the sources of revenue as a customer for the stockbrokers and financial institutions and ultimately they are the backbone of economic development of the nation. So every policy and plan of financial institutions and government also have to encourage them to invest on common stock. For this there is great need of such institutions, which can give valuable information that accelerates the stock investment and market efficiency. Now, it become necessary to make polices, evaluate relative riskiness of decision and impact to general investor by the security businesspersons, security manager, and stockbrokers.

The study deals with following research question;

- How the investment decisions are to be taken?
- What is the factor affecting riskiness of the securities?
- What are the comparative risk positions of selected joint venture banks?
- Does the risk and return of selected of selected joint venture banks vary significantly?
- What is the systematic risk position in relation to total risk?
- Would portfolio construction within the selected joint venture banks be profitable.

1.3 Objectives of the study

From the discussion of above research question the main objective of the study is to analyze the risk and return of common stock investment of listed companies i.e. joint venture banks. The following are the specific objectives;

- To see the trend of price of listed companies for various time period.
- To see the risk and return of individuals bank and to perform sector comparison on the basis of market capitalization.
- To see the correlation between various joint venture bank.
- To find out the optimum portfolio within the selected joint venture bank.

1.4 Significance of the Study

Open economic policy of the government encouraged the establishment of the financial institution. As result the people's participation in security investment and stock trading is increasing unexpectedly. The recent trend and people's attitude towards common stock investment shows that there is a high potentially in stock investment, which results an increase in economic activity. It is important to increase financial and economic activities of the nation. Thus this study has tried to fulfill the need in the aspect. The study may also help for interested management. A part from above, this study will be a matter of interest for academicians, students and practitioners.

The focus of the study is on the analysis of risk and return, which will enable all the related persons to guide the investment related activities. Benefits of the study will receive primarily by potential investors. Security businesspersons, issue manager, broker and marketing managers will also be benefited by this study.

1.5 Limitation of Study

This research explains and analyzes the subject matter with help of well known or already established analytical methods and techniques, therefore as a conclusion oriented research, it doesn't concern with fundamental and decision oriented research. Considering the above matter, following are the limitations of the research.

- It only focuses on selected listed companies covering the period of last eight years.
- This study is mainly based on published secondary data.
- This study only concerns with the risk and return of selected listed companies i.e. joint-venture banks.
- Secondary data gathered from related sources has been used. The reliability depends on it.
- This study has been conducted to fulfill the requirement of the MBS programs of T.U for a prescribed time, not for generalization purpose.
- Only risk and return of common stock and their portfolio would be analyzed.
- In this study NEPSE is taken as basic source of data.
- As a research student the study will be unbiased but resources and time period is limited.
- The truth of the research result is based upon the available data from the NEPSE and other sources.

1.6 Organization of the Study

The study is divided into five chapters as follows:

Chapter 1: Introduction

This chapter is consists of background of the study, Statement of the Problem, Objectives of Study, Significance of the Study, Limitation of the Study and Organization of the study

Chapter 2: Review of Literature

This chapter devoted for the brief review of literature available. Review from books, journals (articles), thesis etc are included in this chapter. Conceptual framework about risk and return is briefly reviewed.

Chapter 3: Research Methodology

This unit presents methodology used in the study. It consists of Research Design, Population and Sample, Sources of Data, Tools for Analysis and Methods of Presentation of Analysis etc.

Chapter 4: Data Presentation and Analysis

In this chapter, data collected from various relevant sources is presented and analyzed using various statistical and non- statistical methods.

Chapter 5: Summary, Conclusion and Recommendation

This chapter is for major findings, summary conclusion and recommendation.

Bibliography and appendices are incorporated at the end of the study.

CHAPTER II
REVIEW OF LITERATURE

2.1 Conceptual Framework

Investment decisions are influenced by various motives. Some people invest in a business to acquire control and enjoy the prestige associated with it. Most investor, however, are largely guided by the pecuniary motive of earning a return on their investment. The main focus of finance is trade-off between risk and return. Here, the focus is its implication in the investment of common stock. In general, risk and return go hand in hand. For earning returns investors have to almost invariably bear some risk. While investors like returns they avoid risk. Investment decisions, therefore, involve a tradeoff between risk and return. Since, risk and return are central point while making investment decision; we must clearly understand what risk and return are and how they should be measured.

"Risk and return are most important concepts in finance. In fact, they are foundation of the modern theory"*(Pandey, 1997:25).* What is risk? How is it measured? What is return? How is it measured are the basic question, which needs to be answered while making an investment decision. In this chapter, an attempt is made to answer the logic of portfolio theory and the use of Capital Assets Pricing Model (CAPM) for valuing assets with a view to facilitate the investment decision.

2.1.1 Common Stock

Common stock represents equity, or an ownership position in a corporation. It is a residual claim ,in the sense that creditors and preferred stockholders must be paid as scheduled before common stockholder can receive any payments, in bankruptcy common stockholders are in principal, entitled to any value remaining after all other claims have been satisfied. The great advantage of corporate form of organization is the limited liabilities of its owners. Common stocks are generally 'fully paid and non-assessable' meaning that common stockholder may lose their initial investment but not

more than that. That is if the corporation fails to meet its obligations, the stockholders cannot be forced to give the corporation the funds that are needed to pay off the obligations. However, as a result of such failure it is possible that the value of a corporation's share will be negligible. This will result in the stockholders having lost an amount equal to the price previously paid to buy the shares.

2.1.2 Return on Common Stock

The return on common stock can be divided as the amount of profit or net income a company earns per investment money. It tells common stock investor was effectively their capital is being reinvested. So, the investor gets return on any assets comes from two sources that is:

i) Cash Dividend: - A cash dividend is money paid to share holders normally out of the corporation's current earnings or accumulated profit. Not all companies pay dividend. Dividends are commonly paid in forms of cash distribution to the shareholders. All dividends are taxable as income to the recipients.

ii) Capital Gain: - A capital gain is the difference between what you paid for an investment and what received when you sold that investment. Another word an increase in the value of a capital assets (investment on real assets) that gives its higher worth than purchase price. This gain is not realized until the assets sold:

$$\text{Expected return on assets } jE(R_j) = \frac{Dividend + Ending\ \ Price\ \ (\mathrm{P1}) + \text{Begining}\ \ Price\ \ (P0)}{Begining\ \ Price\ \ (P0)}$$

As per Brealey and Myers, "if current price of a share is P_0 that the expected price at the end of a year is P_1 and the expected dividend per share is Div_1. The rate of return that investors expect from this share over the next year is defined as the expected dividend per share Div_1 plus the expected price appreciation per share P_1-P_0 all divided by the price at the start of the year P_0 which can be shown in the form of:

$$\text{Expected return on stock } j = E(R_j) = \frac{Div1 + (\mathrm{P1} - \mathrm{P0})}{P0}$$

The return from holding an investment over some period, say a year, is simply any cash payments received due to ownership, plus the change in market price divided by the beginning price. Thus, the return comes from two sources; income and price appreciation *(Barley and Myers, 1994:84)*

For common stock, we may be defining single-period return as:

$$\text{Single assets return } E(R_j) = \frac{Dt + (Pt - 1)}{Pt - 1}$$

Where,

$E(R_j)$ =Actual/ expected return

t = particular time period in the past (future)

D_t = Stocks price at the time period t.

P_{t-1} = Stocks price at time period t-1.

(The term in the parenthesis in the numerator of above equation represent the capital gain or loss during the period.) The above mentioned formulae can be used to find out both actual single-period return (where based historical data) as well as expected single period return (when based on future expected dividends and prices).

"Holding period return measure mentioned above is useful with an investment horizon of one year or less. For longer periods, it's better to calculate rate of return as an investment yield. The yield calculation is presented value-based and this considers the time value of money" (*Barley and Myers, 1994)*

"Return is defined as the dividend yield plus the capital gain or loss. The relationship between different levels of return on their relative frequencies is called a probability distribution. We could formulate a probability distribution for the relative frequency of a firm's annual return by analyzing its historical return over the previous year. But we know that history never repeats itself exactly. Hence, after analyzing relative frequencies of historical return for the individual company, we can form a probability distribution based on historical data plus the analysis for the economy and the outlook for the industry, the outlook for the firm in its industry and another factors" (*Barley and Myers,1994)*.

2.1.3 The Risk on Common Stock

Risk is defined in Webster's dictionary as 'a hazard: a peril: exposure to loss or injury', thus for most, risk refers to the chance that some unfavorable

event will occur. If you invest in speculative stock (or, really, any stock), you are taking a risk in the hope of making an appreciable return" (*Weston* & *Brigham, 1995:182:183)*.

"Most people view risk in the manner we just describe a chance of loss. In reality, risk occurs when we cannot be certain about the outcome of a particular activity or event, so we are not sure what will occur in the future. Consequently, risk result from the fact that an action such is investing can produce more than one outcome in the future. To illustrate the riskiness of financial assets, suppose someone has a large amount of money to invest for a one year. Someone could buy a Treasury security that has an expected return equal to 8 percent. The rate of return expected from this investment can be determined quite precisely, because the chances of the government defaulting on treasury securities is negligible; the outcome essentially is guaranteed, which means this is a risk-free investment. On the other hand, someone could buy the common stock of a newly formed company that has developed technology to extract petroleum from the mountains in South America without defacing the landscape and without harming the ecology. The technology has yet to be proven economically feasible. So, it is not known what returns the common stockholders will receive in the future. Experts who have analyzed the common stock of the company have determined that the expected or average long-run return for such an investment is 30 percent each year, the investment could yield a positive return as high as 900 percent, but there is also the possibility that the company will not survive, in which case the entire investment will be lost, so the return will be 100 percent. Here the investors receive return each year cannot be determined precisely because more than one outcome is possible. This is risky investment, because there is a significant danger of actual earning considerably less than the expected return. Investors probably would consider the stock to be quite risky. But there is also very good chance the actual return will greater than expected, which of course is an outcome we gladly accept. So, when we think of investment risk, along with the chance of actually receiving less than expected, we should consider the chance of actually receiving more than expected. If we consider investment risk from

this perspective, then we can define risk as the chance of receiving as actual return other than expected, which simply means, there is variability in the returns or outcomes from the investment. Therefore, investment risk can be measured by the variability of the investment returns. However, we can define risk more precisely, and it is useful to do so". (*Weston* & *Barley and Myers, 1983).*

Different people interpret uncertainties and risks in different ways. For some, uncertainly is simply a lack of definite outcome; it is anything that could happen any unknown event, which may be favorable or unfavorable. To other, it is a risk, many people consider risk as a chance of happening some unfavorable event or danger or losing some value. The trouble of uncertainty are risk, people often use them interchangeably.

Although the meaning of these two terms may differ, authorities in the field of finance and people concern about finance do agree that the risk is the outcome of uncertainty. If we agree to interpret certainty as a future outcome, which is a hundred percent sure to happen, the uncertainly is nothing but just the opposite of certainty that refers to all possible future outcome none of which is know for sure to happen. On the other hand, risk is the outcome of all potential future outcomes presented with probability associated with each of them and it is measured in terms of degree of variability in the probability distribution of each outcome.

In case of financial analysis, definitely, risk and uncertainly are treated separately. The practice is to translate the uncertainty in to mathematical value, which denotes the best estimate of all uncertainty values. In other words, uncertainty is taken care by calculating the expected value of all possible uncertain outcomes. However, risk is treated differently. Although uncertainty is the root cause of risk, its magnitude depends upon the degree of variability in uncertain cash flows, and it is measured in terms of standard deviation. In project analysis, risk, in fact is an indication of chance of losing investment value. The word chance refers to the probability of loss in the investment project, here. In other words, the project risk indicates the

probability of return being less than the expected value-higher the probability of such loss and less return higher the project risk.

Risk is the unlocked for the unwanted event in the future; someone had said that risk was the sugar and salt of the life. "Risk, defined most generally, is the probability of the occurrence of unfavorable outcomes. But risk has different meaning in different context. I our context, two measures developed from the probability distribution have been based as initial measures of return and risk. They are the mean and standard deviation of the probability distribution". (*Weston* & Brigham, *1995:182-183).*

Being a complicated subject, risk needs to be properly analyzed. The relationship between risk and return is described by investor perception about risk and their demand for compensation. No investor will like to invest in risky assets unless he/she is assured of adequate compensation of 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, required risk premium that establishes a link between risk and return. In a market dominated by rational investors, higher risk will command by rational premium and the trade- off between the two assumes a linear relationship between risk and risk premium. On the topic review, here we consider some books for literature review and to get sound knowledge about subject matter of investment analysis, portfolio, CAPM, SML which are concerned about the analysis of risk and return of the market as well as individual assets including common stocks.

2.1.4 Portfolio Analysis

The investment process consists of two tasks. The first task is security analysis, which focuses on assessing the risk and return characteristics of the available investment vehicles. The second task is portfolio selection, which involves choosing the best possible portfolio from the set of feasible portfolios. A portfolio is a combination of investment assets. The portfolio is the holding of security and investment in financial assets i.e. bond, stock.

Portfolio management is related to the efficient portfolio investment in financial assets (*Francis, 2000:231).* "The process of adding securities to a portfolio in order to reduce the portfolio management is related to the efficient portfolio investment in financial assets (*Francis, 2000:233-240).*

"The process of adding securities to a portfolio in order to reduce the portfolio's unique risk and thereby, the portfolio's total risk is called diversification" *(Francis, 2000:399).* The objective of portfolio analysis is to reduce risk. By combining securities of low risks with securities of high risks, success can be achieved by an investor in making a choice of investment outlets. Combination of securities can be made in many ways.

In this book Francis, Jack Clark has focuses on the different portfolio approaches or forms of diversification, which are as follows:

i) Simple Diversification (Native or Random Diversification)

Simple Diversification can be defined as "not putting all the eggs in one basket" or "spreading the risks". The simple diversification would be able to reduce unsystematic or diversifiable risk. It is the random selection of securities that are to be added to a portfolio. It reduces a portfolio's total diversifiable risk to zero and only the undiversified risk remains. So this approach assumes that an investor can expect a reasonable return for a given level of risk (*Francis, 2000:232-256).*

ii) Superfluous Diversification (Over Diversification)

If refers to the investor spreading himself in so investment on his portfolio. The investor funds it impossible to manage the assets on his portfolio because the management of a large number of assets requires knowledge of the liquidity of each investment, return, tax liability and this will become impossible without specialized knowledge. He also finds it both difficult and expensive to look after a large number of investments. If the plans to switch over investments often selling and buying assets expecting a high rate of return, he involves himself in high transaction costs and more money will be spent in managing superfluous diversification. It will be very difficult for him to measure the return on each of his investments. All those problems may result in inadequate return.

iii) Diversification across Industries

Some investment counselors advocate selecting securities from different industries to achieve better diversification. It is certainly better to follow this advice than to select all the securities in a portfolio from one industry.

iv)Simply Diversification across Quality Rating Categories

Simple Diversification reduces risk within categories of stocks that all have the same quality rating. In this diversification investor invest his fund in same quality categories to reduce his risk and maximized his return.

Assets Allocation

Assets allocation decisions deal with attaining the option proportion of investment from different assets categories. Portfolio manager focuses primarily on the stock-bond mix, the decision often boils down to trying to determine the best long –run stock-bond distribution *(Francis*, Jack Clark).

Portfolio Analysis with Negative Weights

If an asset has a negative weight, two economic interpretations are possible. First a negative weight can be used to represent a short sale. Second a negative weight may indicate that the investor created a leveraged (borrowed, or margined) portfolio by selling (issuing) a security that has the same risk and return statistics as the assets with the negative weight (*Francis, 2004:400).*

He has fixed the following primary and secondary objectives of the portfolio analysis:

1. **Primary objectives**
- To maximize return
- To minimize risk

2. **Secondary objectives**
- Regular return
- Stable income
- Appreciation of capital
- Ever liquidity
- Easy marketability

"The portfolio theory provides a normative approach to the investors decision investment in assets or securities under risk" (*I.M Pandey,1997:329).* It is based on the assumption that investors are risk averse. This implies that investors hold well diversified portfolios instead of investing their wealth in a single assets or security. A portfolio is a bundle or combination of individual assets or securities. If investor holds a well-diversified portfolio, then his concern should be the expected return and risk of portfolio rather than individual assets or securities. The second assumption of the portfolio rather theory, according to him, is that returns of securities are normally distributed. This means that the mean (the expected value) and variance (or standard deviation) analysis is the foundation of the portfolio decisions.

Markowitz's Diversification

Portfolio theory, originally proposed by Harry Markowitz in the 1950s, was the first formal attempt to qualify the risk of portfolio and develops a methodology for determining the optimal portfolio. Prior to the development of portfolio theory, investors somewhat loosely dealt with the concept of return and risk. Intuitively smart investors knew the benefit of diversification, which is reflected in the tradition adage: "Do not put all your eggs in one basket." Harry Markowitz was the first person to show quantitatively why and how diversification reduces risk. Markowitz diversification is combining the assets, which are less than perfect positively correlated in order to reduce portfolio risk. It can sometimes reduce the risk below the undiversified level. Markowitz's diversification is more analytical than simple diversification and considers asset's correlation (or covariance). The lower the correlation between assets, the more the Markowitz's diversification will be able to reduce the portfolio's risk.

Capital Assets Pricing Model (CAMP)

In this book "Investment Analysis and Portfolio Management", written by Prasanna Chandra has focused on Capital Assets Pricing Model. "The CAPM predicts relationship between the risk of an assets and its expected return. The relationship is very useful in the ways. First, it produces a

benchmark for evaluating various investments. For example, when we are analyzing a security we are interested in knowing whether the expected return from it is security we are interested in knowing whether the expected return from it is in line with its fair return as per the CAPM. Second it helps us to make an informed guess about the return that can be expected from an asset that has not yet traded in the market. For example, how should a firm price its initial public offering of stock? Although the empirical evidence on the CAPM is mixed, it is widely used because of the valuable insight it offers and its accuracy is deemed satisfactory for most practical application" (*Chandra,2002:240-245).*

Prasanna Chandra presents the following basic assumption of CAPM.

- Individuals are risk averse.
- Individuals seek to maximize the expected utility of their portfolio over a single period planning horizon.
- Individuals have homogeneous expectation. They have identical subjective estimates of means, variances, and covariance among returns.
- Individuals can borrow and lend freely at riskless rate of interest.
- The market is perfect, there are no taxes, and there are no transaction costs: securities are completely divisible, market is competitive.
- The quality of risk securities in the market is given.

Looking at these assumptions, one may feel that the CAPM is unrealistic. However, the value of a model depends not on the realism of its assumption, but on the validity of its conclusions. Extensive empirical analysis suggests that the conclusions of the CAPM are reasonable valid. The relevant risk for an individual asset is systematic risk (or market-related risk) because non-market risk can be eliminated by diversification. The relationship between an asset's return and its systematic risk can be expressed by the CAPM. The equation for CAPM is;

$$E(Rj)=Rf+[E(Rm)-Rf]x\beta j$$

Where,

$E(R_j)$ = expected rate of return for an assets
R_f = the risk –free rate (usually short-term T-bill rate
$E(R_m)$ = the expected return of market

β_j = the asset's beta

Security Market Line (SML)

As per Prasanna Chandra "There is a linear relationship between expected return and covariance of securities with the market portfolio" (*Chandra, 2002:245).* This relationship, called the security market line (SML), is as follows:

$$E(Rj) = Rf + \frac{[E(Rm) - Rf]}{\sigma 2\text{m}} x\text{Cim}$$

Where,
$E(R_j)$ = expected return for on security i
Rf = the risk-free return
$E(R_m)$ = the expected return on market portfolio
σ^2m = Variance of return between security i and market portfolio
C_{im} = Covariance of return between security i and market portfolio
In words the SML relationship says:

Expected return on security i= Risk free+(Price per unit of risk) Risk

$$\text{The price per unit of risk} = \frac{\text{E(Rm)} - \text{Rf}}{\sigma 2\text{m}}$$

The measure of risk = C_{im}

In above SLM equation, the risk of a security is expressed in terms of covariance with the market portfolio, σ_{im}. Can we find a standardized measure of risk? Fortunately we can find a standard measure of systematic risk, popularly called beta (β_j), by taking advantage of the relationship.

$$\beta_j = \frac{Cim}{\sigma 2m} = \frac{COV(Ri,Rm)}{\sigma 2m}$$

Which reflects the slope of a linear regression relationship in which the return on security i is regressed on the return of the market portfolio. Thus, the SML is popularly expressed as:

$$E(R_i)=R_f+[E(R_m)-R_f]\beta_i$$

In words, the SML relationship says:

Expected return on security i=Risk-free return + Market risk premium x Beta of security. Thus, we can say that the CAPM and the Security Market Line (SML) is same. It means that CAPM is also called the SML.

The CAPM or SML

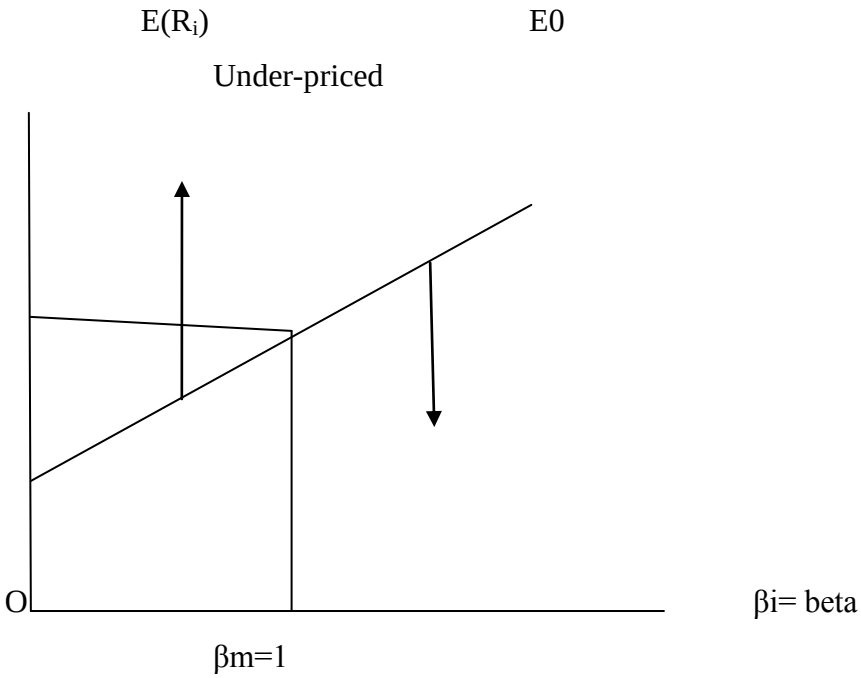


Figure depicts two assets, under and overpriced, which are not in equilibrium on the CAPM. Asset U is undervalued and, therefore, a very desirable asset to own. U's price will rise in the markets as more investors purchase it. However, as U's price goes up, its return falls. When U's return falls to the return consistent with its beta on the SML, equilibrium is attained. With O, just the opposite takes place. Investors will attempt to sell O, since it is overvalued, and therefore, put downward pressure on O's price. When the return on assets O increased to the rate that is consistent with the beta risk level given by the SML, equilibrium will be achieved and downward price pressure will cease.

Securities Market Indicators

Security market indicators are of two basic type- average and indexes. A stock market average is merely a weighted or un-weighted average price for group of stock. Stock market indexes typically employ more defined

methods to measure the level in the stock prices than do stock market averages.

"Index numbers are void of rupee value or other units of measure. Stock market indexes are usually calculated as ratios of rupee values. They are pure numbers that are used for making comparison between indexes, averages or other numbers. An index is usually a weighted average ratio that is calculated from an average of a large number of different stocks" (*Thapa, 2002).* The index numbers are typically a time series constructed from the same base value (which is usually set to be 100, 10, or 1). Some year in the past is selected as the base year from which the index's base value is calculated in other to impart a time perspective to the index.

2.2 Review of Related Studies

2.21 Review of Previous Article

The behavioral study of stock market plays a significant role in the development of capital market and to find out the realistic theoretical model to test the appropriate hypothesis in stock market. Considering this, various studies have been conducted about stock market behavior in development country and international prospects. These studies also have been an important note in least developed countries. In Nepalese context, there are few studies associated with stock market and most of them are related to theoretical concepts. Similarly, they are also associated with behavioral aspect and essential in stock market and in capital markets.

In global base, Philipe has studied about global stock market in twentieth century. The main purpose of this study is to estimate the long run expected return on equity in international base. About the implication of this study, they mention "In a famous article, Mehra and Prescott (1985) argue that standard general equities models cannot explain the size of the risk premium on US equities which average about 6% over the 1978-89 periods. The study showed that one would need very large difference of risk aversion, largely in excess of the usual value of two to generate such a premium. This upsetting result has sparkled a flurry of theoretical research that explains alternative performance structure: including dropping the expected utility assumption

and introducing habit function" (*Zorin and Goetman, 1995:954).* Capital appreciation index of 39 countries for the period of 2001 to 2006 is included in this study. Beyond, this global database allows us a broad investigation into the behavior of equity markets over the long run. Basically, it is based on less volatile market; about 6% annual growths and 20% standard deviation is considered in this study. To obey it, about half century of data is necessary to maintain these requirements. The main sources of data are IFC, IMF and WPI. All of the data are monthly based.

To compare the long term performance of global equity markets with annually compounded data, the percentage return one measured in normal term of load currency, in terms of wholesale price index (WPI) and U.S$. Similarly, arithmetic average return in percentage per annum and standard deviation one also calculate to find out risk and return of global equity markets in term of local currency, WPI,US$. The purpose of the study is to describe the behavior of stock price measures in real term around and dollar breaks (such as financial crisis credit crisis, civil war) etc, the series restart data, and subsequent changes when available. Real returns are in excess of WPI for the corresponding countries. To find out the return in dollar percentage on stock market indices, there exists survived market series and all market series are to measure in normal return in us dollars.

"These data provide unavailable information which helps to understand long-term histories of capital markets. If it relies on the historical data as the basis for estimate for long- term histories of capital growth, there is no reason to look at US data only. This why, our paper pints a broad picture of the performance of global stock market over more than 75 years of a turbulent country of financial markets"(*Zorin and Goetman1999:957).* The basic idea of this study is global capital market, which has been systematically subjected to dramatic change over this century. The US stock markets expect that the other markets of world have been closed and suspended due to financial crisis, wars, and expropriations on political upheavals. The US stocks capital appreciation return is 4.3%. The US stocks are in rather expectations than other markets because other markets return is only 0.8% median return. "These results suggest that the large equity premium obtained

in the US is at least partly to the results of conditioning may also create time variation unexpected returns; instance, we expect that market may do well exhibit more mean reversion than others because periods of large losses must be followed by periods of winnings. The performance of globally diversified portfolio is around 40.0%, which is the closest to the US equities. It should be clear that we fail to account for the "looser" as well as the "winner" in the global equity markets, we are providing a biased view of the history which ignores important about actual investment risk" (*Zorin and goetman 1999:976).*

The study have constructed a portfolio between foreign as well as domestic market and find out whether the domestic investors are able to get quick information than foreign investors and take enough benefits from it. According to the study,"The article develops a model of international equity portfolio investment flow based on difference in international endowments between foreign and domestic investors. It is shown that when domestic investors posses cumulative information advantage over foreign investors period when the return on foreign asset is high and so sell when the return is low". (*Breman and Henry, 1997:1092).*

The study assumes, "The major empirical implication of the model are the purchase of foreign equities will be a linear function of return on the domestic and foreign equity markets; and that the coefficient of return on the foreign market index will be positive, provided that foreign investors are and provided that the information advantage of local the results of gradual process of supervision information acquisition rather than of periodic large information leakage to locals. The sign of the coefficient of returns on the domestic market is indeterminate". (*Breman and Henry, 1997:1094).* The investor have a position in a stock market based on their past private information signals. Public signal helps the individual investors to revise their price of securities that they hold. All private and public information are reflected in the prices of stock. But it does not represent the perfectly efficient market. However, investor does revise the means of their predictive distribution in a way that depends on signal realization. Most importantly,

the less well-informed (i.e. foreign) investors revised the means of their distribution than better informed (i.e. local) investors.

By using the data of US treasury bulletin in quartile and transaction in equities and bonds, US resident are resident of large of other countries such as Canada, Germany, Japan, UK for the period 1982 to 1994, they concluded that "if the foreign and domestic investors are differentially informed, portfolios between two countries will be a linear function of the contemporaneous return on all natural market indices; and if domestic investors have a commutative information advantage over foreign investors about domestic securities the sufficient of the host market return will positive" (*Breman and Henry, 1997:1093).* The study observes US portfolio investment market and find strong evidence that US purchasers are positively associated with local market return in many countries. For higher developed or emerging market we do find significant evidence that portfolio flows are affected by most country returns as might be expected if flows were caused by relative wealth shift between residents of different countries. The model developed by Brennan and Henry is able to explain only a small proportion of the variance of international equity portfolios.

Similarly, Kent and Suvrahmandam (1988) study about investors' psychology and security market under and over reaction in American journal of Finance. The basic objective of this study was to find out investors psychology in stock market under react and overreact of security. To find out it, this theory was based on following two psychological bases: 1) investor's over confidence about precise of private information. 2) Biased Self-attribution, which causes asymmetric shift in investor's confidence as function of their investment outcomes. In brief the study described that, "This theory is based on investors' over confidence arising from biased self attribution. The premise of investors' over confidence is derived from a large body of evidence from cognitive psychological experiments and surveys which show that individual over estimate their own abilities in various contexts" (*Kent and Suvrahmandam,1988:1134).*

Information dissemination to public investors and arbitration of individual investors about private information has significant effects on investment decision in stock market. They have mentioned about it that "The market tendency to over and under react to different types of information allows us to address the remarkable pattern that the average announcement date return is virtually all event study are of the same sign as the average post event abnormal return. Suppose that the market observes not a public action taken by an informed party such as a firm at least partly in response to market misplacing, for example, a rationally managed firm may tend to buy back more of its stock when manager believed ,their stock is undervalued by the market. In such cases, the corporate event will reflect the manager's belief about the market valuation errors and will therefore predict future abnormal returns. In particular repurchases reflecting under valuation, will predict positive abnormal return and equity offering will predict the positive" (*Kent and Suvra hmandam, 1998:1139).*

The study has made some following assumptions:

- Investors are quasi-rational and they are optimizers expect for then biased updating of this precision.
- The model explains the price anomalies as market inefficiencies.
- Investors have a priority on the precision of these private signals and use an updating rule that reflects self –attribution biases.

To achieve above objectives, the paper develops a theory on investor's confidence and change in confidence. Confidence resulting from biased self-attribution of investment outcomes. The theory implies that investors over react to private information signals and under react to public information signals. In contrast with the common correspondence of positive or negative auto correlation with under reaction or over- reaction to new information, we show that positive return auto correlation can be constituent with long run negative auto correlation. The theory also offers an explanation for the phenomenon of average public event stock price reaction of the same sign as post event long run abnormal returns. This pattern has some time been interpreted as market under reaction to the event.

2.2.2 Review of Nepalese Articles/Journals

In Nepalese context, there are limited numbers of studies available about stock market behavior in small capital markets. Out of them, this study mainly concern with the risk and return analysis of joint venture bank. However there are not related studies are in some extent, related to the proposed study. In this context different articles and journal are reviewed.

(Pradhan, 1993) *"Stock Market Behavior in Small Capital Market"* The study about stock market behavior in small capital market; in case of Nepal was conducted (*Pradhan, 1993)*. This helps to provide at least some insight into stock market behavior in Nepalese context by concerning listed and traded shares in secondary market. The purpose of this study is to address the stock market equity, market value to book value, price earnings and dividends with liquidity, leverage profitability assets turnover and interest coverage. To find out the above objectives, the study period is based on cross sectional analysis of 55 observations and the study period of 1986 to 1990. According to him, this paper is based on pooled cross section analysis of 55 observations. Data could not be obtained on contacting the individual enterprises as they traded them confidential (*Pradhan1993).*

"Due to initial and un-established stage of stock market, there is no system yet to compile and publish stock market data on a regular basis. There is no database, which make it difficult to carry out any research in Nepalese stock market. Considering the study period of 1986 to1990, usable data could be obtained for 17 enterprises" (*Pradhan1993).* These enterprises are in different sectors such as manufacturing, banking, trading, hotels, insurance etc. in this study, he has constructed three different level of portfolios of sample securities(small, intermediate, and large). According to the study, market value to book value, P/E ratio and DPS to MPS, DPS to EPS, analyzed liquidity, leverage, earnings and coverage of each portfolio in terms of larger and smaller and also average ratios are computed. The study concluded that " the result indicate the larger stock have longer price earnings ratios larger ratio of market value to book value of equity, lower

liquidity, lower profitability, and small dividends. Price earnings ratio and dividend are more variable for smaller stocks, whereas market value to book value of equity is more variable for larger stocks. Larger stock also has higher leverage, lower assets turnover and lower interest coverage but there are more variables for smaller stocks than for larger stocks. Stock will larger market value to book value of equity has larger price earnings ratio and lower dividends. These stocks also have lower liquidity, higher leverage, lower profitability, and lower turnover, lower interest coverage. However, there are more variable for assets with smaller price earnings ratio. Stock paying higher dividends have higher liquidity, low leverage, high earnings, higher turnover and high interest coverage, liquidity and leverage ratio are more variable for the stock paying lower dividends while earnings assets turnover and interest coverage more variable for the stock paying higher dividends" (*Pradhan1993).*

(***Shrestha, 1998)*** *"Shareholder's Democracy and Annual General Meeting Feedback"* critically analyzed the situation of common stock investors. Company and other acts relating to financial and industrial sectors has provisioned rights of the shareholders as ; voting right, participation in general meeting, right of getting information, electing board of director, participation in the profit and loss of the company, transferring shares, proxy representation. And the collective rights of the shareholders are; amend the internal by laws, authorize the sales of assets, and enter into merger, change amount of authorized capital.

According to the research study, "Some public limited companies have floated the shares to the general public without having shareholders representation in the board. There are many such companies, which conduct the annual general meeting just to fill their desire, and do not consider the voice of the majority of the shareholders. Similarly management involvement and government interview in the board election have brought a greater set back in the voting rights of the shareholder" (*Shrestha, 1998:12).* He argued further to safeguard the investor's interest. The encouraging and growing confidence of shareholders over their investment seek an

independent inquiry of disclosed contents of prospectus. This helps to satisfy a minimum standard a faith on investment in shares through relying and pros and coins of prospectus. "In this context the expression of disclosure philosophy and investigation of frauds in prospectus need to be reconciled to check growing problems in the development of the capital market in Nepal"(*Shrestha, 1998).*

Manandhar (2008) has conducted the study about "*Dividend policy and Value of the Firm in Small Stock Market"* in the context of Nepal. The basic objective of this study is to find out the financial variable that is related to market equity. "The study is aimed at identifying some of the significant variables that are significant to the value of the firm. The analysis, to some extent, helped to understand the dividend policy of the sample companies and their effects on market value of the firm as represented by market capitalization and this understanding helps to know the relevancy and irrelevancy of dividend policy on market capitalization in the stock market in Nepal"(*Manandhar,2008).* At the time of research, it was found the following problems in stock market and dividends practices:

- Most companies are understanding the expectation of investors and thereby resulting how marketability of share and trading floor of stock exchanges.
- Majorities of the companies are declaring dividends less than risk free rate and market risk premium.
- The relationship between the earnings, dividend pay-out and growth of the expansion program of the companies does not match with financial needs of companies.
- Companies do not follow sound dividend policy. These are the main causes that are related to the low price of stock and low volume in stock market.

The find the above stated objectives, this study has included the financial data that are related to secondary market of top ten companies of the year 1995/96 on the basis of traded amount. According to this study, the model

developed and used to test the hypothesis was multiple regressions, which is implied to test and analyze the cause and effect relationship between dependent and independent variables. So the independent variables are dividend per share, earnings per share, return on equity, divided by closing market price and market price of equity is taken as dependent variable.

At last, the study found out that "The financial variables taken under study to understand the dividend policy followed are DPS,EPS,P/E Ratio, ROE through not exhaustive, based on analysis. It is found that DPS, ROE and D/P ratio have significant impact on MPS whereas ROE and P/E ratio have found no significant impact on market value" (*Mahandhar,2008).*

Ghimire (2011) has written an article on "*Nepal Share Market and Investors Prospect*" in business age magazine. In this study he has pointed out some important trends our capital market. He has concluded that the Nepalese share price is decreasing because of many unbalanced factors. The major reason behind the movement in the index is the domination of the banking sector script in the Nepalese stock market transactions. Mismanagement practices cannot help the growth of share market. The general public has invested without information. They just believe what one broker or the investor says about scrip. One of the prime motives for the investment is to earn return on it. Finally he concludes that the general investors should be alert and aware of the situation. They must receive the financial information before they make investment and act rationally.

2.2.3 Review of previous Thesis

The studies performed related to topic Risk and Return Analysis 'but there are no study performed in this specific topic i.e. Risk and return analysis of joint venture banks of Nepal. However they performed studied are in some extent, related to the proposed study. In this context different thesis are reviewed.

Upreti (2010) on his topic "*A study on securities investment in Nepal".* The study conducted on securities by using five year data 2004 to 2009. The data

and other necessary information were collected by using secondary data. Both statistical and financial tools were used in his research studies.

Major Objectives:

- To security investment in common stock of commercial bank.
- To explain portion of systematic risk and unsystematic risk from the total risk.
- To shows the current market movement, banking index movement and selected commercial banks price movement in trend line.

Major Findings:

- Although, interest rate on fixed deposit is an immediate return generated through saving, the return on securities cannot be exactly predicted. Some of the companies have not even declared dividend for two/three year. Whatever the shareholder has yielded on their securities investment is very low (Avoiding exceptional cases of some financial and banking institution) as compared to the immediate return earned through fixed deposit. But he had not stated the common stock return in any extent figure.
- "Leaving some exceptional cases aside, aside, almost all the companies experienced their market price going down by less than 50% in 2006. Even the banking group could not spare the share price going down more specifically, the year 2006 was disheartening period for the stock price. It is because, almost all the company's share price during the year were down even in some cases below the face value. The study recommended liberalization the government policy by removing capital control and barrier to attract foreign portfolio flows, which is essential for the development of stock market.

Adhikari (2011) has conducted study on "*Analysis of Portfolio on common stock investment with special reference to banking industry"*. The study is closely related with the current study in the sense that sense that both

studies are related with risk and return analysis of commercial banks. Both statistical and financial tools were used.

Major objectives:

- To analyze risk and return of investment in common stock of sample bank.
- To evaluate common stock price under CAPM method.
- To analyze how to create optimal portfolio combination using selected sampled commercial banks.

Major Findings:

- The study that, "Banking industry is the biggest one in terms of market capitalization and turnover. Expected return on the common stock of Nepal bank ltd is maximum, (i.e. 66.99%) and common stock of Nepal SBI Bank Ltd. Is found minimum.
- In regard common stock of NBL is most risky and common stock of NSB is least risky. In context of industries, expected return of finance and insurance industry is found highest. Expected return of banking industry is 60.83%.
- At the end of this study he has concluded that common stock of Nepal Bangladesh Bank (NBB) is the best one for investment. He further added that "In the other hand, portfolio between the common stock of NGB and BBC is 0.2666, but portfolio standard deviation is only 0.1497, which is less than each individual stock's standard deviation, hence, the portfolio approach of investment is better way to win stock market investment.

Upadhya(2012) has conducted on "*Risk and return Analysis of common stock"*. The major objective of the study is to analyze the stock market performance. The data and other necessary information were collected by using secondary data. Both statistical and financial tools were used.

Major objectives:

- To study the risk and return of analysis of common stock.
- To determine relation of each bank with the industry index.
- To explain portion of systematic risk and unsystematic risk from the total risk.
- To show the current market movement, banking index movement and selected commercial banks price movement in trend line.

Major findings:

- In his study, the study found that; as overall economy, Nepalese stock market is emerging state. Its development is accelerating since the political change in 1990 in effect of openness and liberalization in national economy, but due to the lack of information and poor knowledge, Nepalese individual investors cannot analyze the security as well as market properly.
- He has taken eight banks as sample. The simples of his studies are, Nepal Arab Bank Ltd. (NABIL), Nepal Investment Bank Ltd.(NIBL), Standard Charted Bank Ltd. (SCBNL), Himalayan Bank Ltd (HBL), Nepal SBI Bank (SBI), Nepal Bangladesh Bank Banks Ltd.(NBBL) , Everest Bank Ltd. (EBL) and Bank of Kathmandu Limited (BOK)
- In his findings, he found that the return is income receive on a stock investment, which is usually expressed in percentage. Expected return of the CS of Nepal SBI Bank Ltd is found minimum. Expected return of NABIL is also favorable with 25% expected return. Standard deviation is only the measure of unsystematic risk, which is not defined by market.
- Another major aspect of the risk is systematic risk, which is defined by market and measured by beta (β) coefficient. Beta explains the sensitive or volatility of the stock with market, higher the greater the volatility. NABIL and HBL's CS are also volatile as far as beta is concerned.
- Tools that have been considered in this study may not be appropriate in our economy giving view to the prevailing condition in western market, which may not perform exactly as it should in condition like ours. Investors can develop different kinds of look for analyzing, for this they can consult concerned organization e.g. NEPSE people and SEBON.

- Using various tools has been beneficial. e.g. coefficient of variation (C.V) suggests that the other industry is the best one for investment. But Banking industry may be the best, if other subjective analyses are also been considered. Investors need to diversity their fund to reduce risk. Proper construction of portfolio will reduce considerable potential loss which can be defined in terms of risk. But portfolio construction is a dynamic job, because efficient portfolio construction selects the stocks that have higher return with no correlation or negatively correlation stocks. Similar stocks cannot diversify risk properly.

Shakya (2012) has conducted a study on "*Risk and Return Analysis of the Commercial Bank with special reference to 6 Commercial Banks"* is also relevant to this study. The time period covered by this research was five year. The data and other necessary information were collected by using secondary data. Both statistical and financial tools were used.

Major Objectives:

- To study the risk and return of the samples commercial banks (6 out of 27 banks) and also analyze their coefficient of variance.
- To perform the comparative analysis of the risk and return on the common stocks as the selected banks.
- To find out how sensitive the stock price of the selected commercial banking sector as whole with that of the NEPSE.
- To provide the valuable suggestion about the risk and return on stock of commercial banks that could be the deciding factor for the investor in their investment.

Major Findings:

- Shares of Commercial banking sector are more lucrative for the investor to invest. It is safer for the Nepalese investor in this sector. The covariance and beta coefficient of commercial banking sector with that of the market are also good enough for the general investor to invest in this sector.
- Among the commercial banking sector too, investor should invest in shares of EBL as their coefficient of variation are good than other sampled

commercial banks. However NABIL, NIBL and BOK are more risky at the present time to invest in its share than other selected banks.

- Analysis of personal risk, attitude, needs and requirement will be helpful before making an investment in stock market, investor should make several discussion with stock holder before reaching at the decision. Investor should make then-decision on the basis of reliable information rather than the imagination and roomers.

Sapkota (2013) study on "*Risk and return analysis and optimal portfolio creation of common stock Investment (with references to SBI, NABIL, BOK, NIC, EBL and SCBNL)".* Both statistical and financial tools were used.

Major objectives:

- To analyze risk and return of investment in common stock of commercial bank.
- To determine relation of each bank with the industry index.
- To explain portion of systematic risk and unsystematic risk from the total risk.
- To evaluate common stock price under CAPM method.
- To analyze how to create optimal portfolio combination using selected commercial banks.
- To show the current market movement, banking index movement and selected commercial banks price movement in trend line.

Major Findings:

- BOK's common stock is yielding the highest Expected rate of return with 87.42%. Whereas it is the lowest 57.40% in case of EBL.
- The other banks rate of return are 80.13%, 76.29%, 73.58% and 72.84% of the highest 81.82% risk, whereas EBL's stock is least risky as is consist of only 37.17% risk and BOK, SBI, NIC and SCBNL risk is 75.87%, 66.89%, 56.42% and 50.38% of respectively.
- Coefficient of Variation Analysis it is resulted that there is highest risk beard by investor in NABIL where for per unit return, risk is 1.02 whereas it is the lowest for EBL. All Banks have unsystematic risk which Risk can be

diversifiable. The highest USR 99.87% at total risk common stock of SBI Bank, whereas the lowest UST for EBL i.e. 42.10%. BOK's stock is aggressive i.e. market sensitive, to the market changes as evaluated by the highest beta coefficient of 1.25%, whereas it is lowest 0.0582 in case of SBI.

- The other Banks beta are 0.7346, 0.6968, 0.6932 and 0.5983 at NIC, SCBNL, EBL, and NABIL respectively.

Neupane (2013) study on "*Risk and Return Analysis of common stock Investment of listed commercial banks"* concluded that all the commercial banks are very much risky with fluctuated rate of return.

Major Objectives:

- To analyze risk and return of analysis of common stock of listed commercial banks.
- To study the systematic risk and unsystematic risk from the total risk.
- To analyze how to create optimal portfolio combination using selected commercial banks.

Major Finding:

- The study found that beta coefficient of all sample banks is very much volatile except EBL stock.
- The study shows that all commercial banks under study required rate of return is less than expected rate of return, so all stocks are underpriced. It shows that all the banks have stock with good investment opportunity. it is also concluded that NIBL and EBL is higher portfolio return and HBL and EBL is lower portfolio risk.
- Moreover, the study concluded that NIBL and EBL have higher portfolio return and HBL and EBL have lower portfolio risk. It shows that EBL has high proportion of unsystematic risk i.e. 77.18% and HBL has high proportion of systematic risk i.e. 97.49% which cannot be minimized from internal factor, Common stock of EBL is best among these Banks.

2.3 Research Gap

From the Review of various books, Articles and theses, this study is different from previous studies in term of risk and return analysis. In this study, researcher has taken six joint venture banks in order to construct optimal portfolio by using Sharpe Single Index Model (SIM) on the basis of excess return to beta ration [(R- risk free rate)/βi] i.e. expected change in the rate of return on security i associated with 1 percent change in the market return. Researcher focuses only the risk and return analysis of selected joint venture banks. These which are reviewed in this chapter also based on risk return analysis of commercial banks are providing relevant information to shareholders and investor and the fact to carry out this thesis is to provide investor real, accurate and updated information as soon as possible. This study will be fruitful to those interested person, researchers, students, teachers, businessman, government for academically as well as policy perspectives.

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research Design

This research has been based on recent historical data collected from NEPSE, Securities Board and other sources. It deals with the common stocks of selected listed companies. It covers the period of last eight years i.e. from F.Y. 2004/05 to 2013/13. Discussions have been made to interpret the existing secondary information, which have been analyzed by using analytical tools and techniques. Descriptive and analytical research designs have been followed for the study.

3.2 Population and Sample

There are 30 commercial banks which have been assumed as the population of the study and among them following six listed joint venture banks are selected for the study. They are:

i) Nabil Bank Limited (NABIL).
ii) Nepal Investment Bank Limited (NABIL).
iii) Bank of Kathmandu Limited (BOKL).
iv) Himalayan Bank Limited (HBL).
v) Standard Chartered Bank Nepal Limited (SCBNL).
vi) Everest Bank Limited (EBL).

3.3 Source of Data

The main sources of data were secondary data. During the study the data had been taken from the Nepal Stock Exchange, individual investor and stockbrokers. Price of the different stocks, NEPSE index was collected from Nepal Stock Exchange. The main source of data was annual trading report published by NEPSE, Securities Board and other concern listed companies' annual report, journal and Nepal Rastra Bank's annual, quarterly publications and others.

3.4 Method of Analysis

3.4.1 Market price of Stock (MPS)

Among the various major data of this study, market price of stock is the most important. There are three-price records available, namely high price, low price and closing price of each year. Therefore two approaches either average price(i.e. average of high and low price) or closing price can be used. By using average price, result may be very close to reality as it represents the price of whole year. But it is very difficult to obtain the real average. To get the real average, volume and price of each transaction in the stock and duration of time of each transaction in the whole year are essential. So, it is of course very hard and difficult to gather and include all these information and average of high and low price cannot be used for this study. Due to such difficulties, it is very difficult to use average price as market price of stock. So, the closing price issued as market price of stock, which has a specific time span of one year and the study has focused in annual basis.

3.4.2 Dividend (Div)

Company pays dividend to its shareholders. If a company declares only cash dividend, then there is no problem to take the dividend amount but it is not necessary to pay dividend in the cash form. Company can pay dividend to shareholder in the form of stock i.e. bonus share. So, if a company declares stock dividend, it is difficult to obtain the amount that really shareholder has gained. In such condition, shareholders get additional number of shares as dividend and simultaneously price of stock declines, as a result of increased number of outstanding stock. So, to get the real amount of dividend, there are no any models or formula developed yet. In this study, models have been developed considering practical as well as theoretical aspect.

Model of dividend

- In case of stock dividend

Total dividend amount= cash dividend + stock div% x next year's MPS.

- In case of' right issued' at par:

Total dividend amount= cash dividend+ right issued% x next year's MPS

3.4.3 Return on Common Stock Investment (ER_j)

Return is the income received on an investment plus any change in the market price, usually expressed as a percent of the starting or begging market price of the investment.

Symbolically, $$E(Rj) = \frac{Div + (Pt - Pt - 1)}{Pt - 1}$$

Where, $E(R_j)$ = Actual rate of return on common stock at time 't'.
Div = Cash dividend received at time't'.
P_{t-1} = Price of stock at time (t-1).

3.4.4 Expected Return of Common Stock $E(R_j)$

The expected rate of return is the expected after tax increase value of the initial investment over the holding period. The overall rate of return can be decomposed into capital appreciation and dividend components. Capital appreciation is the difference between investor's end of the period beginning of the period. One at the main observation of the study is to determine the expected return on common stock investment. Generally, the rate is obtained by arithmetic mean of the past last year return.

Symbolically,

$$E(Rj) = Rj = \frac{\sum Rj}{n}$$

Where,

$E(R_j)$ = Expected rate of return on stock
n = Number of years that the return is taken
$\sum$ = Sign of summation

3.4.5 Standard Deviation (σ_j)

The Standard deviation is the other measure of investment risk. The smaller the standard deviation the lower wills the degree of risk of the stock. The formula for the standard deviation is,

Symbolically,

$$\sigma j = \sqrt{\frac{(\sum Rj - Rj)2}{n - 1}}$$

where,
σj = standard deviation of returns on stock j during the time period 'n'.
ER_j = Return on common stock 'j' investment.

$E(R_j)$ = Expected return on common stock.
n = Number of observation.

The total risk (σj) can also be defined as the sum of systematic risk plus unsystematic risk. Systematic risk has its source factor that effect all marketable assets and this cannot be diversified away. The sources of systematic risk are market pervasive. The measure of systematic risk permits and investor to evaluate an assets required rate of return relative to the systematic risk of stock. Unsystematic (or company specific) can be reduced through diversification. The relation of systematic risk and unsystematic are shown below.

Total risk (σj) = Systematic Risk + Unsystematic Risk

$$= \sigma_j(\sigma_{jm}) + \sigma_j (1-\sigma_{jm})$$

In this equation σ_{jm} is the correlation coefficient between the returns of a given stock (i) and return on market portfolio.

3.4.6 Coefficient of Variation (C.V)

The coefficient of variation is the other useful measure of risk. It is the standard deviation divided by expected return, which measure risk per unit. It provides a more meaningful basis for comparison when the expected returns on two alternatives are not same. If investor believes that the rate of return should be increase as the risk increase, then the coefficient of variation provides a quick summary of the relative tradeoff between expected return and risk.

Symbolically,

$$C.V = \frac{\sigma j}{Rj}$$

In general the CAPM indicates that assets required returns should be related to the risk free rate of return plus a risk free return based on beta of the assets.

3.4.7 Beta Coefficient (β)

The beta coefficient (β), a measure of systematic risk, can be calculated using the following formula.

Symbolically,

$$\text{Beta coefficient } (\beta) = \frac{Cov.(Rj * Rm)}{\sigma 2 * m}$$

Where,

(β) = beta coefficient of stock j.

Cov (R_j,R_m) = Covariance between R_j and R_m and is equal to

$$\text{Cov } (R_j,R_m) = \frac{(Rj - RJ)(Rm - Rm)}{n-1}$$

σm^2 = Varience of market return

Cov. (R_j,R_m) is the covariance between the return of an individual assets j and the return of the market R_m and σm^2 is the variance of the market return. Stock can be classified as aggressive or defensive or average depending on the value of beta coefficient.

Beta Coefficient	Stock Classification	Degree of Risk
Exactly 1	Aggressive stock	Equally risk as the market
Greater than 1	Aggressive stock	More risky than the market
Less than 1	Defensive stock	Less risky than the market

Beta coefficient can be related with the CAPM equation to determine the required rate of a given stock. The required rate of return is the risk free rate of return plus risk premium based on the beta of stock (β_j).

$$E(R_j) = R_f + [E(R_m) - R_f] \times (\beta_j)$$

3.4.8 Co-variation (COV)

The covariance is the statistical measure of relationship between two random variables. The statistical method is applied to measure the relationship between two variables. Hence covariance is statistical measure of how the returns of two assets move together. This indicates the integrative risk of security relative to other in a portfolio of security.

Symbolically, Covariance $(Cov_{jk}) = (\rho_{jk}) = \frac{\rho\,[(Rj - R(RJ)]\,[(Rk - (E(Rk)]}{n}$

Where, Cov_{jk} = covariance between assets j and k
ρ = Probability distribution of return of assets for period.
R_j = Rate of Return of assets j.
$E(R_j)$ = Expected rate of return of assets j.
R_k = Rate of return of assets k.
$E(R_k)$ = Expected rate of return of assets k
n = Number of observation.

The covariance is measured of how return of two securities move together. if the return of the two securities move in the same direction consequently the covariance would be positive. If the return of the two securities moves in the opposite direction consequently the covariance would be negative. If the covariance of returns were independent each other covariance would be close to zero.

3.4.9 Correlation Coefficient (ρij)

Correlation is a measure of the relationship between two assets. The correlation coefficient can take on value ranging from -1 to +1, correlation and covariance are related by the following equation.

Symbolically, $Cov_{ij} = \sigma i \sigma j \rho ij$

Therefore, $\rho ij = \frac{Covij}{\sigma i \sigma j}$

Where σi and σj are the standard deviation of return for assets i and j, and ρij is the correlation coefficient for assets i and j.

There are various cases of correlation and risk condition, which are presented below:

Perfectly Positive Correlation (ρij = +1)

Returns on two perfectly correlated stocks would move up and down together and portfolio consisting of two such stocks would be exactly as risky as the individuals stocks. Thus , diversification does nothing to reduce risk if the portfolio consists of perfectly correlated stock.

Perfect Negatively Correlation (ρij = -1)

Return on two perfectly negatively correlated stocks would move perfectly together but in exactly opposite direction. In this condition, risk can be

completely eliminated. Perfect negative correlation almost never found in the real world.

No relationship between return (ρij = 0)

When the correlation between two stocks is exactly zero, there is no relationship between the returns; they are independent of each other. In this condition, some risk can be reduced.

Intermediate risk (ρij = +0.5)

Most stocks are positively correlated, but not perfectly. On the average, the return on two stocks would lie on the range of +0.4 and +0.75, under this condition, combining stocks into portfolios reduces risk but doesn't eliminated at completely.

3.4.10 Portfolio Return (R_p)

Portfolio is the combination of two or more securities or assets and portfolio return is simply a weighted average of individual stock returns. Portfolio return is simply the weighted average of the expected returns on the individual stock returns. Portfolio return is simply the weighted average of the expected return on the individuals assets in the portfolio stock the weight being the fraction of the total portfolio invested in each asset. Weight of assets in a portfolio is the proportion of the fund invested in the assets.

Symbolically,

$$ER_p = W_A E(R_A) + W_B E(R_B)$$

Where,

R_p = Expected return on portfolio of stock A and stock B

W_A = Weight of stock A.

W_B = weight of stock B $\qquad W_A + W_B = 1$

3.4.11 Portfolio Risk (σ_p)

The variance of return and standard deviation of return are alternative statistical measure used to measuring portfolio risk. These statistics measure the extent to which returns are expected to vary around and average over

time. For calculating the risk of a portfolio of assets, the riskiness of each assets, weight and relation between assets are considered. Therefore the portfolio risk is measure by the combined standard deviation of the standard deviation of individual's stock returns.

Symbolically,

$$\sigma_p = \sqrt{w2A\sigma2A + W2B\sigma B2 + 2WAWBCov(RA.RB)}$$

Or, $$\sigma_p = \sqrt{W2A\sigma2A + W2B + \sigma2B + 2WAWB\rho AB.\sigma2A.\sigma2B}$$

Where,

σ = standard deviation of portfolio returns of stock A and stock B.

Cov.(R_A.R_B)= Equivalent representation covariance of returns between assets A and B.

3.4.12 Risk Minimizing Portfolio

In a two assets portfolio, some particulars combination of the two assets will result in the least possible variance, the same is a true of large portfolio. Some combination produces the lowest variance. This is called risk minimizing portfolio. Risk minimizing portfolio is also known as minimum variance portfolio or minimum standard deviation portfolio. The portfolio return to the portfolio that has the least risk among all the possible portfolio. The most risk averse investor may be interested in such a portfolio. So it is the ratio of the two assets, which minimize the risk (σ_P).

Symbolically,

$$W_A = \frac{\sigma2B - Cov.(RA.RB)}{\sigma2A + \sigma2B - 2Cov.(RA.RB)}$$

Where,

W_A = Weight of stock A that minimize the portfolio risk of stock A and stock B.

σ_A = Standard deviation of stock A.

σ_B = Standard deviation of stock B.

CHAPTER IV
DATA PRESENTATION AND ANALYSIS

4.1 Analysis of Data

This chapter data presentation and analysis is the main body of the study. Details data of market price per share and dividend per share of each commercial bank, NEPSE index of each industry or sector and the market are presented and their interpretation and analysis are included in this chapter. On the background of various reading and literature review in the preceding chapter, it is tried to analyze and diagnose the recent Nepal stock market movement, with taking a special reference with joint venture banks of Nepal. Different tables and figures are used to make the result more simple and understandable.

Among the listed joint venture banks only six joint venture banks are taken as sample. As the title is "PORTFOLIO CONSTRUCTION OF NEPALESE COMMERCIAL BANKS with reference to NABIL, NIBL, BOK, HBL, EBL and SCBNL", it is necessary to analyze the common stock of selected commercial banks.

4.1.1 Nabil Bank Limited (NABIL)

4.1 Data

Market price, divided records of common stock of NABIL are shown in Table 4.1, Price is maximum (RS5275) in year 2007/2008 reached at its lowest Rs. 1252 in year 2010/2011. Similarly closing price are Rs 1505, Rs. 2240, Rs.5050, Rs.5275, Rs.4899, Rs.2384, Rs 1252, Rs.1355, Rs 1815 in year 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013 respectively. Year end price is shown in figure 4.1. Figure shows that closing price is fluctuating trend. The price was increasing trend 2004/05 to 2007/08 and decrease in F.Y 2009/10 to 2011/12 and again increasing slowly trend in 2012/13. Annual dividend amount was increasing trend to 2007/08 and it is decreased and fluctuating trend. It shows in table 4.1

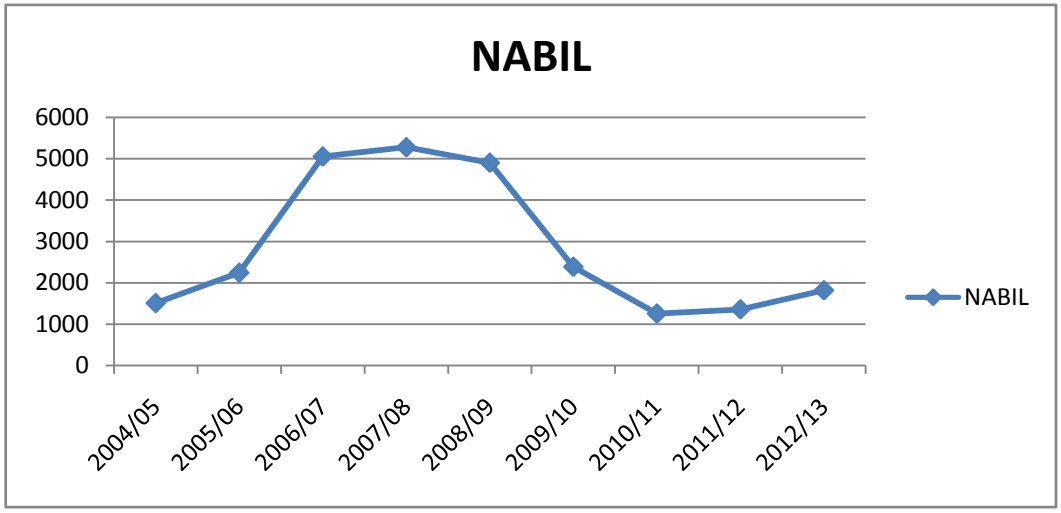
Table4.1 Mps and Dividend Data of NABIL

F.Y	High MPS	Low MPS	Closing MPS	%of Share Bonus	Cash Dividend (Rs.)	Total Dividend
2004/05	1515	1000	1505	-	70	70
2005/06	2300	1500	2240	-	85	85
2006/07	5050	2025	5050	40	100	2210
2007/08	6700	3410	5275	40	60	2020
2008/09	6400	3050	4899	50	35	1227
2009/10	5240	1665	2384	40	30	530
2010/11	2337	790	1252	-	30	30
2011/12	1585	781	1355	20	40	403
2012/13	2000	1101	1815	25	40	615

Source: *Nepal stock Exchange Trading Report*

Total dividend = cash dividend+ % stock bonus x next year's MPS

Figure 4.1 Year- end price Movement of NABIL



4.1.1.2 Realized Returns (R), S. D(σ),variance (σ^2) and Expected Return(R□)

To calculate realized rate of return, year –end price and divided amounts are used. Table 4.2 shows the calculation of yearly- realized returns, expected return and standard deviation of returns. Expected return of the common stock of NABIL is 0.4135, and standard deviation of NABIL is 0.7908, variance is 0.6254 and C.V is 1.9125.

Table 4.2 Realized Rate of Returns, Expected Returns , S.D,C.V of NABIL

F.Y	Closing MPS (RS)	Dividend(Rs.)	R=$\frac{Dt+(Pt-Pt-1)}{Pt-1}$	(R-R□)	(R-R□)2
2004/05	1505	70	-	-	-
2005/06	2240	85	0.5449	0.1314	0.0173
2006/07	5050	2210	2.2410	1.8275	3.3398
2007/08	5275	2020	0.4445	0.0310	0.0010
2008/09	4899	1227	0.1613	-0.2522	0.0636
2009/10	2384	530	-0.4051	-0.8186	0.6701
2010/11	1252	30	-0.4622	-0.8757	0.7669
2011/12	1355	403	0.4041	-0.0094	0.0001
2012/13	1815	615	0.7933	0.3798	0.1442
Total			∑R= 3.7218		∑(R-R□)= 5.003

Source: Nepal Stock Exchange Trading Report

We have,

$$\text{Expected rate of return } E(R□) = \frac{\sum R}{n} = \frac{3.7218}{9} = 0.4135 = 41.35\%$$

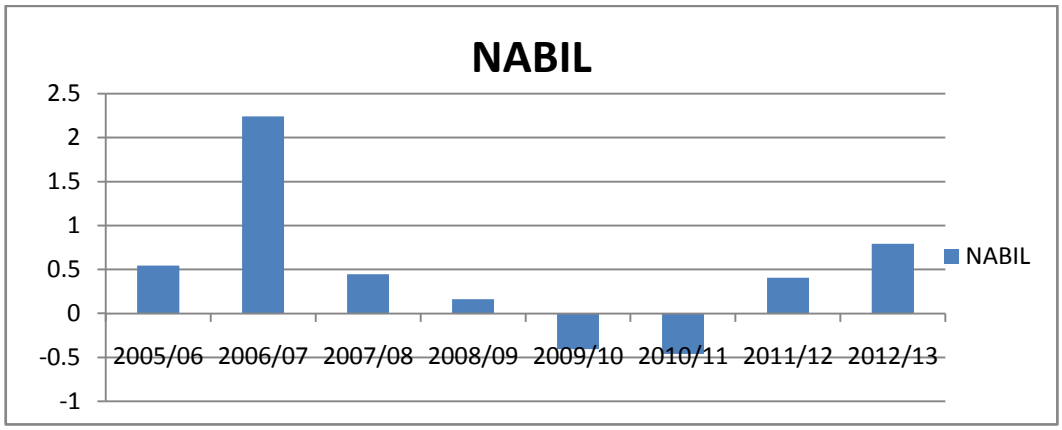
$$\text{Standard deviation}(\sigma) = \sqrt{\frac{(\sum R - R□)^2}{n-1}} = \sqrt{\frac{5.003}{9-1}} = 0.7908$$

=79.08%

$$\text{Variance } (\sigma^2) = \frac{(\sum R - R□)^2}{n-1} = \frac{5.003}{9-1} = 0.6254$$

$$\text{C.V} = \frac{\sigma}{R□} = \frac{0.7908}{0.4125} = 1.9125$$

Figure4.2: Annual Return of Common stock of NABIL



4.1.2 Nepal Investment Bank Limited (NIBL)

4.1.2.1 Data

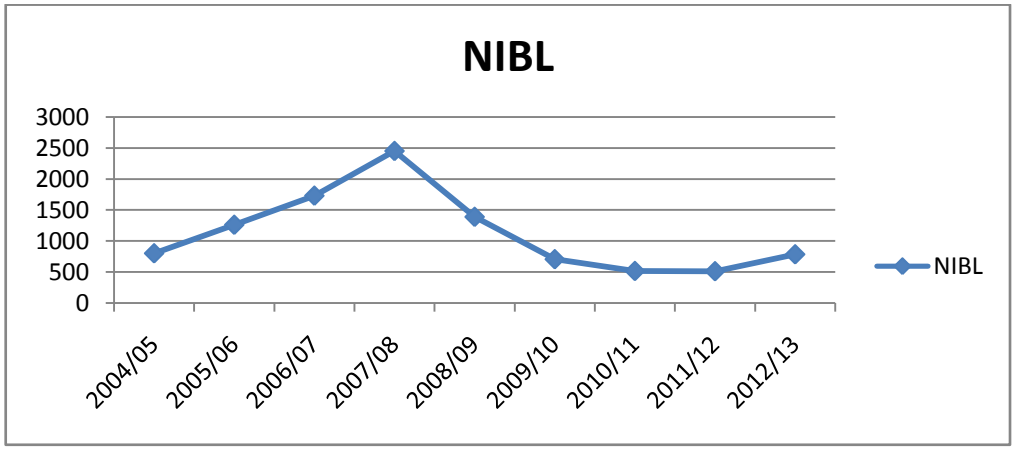
Market price, divided records of common stock of NIBL are shown in Table 4.3, year-end price is shown in the Figure 4.3. Price is maximum (Rs.2450) in year 2007/2008 reached at its lowest Rs. 511 in year 2011/2012. Similarly closing price are Rs 800, Rs. 1260, Rs.1729, Rs.2450, Rs.1388, Rs.705, Rs 515, Rs.511 and Rs.784 in year 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013 respectively. Year end price is shown in figure 4.3. Figure shows that closing price is fluctuating trend. The price was increasing trend 2004/05 to 2007/08 and decrease in F.Y 2008/09 to 2011/12 and again increasing slowly trend in 2012/13. Annual dividend amount was in fluctuating trend. It shows in table 4.3.

Table4.3 Mps and Dividend Data of NIBL

F.Y	High MPS	Low MPS	Closing MPS	%of Share Bonus	Cash Dividend (Rs.)	Total Dividend
2004/05	1430	760	800	-	12.50	12.50
2005/06	1265	762	1260	34.40	20	614
2006/07	1729	1000	1729	25	5	617
2007/08	3101	1305	2450	33.33	7.5	470
2008/09	3670	990	1388	-	20	20
2009/10	1370	570	705	-	25	25
2010/11	745	365	515	25	25	153
2011/12	660	355	511	25	5	201
2012/13	953	400	784	10	25	117

: Nepal stock Exchange Trading Report

Figure 4.3: Year- end Price Movement of NIBL



4.1.2.2 Realized Returns (R), S.D(σ),variance (σ^2) and Expected Return(R□

)

To calculate realized rate of return, year –end price and divided amounts are used. Table 4.4 shows the calculation of yearly- realized returns, expected return and standard deviation of returns. Expected return of the common stock of NIBL is 0.3430, and standard deviation of NABIL is 0.6103, variance is 0.3725 and C.V is 1.779

Table 4.4 Realized Rate of Returns, Expected Returns, S.D, C.V of NIBL

F.Y	Closing MPS (RS)	Dividend(Rs.)	R=$\frac{Dt+(Pt-Pt-1)}{Pt-1}$	(R-R□)	(R-R□)^2
2004/05	800	12.50	-	-	-
2005/06	1260	614	1.3425	0.9995	0.9990
2006/07	1729	617	0.8619	0.5189	0.2693
2007/08	2450	470	0.6888	0.3458	0.1196
2008/09	1388	20	-0.4253	-0.7683	0.5903
2009/10	705	25	-0.4740	-0.8170	0.6675
2010/11	515	153	-0.0524	-0.3954	0.1563
2011/12	511	201	0.3825	0.0395	0.0016
2012/13	784	117	0.7632	0.4202	0.1766
Total			∑R= 3.0872		∑(R-R□)^2= 2.9802

Source: *Nepal Stock Exchange Trading Report*

We have,

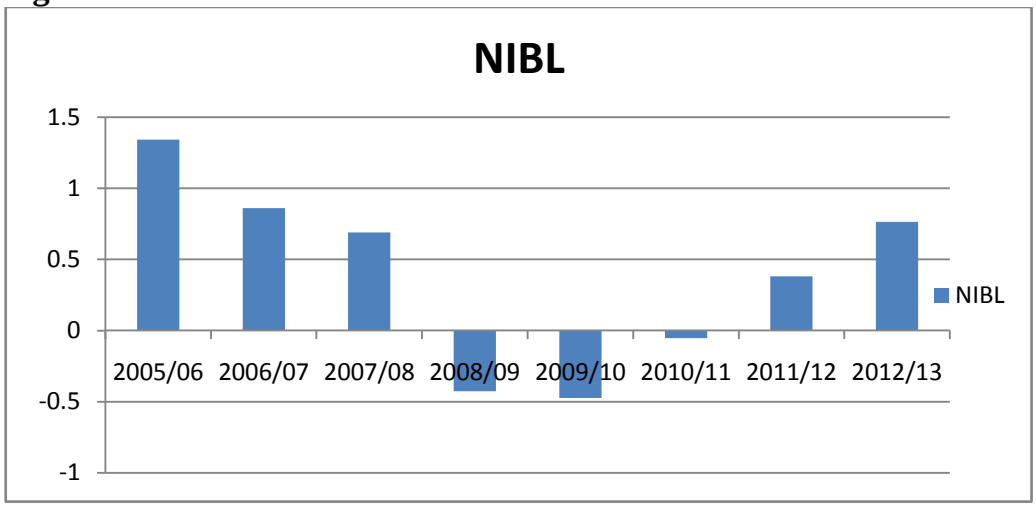
$$\text{Expected rate of return } E(R\square) = \frac{\sum R}{n} = \frac{3.0872}{9} = 0.3430 = 34.30\%$$

$$\text{Standard deviation}(\sigma) = \sqrt{\frac{(\sum R - R\square)^2}{n-1}} = \sqrt{\frac{\mathbf{2.9802}}{\mathbf{9-1}}} = 0.6103 = 61.03\%$$

$$\text{Variance } (\sigma 2) = \frac{(\sum R - R\square)2}{n-1} = \frac{2.9802}{9-1} = 0.3725$$

$$C.V = \frac{\sigma}{R\square} = \frac{0.6103}{0.3430} = 1.7793$$

Figure 4.4: Annual Return of Common Stock of NIBL



4.1.3 Bank of Kathmandu Limited (BOKL)

4.1.3.1 Data

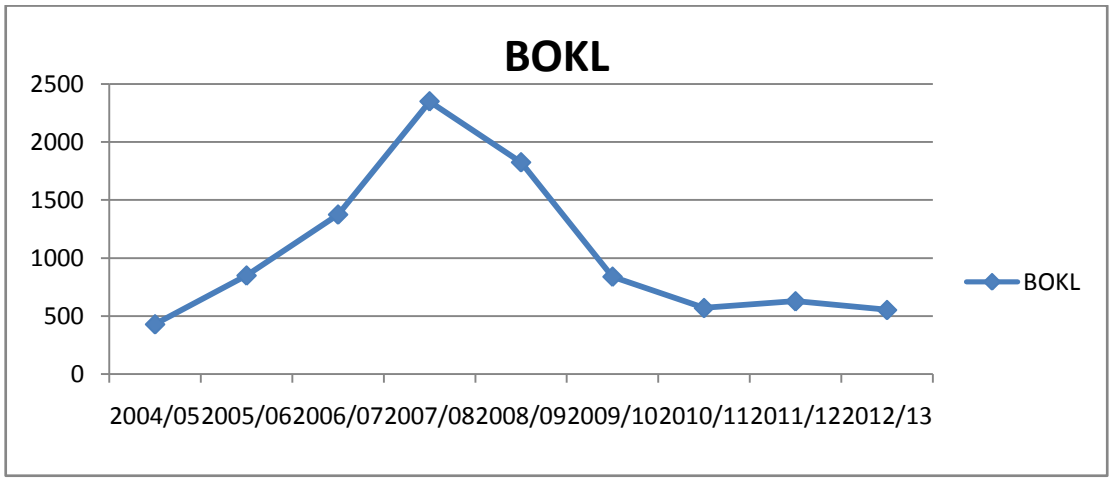
Market price, divided records of common stock of BOKL are shown in Table 4.5, year-end price is shown in the Figure 4.5. Price is maximum (Rs.2350) in year 2007/2008 reached at its lowest Rs.430 in year 2004/2005. Similarly closing price are Rs 430, Rs. 850, Rs.1375, Rs.2350, Rs.1825, Rs.840, Rs 570, Rs.628 and Rs.553 in year 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013 respectively. Year end price is shown in figure 4.5. Figure shows that closing price is fluctuating trend. The price was increasing trend 2004/05 to 2007/08 and decrease in F.Y 2008/09 to 2010/11 and again increasing slowly trend in 2011 to 2013. Annual dividend amount was in fluctuating trend. It shows in table 4.5.

Table4.5 Mps and Dividend Data of BOKL

F.Y	High MPS	Low MPS	Closing MPS	%of Share Bonus	Cash Dividend (Rs.)	Total Dividend
2004/05	472	280	430	-	15	15
2005/06	881	422	850	20	18	293
2006/07	1375	691	1375	-	20	20
2007/08	2361	1200	2350	40	2	732
2008/09	3672	1855	1825	40	8	344
2009/10	1841	630	840	15	15	100
2010/11	886	363	570	18	17	130
2011/12	1768	396	628	5	21	49
2012/13	795	500	553	14	1	105

Source: Nepal stock Exchange Trading Report

Figure 4.5: Year-end Price Movement of BOKL



4.1.1.2 Realized Returns (R), S.D (σ),variance (σ^2) and Expected Return(R□)

Year –end price dividend amounts are used to calculate dividend yield and capital gain yield is added to find for each year. Table 4.6 shows the calculation of yearly- realized returns, expected return and standard deviation of returns. Expected return of the common stock of BOKL is 0.3387, and standard deviation of BOKL is 0.6941, variance is 0.4826 and C.V is 2.049

Table 4.6 Realized Rate of Returns, Expected Returns, S.D, C.V of BOKL

F.Y	Closing MPS (RS)	Dividend(Rs.)	R=$\frac{Dt+(Pt-Pt-1)}{Pt-1}$	(R-R□)	(R-R□)^2
2004/05	430	15	-	-	-
2005/06	850	293	1.6581	1.3194	1.7408
2006/07	1375	20	0.6411	0.3024	0.0914
2007/08	2350	732	1.2414	0.9027	0.8149
2008/09	1825	344	-0.077	-0.4157	0.1728
2009/10	840	100	-0.4849	-0.8236	0.6783
2010/11	570	130	-0.1667	-0.5054	0.2554
2011/12	628	49	0.1877	-0.1510	0.0228
2012/13	553	105	0.0478	-0.2909	0.0846
Total			∑R= 3.04748		∑(R-R□)^2= 3.861

Source: Nepal Stock Exchange Trading Report

We have,

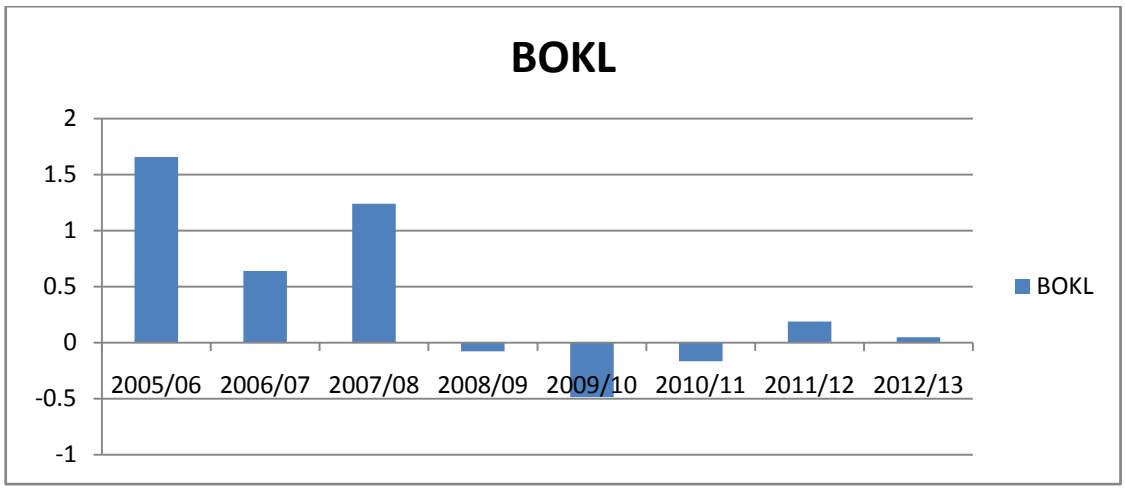
$$\text{Expected rate of return } E(R□) = \frac{\sum R}{n} = \frac{3.0474}{9} = 0.3387 = 33.87\%$$

$$\text{Standard deviation}(\sigma) = \sqrt{\frac{(\sum R - R□)2}{n-1}} = \sqrt{\frac{\mathbf{3.861}}{\mathbf{9-1}}} = 0.6941 = 69.41\%$$

$$\text{Variance } (\sigma 2) = \frac{(\sum R - R□\ 2)}{n-1} = \frac{3.861}{9-1} = 0.4826$$

$$\text{C.V} = \frac{\sigma}{R□} = \frac{0.6941}{0.3387} = 2.049$$

Figure 4.6: Annual Return of Common Stock of BOK



4.1.4 Himalayan Bank Limited (HBL)

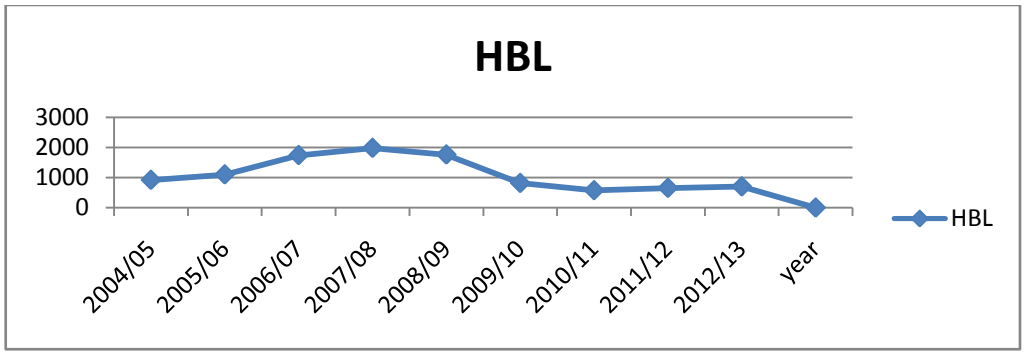
4.1.4.1 Data

Table 4.7: MPS and Dividend Data of HBL

F.Y	High MPS	Low MPS	Closing MPS	%of Share Bonus	Cash Dividend (Rs.)	Total Dividend
2004/05	1181	855	920	19.58	12	227
2005/06	1200	900	1100	5	30	117
2006/07	1760	950	1740	25	15	312
2007/08	2856	1340	1980	20	25	377
2008/09	2730	1119	1760	31.56	12	270
2009/10	1780	676	816	25	12	156
2010/11	855	380	575	20	17	148
2011/12	850	438	653	15	14	119
2012/13	923	620	700	5	10	57

Source : Nepal Stock Exchange Trading Report

Figure 4.7 : Year-end Price Movement of HBL



Market price, divided records of common stock of HBL are shown in Table 4.7, year-end price is shown in the Figure 4.7. Price is maximum (Rs.1980) in year 2007/2008 reached at its lowest Rs.575 in year 2010/2011. Similarly closing price are Rs 920, Rs. 1100, Rs.1740, Rs.1980, Rs.1760, Rs.816, Rs 575, Rs.653 and Rs.700 in year 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013 respectively. Year end price is shown in figure 4.7. Figure shows that closing price is fluctuating trend. The price was increasing trend 2004/05 to 2007/08 and decrease in F.Y 2008/09 to 2010/11 and again increasing slowly trend in 2011 to 2013. Annual dividend amount was in fluctuating trend. It shows in table 4.7.

4.1.4.2 Realized Returns (R), S. D (σ), variance (σ^2) and Expected Return($\bar{R}$)

Year –end price dividend amounts are used to calculate dividend yield and capital gain yield is added to find for each year. Table 4.8 shows the calculation of yearly- realized returns, expected return and standard deviation of returns. Expected return of the common stock of HBL is 0.1675, and standard deviation of HBL is 0.3631, variance is 0.1319 and C.V is 2.1677.

Table 4.8 Realized Rate of Returns, Expected Returns, S.D, C.V of HBL

F.Y	Closing MPS (RS)	Dividend(Rs.)	$R=\frac{Dt+(Pt-Pt-1)}{Pt-1}$	$(R-\bar{R})$	$(R-\bar{R})^2$
2004/05	920	227	-	-	-
2005/06	1100	117	0.3228	0.1553	0.0241
2006/07	1740	312	0.8654	0.6979	0.4871
2007/08	1980	377	0.3545	0.1870	0.0350
2008/09	1760	270	0.02525	-0.1423	0.0202
2009/10	816	156	-0.4478	-0.6153	0.3786
2010/11	575	148	-0.1140	-0.2815	0.0792
2011/12	653	119	0.3426	0.1751	0.0307
2012/13	700	57	0.1593	-0.0082	0.0001
Total			$\sum R$= 1.5080		$\sum(R-\bar{R})^2$= 1.055

Source: Nepal Stock Exchange Trading Report

We have,

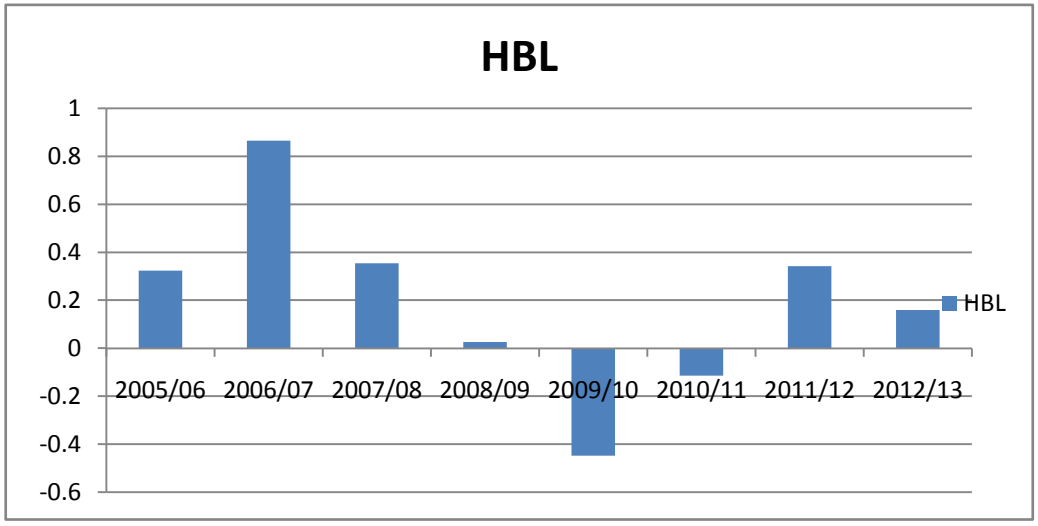
Expected rate of return $E(\bar{R}) = \frac{\sum R}{n} = \frac{1.5080}{9} = 0.1675 =$ 16.75%

Standard deviation$(\sigma) = \sqrt{\frac{(\sum R-\bar{R})2}{n-1}} = \sqrt{\frac{1.055}{9-1}} = 0.3631 =$ 36.31%

Variance $(\sigma^2) = \frac{(\sum R-\bar{R})2}{n-1} = \frac{1.055}{9-1} = 0.1319$

C.V $= \frac{\sigma}{\bar{R}} = \frac{0.3631}{0.1675} = 2.1677$

Figure 4.8: Annual Return of Common Stock of HBL



4.1.5 Standard Chartered Bank Nepal Limited (SCBNL)

4.1.4.1 Data

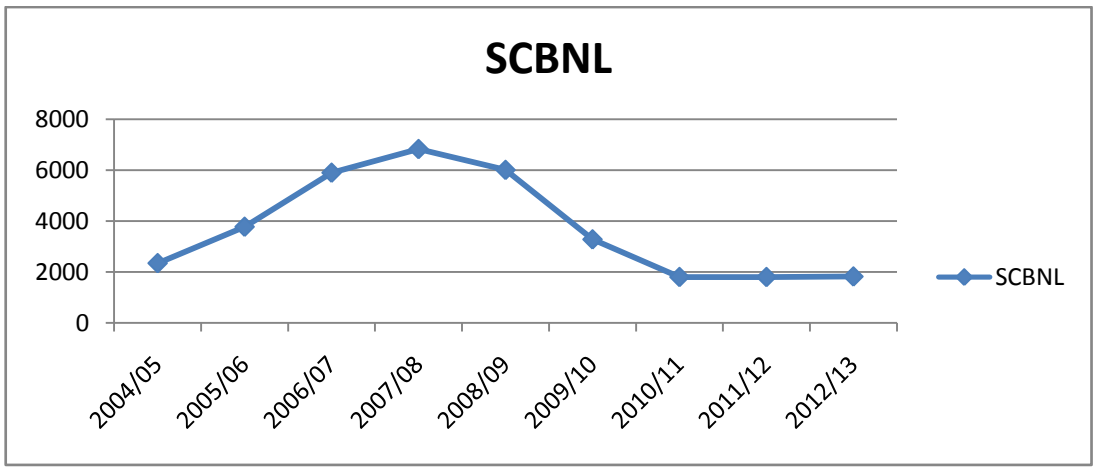
Market price and divided records of common stock of SCBNL are shown in Table 4.9, MPS of SCBL is very high in F.Y 2007/08. Year-end price movement is shown in the Figure 4.9. Price is maximum (Rs.6830) in year 2007/2008 reached at its lowest Rs.1799 in year 2011/2012. Similarly closing price are Rs 2345, Rs. 3775, Rs.5900, Rs.6830, Rs.6010, Rs.3279, Rs 1800, Rs.1799 and Rs.1820 in year 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013 respectively. Year end price is shown in figure 4.9. Figure shows that closing price is fluctuating trend. The price was increasing trend 2004/05 to 2007/08 and decrease in F.Y 2008/09 to 2011/12 and again increasing slowly trend in 2012/2013. Annual dividend amount was in fluctuating trend. It shows in table 4.9.

Table 4.9: MPS and Dividend Data of SCBNL

F.Y	High MPS	Low MPS	Closing MPS	%of Share Bonus	Cash Dividend (Rs.)	Total Dividend
2004/05	2350	1553	2345	-	120	120
2005/06	3775	2200	3775	10	130	720
2006/07	5900	3058	5900	50	80	3495
2007/08	9025	4505	6830	50	80	3085
2008/09	9200	4100	6010	50	50	1690
2009/10	6500	2403	3279	15	55	325
2010/11	3214	1280	1800	-	50	50
2011/12	2279	1290	1799	15	45	318
2012/13	2190	1677	1820	10	40	260

Source : Nepal Stock Exchange Trading Report

Figure 4.9: Year-end Price Movement of SCBNL



4.1.5.2 Realized Returns (R), Standard Deviation (σ), Expected Return (R□)

Year –end price dividend amounts are used to calculate dividend yield and capital gain yield is added to find for each year. Table 4.10 shows the calculation of yearly- realized returns, expected return and standard deviation of returns. Expected return of the common stock of SCBNL is 0.3011, and standard deviation of SCBNL is 0.6160, variance is 0.3795 and C.V is 2.0458.

Table 4.10 Realized Rate of Returns, Expected Returns, S.D, C.V of SCBNL

F.Y	Closing MPS (RS)	Dividend(Rs.)	$R=\frac{Dt+(Pt-Pt-1)}{Pt-1}$	(R-R□)	(R-R□)^2
2004/05	2345	120	-	-	-
2005/06	3775	720	0.9168	0.6157	0.3791
2006/07	5900	3495	1.489	1.1879	1.4111
2007/08	6830	3085	0.6805	0.3794	0.1439
2008/09	6010	1690	0.1274	-0.1737	0.0302
2009/10	3279	325	-0.4003	-0.7014	0.4920
2010/11	1800	50	-0.4358	-0.7369	0.5430
2011/12	1799	318	0.1761	-0.1250	0.0156
2012/13	1820	260	0.1562	-0.1449	0.0210
Total			∑R= 2.7099		∑(R-R□)^2= 3.0358

Source: Nepal Stock Exchange Trading Report

We have,

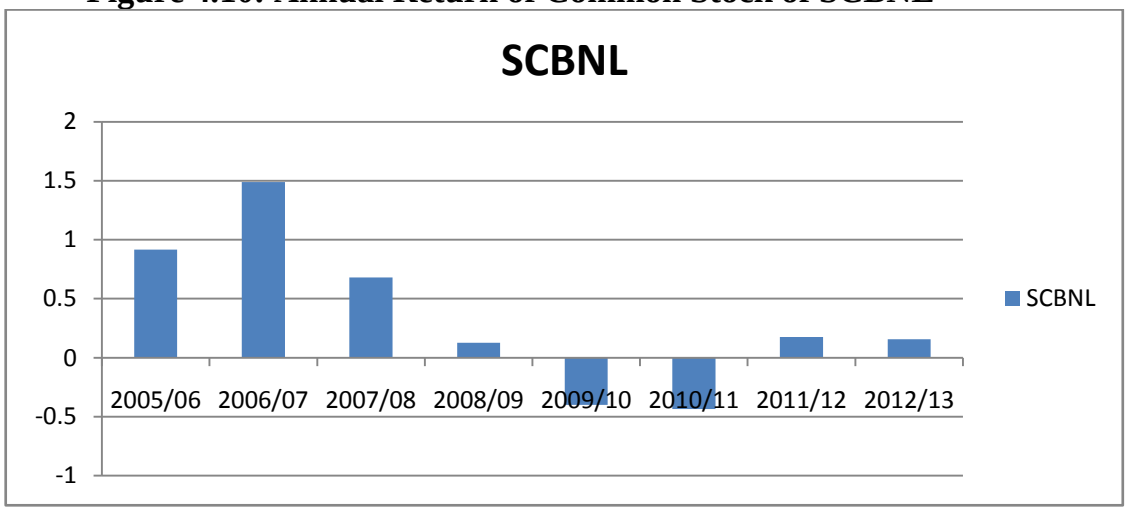
Expected rate of return E (R□)=$\frac{\sum R}{n}$= $\frac{2.7099}{9}$ = 0.3011 = 30.11%

Standard deviation (σ) = $\sqrt{\frac{(\sum R-R□)2}{n-1}}$ = $\sqrt{\frac{3.0358}{9-1}}$ = 0.6160 = 61.60%

Variance (σ2) = $\frac{(\sum R-R□\ 2)}{n-1}$ = $\frac{3.0358}{9-1}$ = 0.3795

C.V = $\frac{\sigma}{R□}$ = $\frac{0.6160}{0.3011}$ = 2.0458

Figure 4.10: Annual Return of Common Stock of SCBNL



4.1.6 Everest Bank Limited (EBL)

4.1.6.1 Data

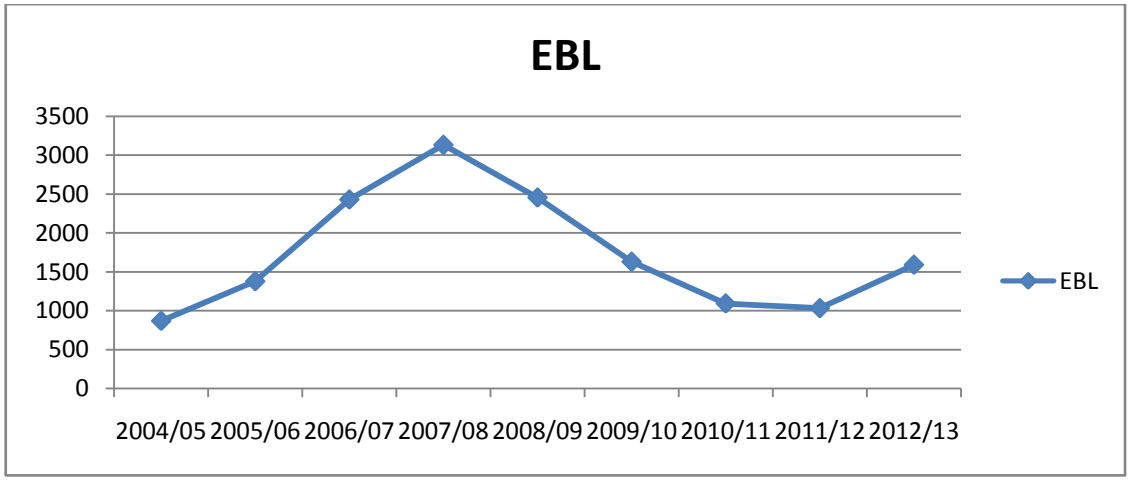
Market price and divided records of common stock of EBL are shown in Table 4.11; MPS of EBL is very high in F.Y 2007/08. Year-end price movement is shown in the Figure 4.11. Price is maximum (Rs.3132) in year 2007/2008 reached at its lowest Rs.870 in year 2004/05. Similarly closing price are Rs 870, Rs. 1379, Rs.2430, Rs.3132, Rs.2455, Rs.1630, Rs 1094, Rs.1033 and Rs.1591 in year 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013 respectively. Year end price is shown in figure 4.11. Figure shows that closing price is fluctuating trend. The price was increasing trend 2004/05 to 2007/08 and decrease in F.Y 2008/09 to 2011/12 and again increasing slowly trend in 2012/2013. Annual dividend amount was in fluctuating trend. It shows in table 4.11.

Table 4.11: MPS and Dividend Data of EBL

F.Y	High MPS	Low MPS	Closing MPS	%of Share Bonus	Cash Dividend (Rs.)	Total Dividend
2004/05	905	625	870	20	-	276
2005/06	1410	800	1379	-	25	25
2006/07	2430	1100	2430	30	10	950
2007/08	3195	1804	3132	30	20	757
2008/09	3672	1855	2455	30	30	519
2009/10	2703	1071	1630	30	30	359
2010/11	1598	781	1094	10	50	154
2011/12	1218	650	1033	30	-	478
2012/13	1729	910	1591	10	50	305

Source: Nepal Stock Exchange Trading Report

Figure4.11: Year-end Price Movement of EBL



4.1.6.2 Realized Returns (R), S.D (σ), variance (σ^2) and Expected Return ($\bar{R}$)

Year –end price dividend amounts are used to calculate dividend yield and capital gain yield is added to find for each year. Table 4.12, shows the calculation of yearly- realized returns, expected return and standard deviation of returns. Expected return of the common stock of EBL is 0.3786, and standard deviation of EBL is 0.5415, variance is 0.2932 and C.V is 1.43026.

Table 4.12 Realized Rate of Returns, Expected Returns, S.D, C.V of EBL

F.Y	Closing MPS (RS)	Dividend(Rs.)	R= $\frac{Dt+(Pt-Pt-1)}{Pt-1}$	(R-$\bar{R}$)	(R-$\bar{R}$)^2
2004/05	870	276	-	-	-
2005/06	1379	25	0.6137	0.2351	0.0553
2006/07	2430	950	1.4510	1.0724	1.15
2007/08	3132	757	0.6004	0.2218	0.0492
2008/09	2455	519	-0.0504	-0.4290	0.1840
2009/10	1630	359	-0.1898	-0.5684	0.3231
2010/11	1094	154	-0.2343	-0.6129	0.3756
2011/12	1033	478	0.3811	0.0025	0.000001
2012/13	1591	305	0.8354	0.4568	0.2087
Total			∑R= 3.4071		∑(R-$\bar{R}$)^2= 2.3459

Source: Nepal Stock Exchange Trading Report

We have,

Expected rate of return E ($\bar{R}$)=$\frac{\sum R}{n}$ = $\frac{3.4071}{9}$ = 0.3786 = 37.86%

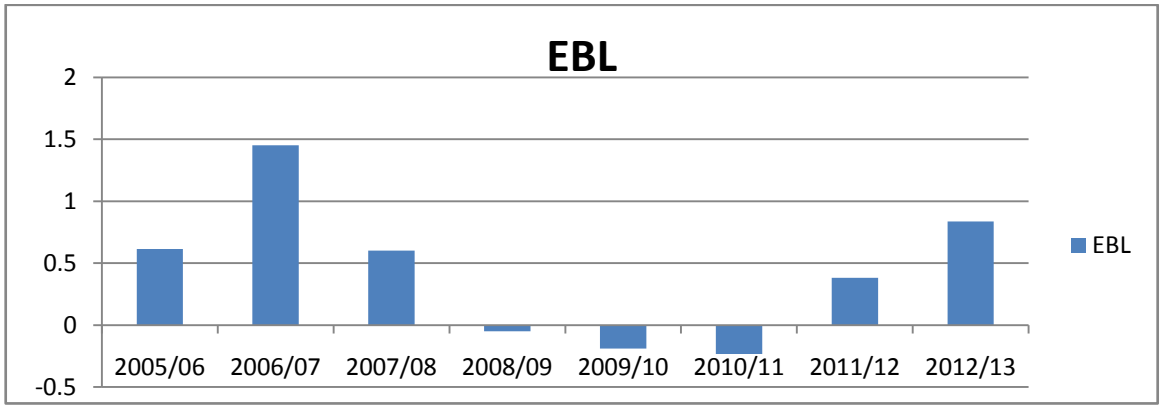
$$\text{Standard deviation } (\sigma) = \sqrt{\frac{(\sum R - R\square)2}{n-1}} = \sqrt{\frac{2.3459}{9-1}} = 0.5415$$

= 54.15%

$$\text{Variance } (\sigma 2) = \frac{(\sum R - R\square)2}{n-1} = \frac{2.3459}{9-1} = 0.2932$$

$$\text{C.V} = \frac{\sigma}{R\square} = \frac{0.5415}{0.3786} = 1.4302$$

Figure 4.12: Annual Return of Common Stock of EBL



4.1.7 Inter Bank Comparison

According to the return from the previous section, a comparative analysis of return and unsystematic risk is performed there. Expected return, standard deviation of returns, coefficient of variation of each bank for the year 2004/005 to 2012/13 is presented in table 4.13.

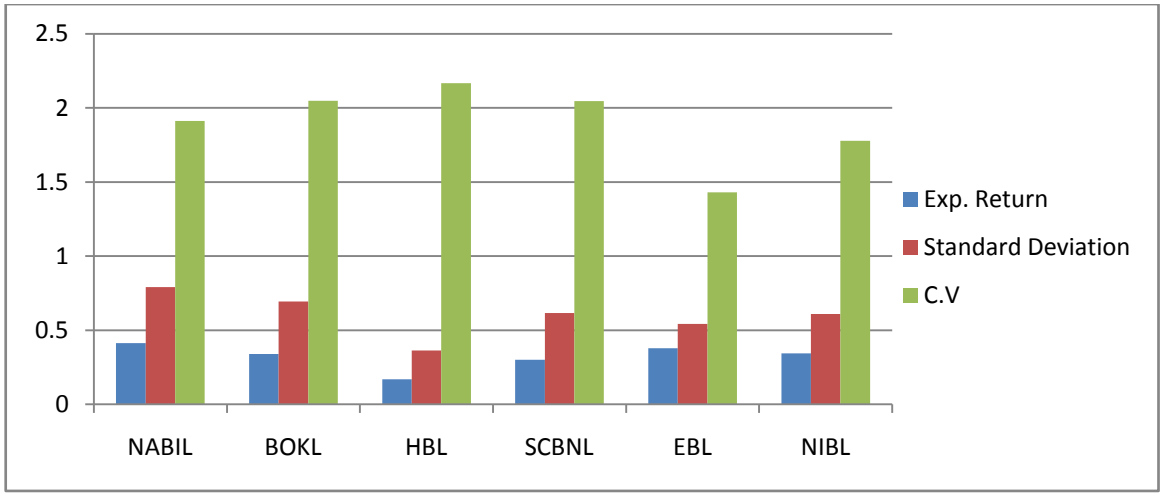
Table 4.13: Expected Return, S.D. and Coefficient of Variation of Each Bank

Bank	Expected Return	Standard Deviation	C.V	Var.	Remarks
NIBL	34.30%	61.03%	1.779	0.3725	Lower return High C.V
NABIL	41.35%	79.08%	1.912	0.6254	Higher return Higher C.V and High Variance
BOKL	33.87%	69.41%	2.049	0.4826	Lower return, Higher C.V
HBL	16.75%	36.31%	2.167	0.1319	Lower return, Higher C.V
SCBNL	30.11%	61.60%	2.045	0.3795	Lower return, Higher C.V
EBL	37.86%	54.15%	1.430	0.2932	Higher return, Less C.V

Investor can get highest return from investment in common stock of NABIL among the six banks and lowest from Himalayan Bank Limited. Everest

Bank has least unsystematic risk but HBL has higher unsystematic risk and lower return among the joint venture bank. To make the comparison easily understandable, diagram No 4.13 is presented below: coefficient of Variation (C.V) is the more appropriate basis of taking decision on the investment in single security because it measure risk per unit return of a stock. So, standard deviation and expected return are included in it. Therefore, an investor should always be careful to invest in a security regarding its C.V. like traffic red light, investor should provide utter care and be alert with C.V. From below figure 4.13 we found that Everest Bank Ltd has the best common stock for investment because of its minimum coefficient of variation. The contradiction of theory may be due to extreme value of return which ultimately affects the mean value of return. Higher the return lower will be C.V provided that other factor remaining same.

Figure 4.13: Expected Return, S.D and C.V of Each Bank



On the basis of market capitalization, this is the total market value at the specific time period of the company, industry and market. The end of year 2012/13, sizes of each bank are presented in table 4.14 and figure 4.14 respectively.

Table 4.14: Market Capitalization of Banks

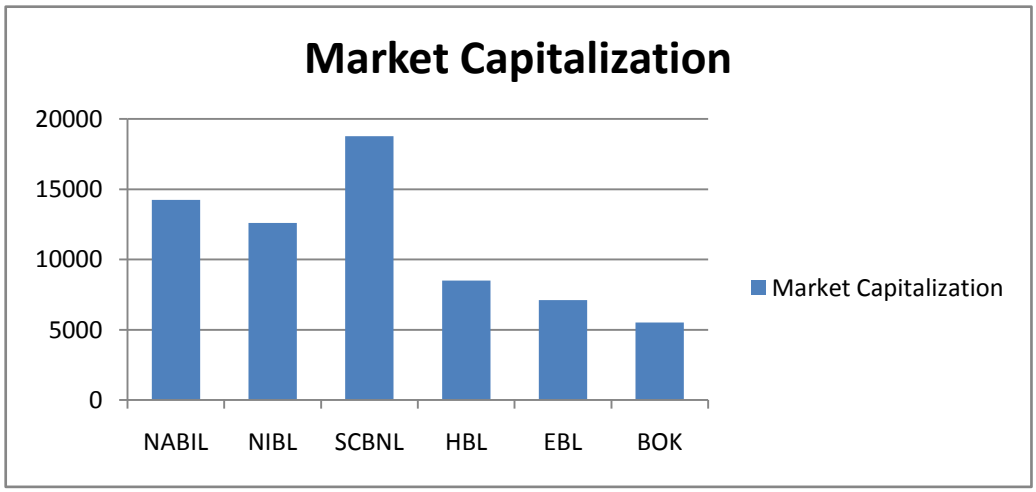
Market Capitalization as on 15th July 2012 (Rs. In Millions)

Banks	Market Capitalization
NIBL	14235.15
NABIL	12600.20
BOKL	18766.12
HBL	8500.44
SCBNL	7110.10
EBL	5502.82
Total	**66714.83**

Source: Nepal Stock Exchange Annual Report

Figure 4.14 Market Capitalization of Selected Banks under study at

15th July 2012/13. (In Millions)



Similarly, a comparison is made on the movement of market capitalization. Here only six joint venture banks are taken into the consideration during the period of 2004/05 to 2012/13. Table no. 4.15 shows the comparative movement of market capitalization of six banks, NIBL, NABIL, BOKL, HBL, SCBNL and EBL.

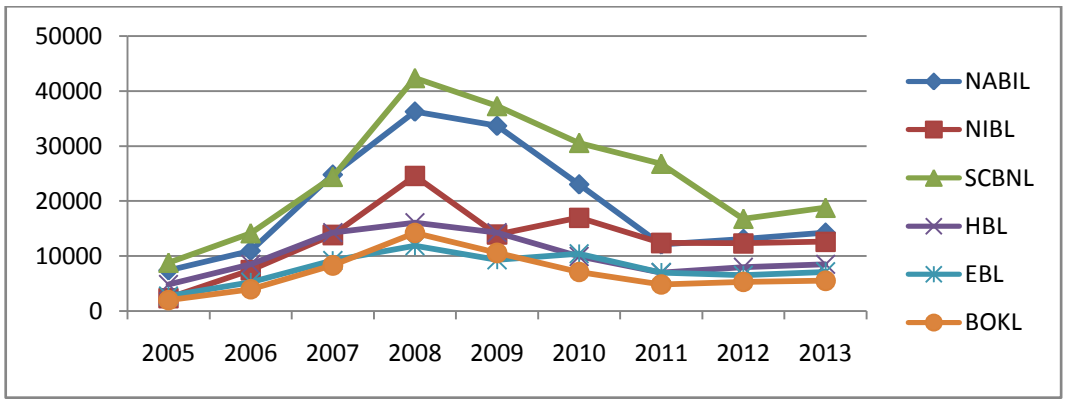
Table 4.15: Year wise Comparative Movement of Market Capitalization

(Rs. In Millions)

Bank	15 July 05	15 July 06	15 July 07	15 July 08	15 July 09	15 July 10	15 July 11	15 July 12	15 July. 13
NABIL	7389.47	10938.29	24795.25	36259.98	33675.38	23023.41	12091.15	13085.8	14235.15
NIBL	2362.34	7441.38	13835.39	24564.57	13916.56	16969.84	12396.4	12300.1	12600.2
SCBNL	8785.32	14141.68	24382.03	42337.95	37254.92	30559.18	26775.40	16766.0	18766.1
HBL	4830.00	8494.20	14270.26	16054.04	14270.26	9924.31	6993.24	7941.88	8500.44
EBL	2740.50	5212.62	9185.40	11838.96	9279.00	10412.77	6988.69	6509.01	7110.10
BOKL	1993.40	3940.44	8293.19	14173.82	10554.97	7092.94	4813.07	5302.82	5502.82

Source : Nepal Stock Exchange Trading Report

Figure 4.15: Year Wise Comparative Movement of Market Capitalization



4.1.8 Inter- Industry Comparison

To compare the size of industries, table 4.16 and figure 4.16 are presented below. We can observe the banking industry has majority value of total market share i.e.60.55 percent. Though the percentage value shown in the figure is in the round value but the 'trading' has covered the lowest market share value i.e. 0.203 percent.

Table 4.16: Market Capitalization of Each Industry at July 15, 2013

Industry	Market Capitalization(Rs. In Millions)	Percent
Commercial Bank	292851.71	60.55
Manufacturing& Processing	15413.45	3.2
Hotel	8691.97	1.79
Other	89418.42	18.49
Trading	985.32	0.203
Insurance	27410.88	5.67
Finance	22293.60	4.609
Development Bank	26540.52	5.488
Total	483605.87	Total = 100%

Source: Nepal Stock Exchange

Figure 4.16: Market Capitalization of Each Industry at 15 July 2013

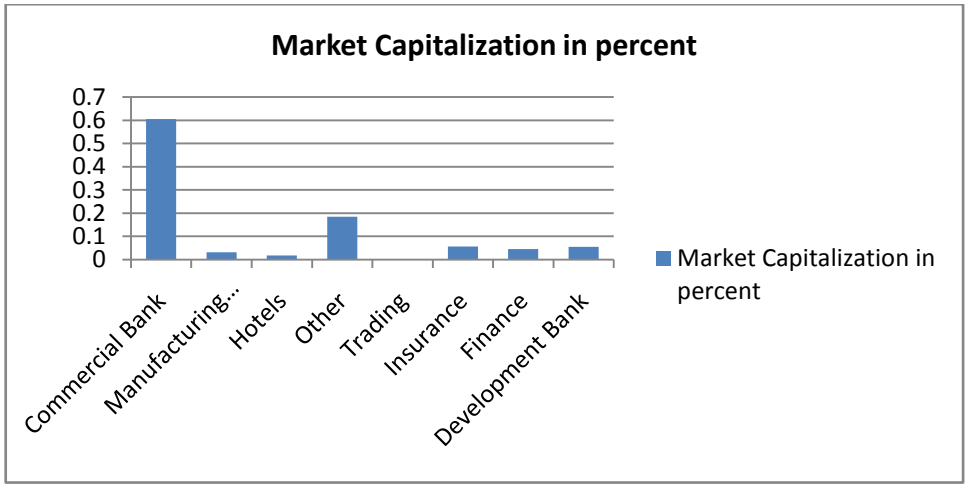


Table 4.17: Industry wise Market Capitalization (Rs. In Millions)

Bank	July06	July 07	July 08	July 09	July 10	July 11	July 12	July 13
Comm. Bank	68841.24	138086.43	218264.19	192611.17	174097.45	119380.05	119433.29	292851.7
Man.& Pro.	4619.20	3760.28	6576.18	5424.58	5491.21	9577.84	10767.20	15413.45
Hotels	2393.61	1935.59	3484.13	3346.41	3521.89	3040.64	3213.71	8669.97
Other	8012.20	16503.02	26128.93	94350	69000	62850	75450	89418.42
Trading	737.39	787.40	686.73	980.70	1599.41	1380.74	1072.04	985.32
Insurance	4852.19	7959.78	10897	8640.23	11285.39	9937.18	11254.32	27410.88
Finance	4930.64	11491.40	27113.59	17342.53	21834.23	13756.06	10117.97	22293.60
Development Bank	1227.49	5980.80	15619.36	16648.39	21458.39	13210.54	12304.82	26540.52

Source : Nepal Stock Exchange Trading Repor

Figure 4.17: Industry wise Movement of Market Capitalization

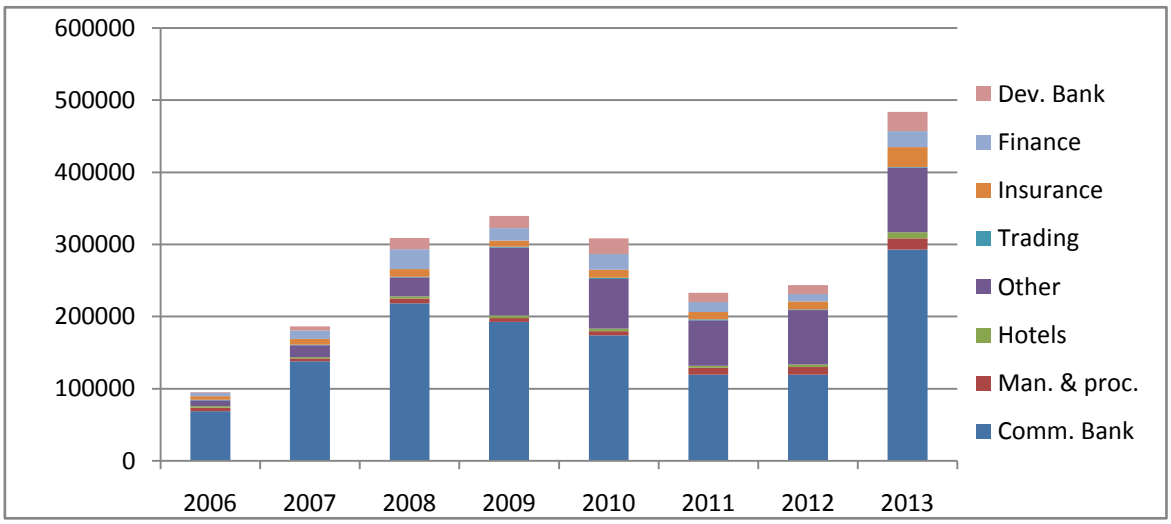


Table 4.18: industry-wise NEPSE Index at Closing Date of F.Y 2004/05 to 2012/13

Year / Industry	Comm. Bank	Man. & Proc.	Hotel	Trading	Finance	Other	Insurance	Dev. Bank	Market
2004/05	304.64	276.50	178	123.20	228.86	347.65	320.24	237.86	222.04
2005/06	437.49	301.11	180.77	148.11	261.37	410.00	381.25	294.40	386.83
2006/07	789.21	348.63	251.47	155.37	471.82	818.12	612.46	539.66	683.95
2007/08	985.65	423.66	370.88	204.08	1152.74	768.26	817.25	1285.89	963.36
2008/09	780.87	434.32	367.42	295.83	697.61	738.99	656.41	772.56	749.10
2009/10	456.93	427.89	400.26	282.08	397.38	540.48	548.52	478.53	477.73
2010/11	328.57	591.52	412.59	241.97	303.78	492.31	407.14	294.15	362.85
2011/12	358.57	666.76	489.04	191.97	267.01	590.98	497.86	245.52	389.74
2012/13	505.48	863.72	652.40	169.36	254.08	700.22	937.14	257.20	518.33

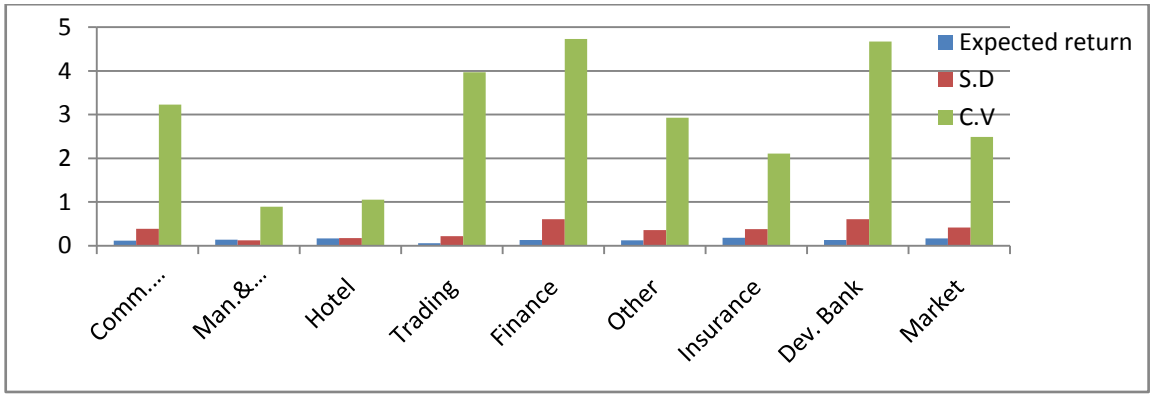
Source: Nepal Stock Exchange Trading Report

Table 4.19: Expected Return, S.D of Return and C.V of Industry

Industry	Expected return	S.D	C.V	Variance	Remark
Comm. Bank	0.1207	0.39	3.2388	0.152	Higher C.V
Man. & Proc.	0.1419	0.1267	0.8928	0.016	Higher return lower C.V
Hotel	0.1679	0.1774	1.056	0.0314	Higher return lower C.V
Trading	0.0557	0.2211	3.97	0.048	Lower return
Finance	0.1289	0.6096	4.729	0.3716	Higher C.V
Other	0.1225	0.3591	2.93	0.1290	Higher C.V
Insurance	0.1797	0.3797	2.11	0.1442	Higher return
Dev. Bank	0.1305	0.6099	4.67	0.3720	Higher C.V
Market	0.1664	0.4159	2.49	0.1730	Higher C.V

Expected rate of return, standard deviation and coefficient of variation are taken as main concern to make comparison between industries. Return of each industry is calculated on the basis of industry wise NESE index. Year – end industry wise NEPSE index is given in table 4.18. Details of calculation of each variable of each industry are shown in Appendix (A-I).

Figure 4.18 : Industry wise Expected Return, S.D and C.V



Expected return of the portfolio of insurance lies on the first position and that hotel sector lies on the second position. The expected return of banking industry is 0.1207 means 12.07%. In comparison with rest industries ‘finance sector ‘possesses higher coefficient of variation.

4.1.9 Comparison with Market

4.1.9.1 Market Risk and Return

There is only stock market in Nepal, know Nepal Stock Exchange shortly NEPSE. Overall market movement of the Country is representing by the NEPSE index. Portfolio market return, its standard deviation and coefficient of variation are shown in table 4.20.

Table 4.20: Calculation of Market Return, S.D and C.V

F.Y	NEPSE INDEX	Rm=$\frac{NIt-NIt-1}{NIt-1}$	(Rm-□ Rm)	(Rm-R□)^2
2004/05	222.04	-	-	-
2005/06	386.83	0.7422	0.5758	0.3315
2006/07	683.95	0.7681	0.6017	0.3620
2007/08	963.36	0.4085	0.2421	0.0586
2008/09	749.10	-0.2224	-0.3888	0.1512
2009/10	477.73	-0.3623	-0.5287	0.2795
2010/11	362.85	-0.2405	-0.4069	0.1656
2011/12	389.74	0.0741	-0.0923	0.0085
2012/13	518.33	0.3299	0.1635	0.0267
Total		∑Rm= 1.4976		∑(R-R□ m)^2= 1.3836

Source : Nepal Stock Exchange Trading Report

We have ,

Expected rate of return E (R□ m) =$\frac{\sum \text{Rm}}{\text{n}}$ = $\frac{1.4976}{9}$ = 0.1664 = 16.64%

Standard deviation of market (σ) = $\sqrt{\frac{(\sum Rm - Rm\,□\,)2}{n-1}}$ = $\sqrt{\frac{1.3836}{9-1}}$ = 0.4159 = 41.59%

Variance of market (σ2) = $\frac{(\sum Rm - Rm\ )2}{n-1}$ = $\frac{1.3836}{9-1}$ = 0.1729

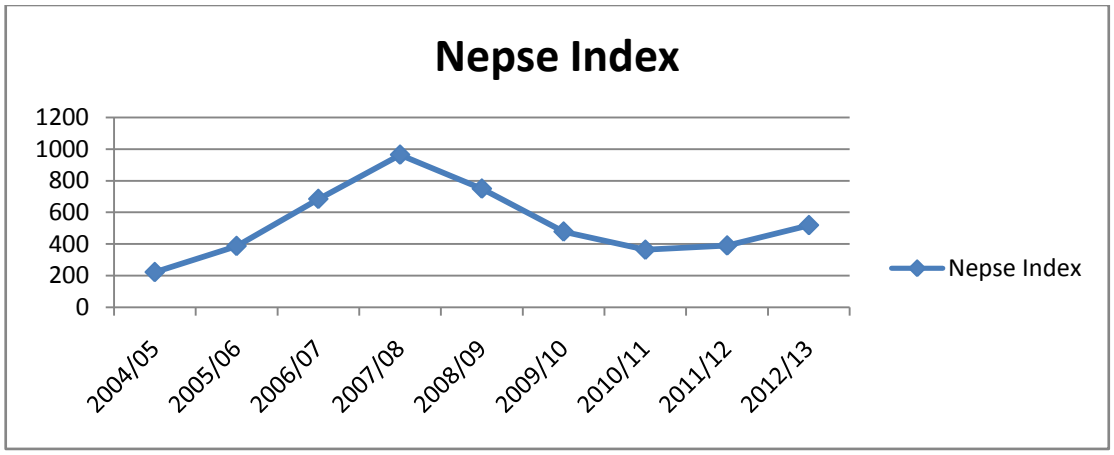
C.V. of market = $\frac{\sigma}{R□}$ = $\frac{0.4159}{0.1664}$ = 2.4992

NEPSE index is very high in the year 2007/2008 and it has decreased little bit in the year 200/09. It is lowest i.e. 222.04 in F.Y 2004/05. The movement of NEPSE index during the observed year i.e. 2004/05 to 2012/13 is shown in the figure 4.18. Market return in F.Y 2007/08 was very high and is very low in F.Y 2004/05.

In comparison with market return ((16.64%), insurance (17.97%), hotel (16.79%) manufacturing& process (14. 19%) and Development Bank (13.05%) have higher return, Remaining industries Commercial Bank (12.07%), finance (12.89%) other industry (12.25%), Trading (5.57%) have lower expected return.

In comparison with market risk (41.59%), Manufacturing & processing (12.67%), other (35.91%), Insurance (37.97%), Commercial Bank (39%), Hotel (17.74%), Trading (22.11%) have lower risk than of market where as Finance (60.96%) and Development Bank (60.99%) have higher risk than Market.

Figure 4.19: NEPSE Index Movement



4.2 Analysis of Market Sensitivity

Beta coefficient explains the market sensitivity. Higher the beta greater the sensitivity and higher will be the reaction to the market movement. Beta measured the systematic risk, which cannot be eliminated by mean of diversification.

Beta coefficient of market is always equal to 1. This statement can be proved as follows:

$$\beta j = \frac{Cov.(Rj,Rm)}{\sigma 2m} \quad \text{or,} \quad \frac{\sigma j \sigma m \rho jm}{\sigma 2m}$$

where,

ρjm = Correlation coefficient between market return and stock return

Hence,

$$\beta m = \frac{Cov.(Rm, Rm)}{\sigma 2m} = 1 \text{ since } \rho mn = 1$$

Hence, Beta coefficient of market is always equal to 1.

Table 4.21: Equilibrium Return Expected Return and Price Evaluation

Banks	Beta(βj)	E(Rj)= Rf+(Rm-Rf)*βj	Expected Return	Price Situation
NIBL	1.39	0.0432+(0.1664-0.043)x1.39= 0.214	0.343	Under price
NABIL	1.54	0.0432+(0.1664-0.043)x1.54= 0.233	0.413	Under price
BOKL	1.34	0.0432+(0.1664-0.043)x1.34= 0.208	0.338	Under price
HBL	0.74	0.0432+(0.1664-0.043)x1.74= 0.133	0.167	Under price
SCBNL	1.36	0.0432+(0.1664-0.043)x1.36= 0.211	0.301	Under price
EBL	1.17	0.0432+(0.1664-0.043)x1.17= 0.187	0.3786	Under price

"if Required Rate of Return is less than Expected return the price of Stock is under price and Vice-Versa."

Where,

Rf = Risk free Rate of Return= 0.0432 i.e. 4.32% *= 1

Rm = Market Return = 0.1664 = 16.64% *= 2

E(Rj) = Equilibrium Rate of Return of Capital Assets Pricing Model (CAPM)

*1 = Risk free rate is based on the weight average Treasury bill rate of 364 days (Quarterly Economics Bulletin NRB July 2013)

*2 = Expected Market rate of Return is for the year 2004/05 to 2012/13.

4.2.1 Portfolio Analysis

A portfolio analysis is a combination of different investment assets. The portfolio would be able to reduce unsystematic or diversifiable risk. It is the

random selection of securities that are to be added to a portfolio. It reduces a portfolio's total diversifiable risk to zero. Previous analysis to risk and return is based on the investment in single security. The expected return of portfolio is simply a weighted average of the expected return of the securities comprising that portfolio the weight are equal to the proportion of total fund invested in each security. The sum of weight must be 100%. Analysis has shown that many Nepalese private investors placed their entire wealth in single assets or investment if they construct a portfolio or group of investment in such kind of assets, which are negatively correlated. They can reduce unsystematic risk dramatically with-out losing their return. Therefore, we need to extend our analysis of risk and return to portfolio context.

Here, we are going to analyze the portfolio. The analysis is based on two assets portfolio and tools for analysis are described in the chapter- three, Research Methodology.

Here the portfolio of the common stock of NABIL (let's suppose stock A) and Common stock of BOKL (let's suppose B) is analyzed. The following table 4.22 shows the calculation of covariance, correlation and proportion of stock of the return of the given two stocks.

Table 4.22: Cov (RA.RB), Correlation (r_{AB}) and Weight of Stock A (NABIL)and Stock B(BOKL).

Year	$(R_A-R\square_A)$	$(R_A-R\square_B)$	$(R_A-\square R_A)(R_A-R\square_B)$
2004/05	-	-	-
2005/06	0.1314	1.3194	0.1734
2006/07	1.8275	0.3024	0.5526
2007/08	0.0310	0.9027	0.0280
2008/09	-0.2522	-0.4157	0.1048
2009/10	-0.8186	-0.8236	0.6742
2010/11	-0.8757	-0.5054	0.4426
2011/12	-0.0094	-0.1510	0.0014
2012/12	0.3798	-0.2909	-0.1105
Total			$(R_A-R\square_A)(R_A-R\square_B)$= 1.8665

We have,

$$\text{Cov}(R_A,R_B)=\frac{(RA-R\square A)(RA-R\square B)=}{n-1} \quad =\frac{1.8665}{9-1} \quad = 0.2333$$

Variance of NABIL Stock (σ_A^2) = 0.6254

Variance of BOKL Stock (σ_B^2) = 0.4826

The proportion of stock A and Stock B, Which minimizes the risk in the portfolio

$$W_A = \frac{\sigma 2B - Cov\ (RA,RB)}{\sigma 2A + \sigma 2B - 2Cov\,(RA,RB)}$$

$$= \frac{0.4826 - 0.2333}{0.6254 + 0.4826 - 2\ x\ 0.2333} = \frac{0.2493}{1.1080 - 0.4666} = 0.3887$$

$W_B = 1 - W_A = 1 - 0.3887 = 0.6113$

Where,

(σ_A^2)= Variance of NABIL Stock W_A= Weight of stock NABIL
(σ_B^2)= Variance of BOKL Stock W_B= Weight of stock BOKL

Cov (R_A,R_B)= Equivalent representation of covariance of covariance of returns between stock of NABIL and BOKL.

Portfolio Return (R_P)= $W_A x R_A + W_B x R_B$

= 0.3887*0.4135+0.6113*0.3387

= 0.3678

Portfolio Risk (σp)= $\sqrt{WA2\ x\ \sigma A2 + WB2\ x\ \sigma B2 + 2WAWB\,x\ CovAB}$

$$= \sqrt{(0.3887)20.6254 + (0.6113)2\ x\ 0.4826 + 2\ x\ 0.3887\ x\ 0.6113\ x\ 0.2333}$$

σp= 0.6210

Correlation between NABIL and BOKL

$$(r_{AB}) = \frac{COV\ RA.RB}{\sigma A.\sigma B} = \frac{0.2333}{0.4345} = 0.5369$$

Since W_A= 0.3887, and W_B = 0.6113, this result indicates that if the investment wanted to minimize risk, he /she would to invest 38.87% of his/ her capital in Stock A i.e. Common Stock of NABIL and higher Part 61.13% in Stock B. i.e. Common Stock of BOKL.

The correlation between the return of the two securities plays a significant role in the risk reduction by portfolio construction. If the correlation is perfectly positive or 1 then the portfolio cannot reduce any level of risk. And

if the correlation is perfectly negative or -1, then the proper combination of the two securities can reduce unsystematic risk even up to zero. It means the positive correlation between securities is not so beneficial and vice-versa. Here, in case of portfolio of NABIL's stock and BOKL's common stock, the correlation is positive correlation that's why the portfolio construction between these two stocks is not beneficial.

Again, the portfolio of the common stock of NIBL (let's suppose stock A) and Common stock of EBL (let's suppose B) is analyzed. The following table 2.23 shows the calculation of covariance, correlation and proportion of stock of the return of the given two stocks.

Table 4.23: Cov ($R_A.R_B$), Correlation (r_{AE}) and Weight of Stock A (NIBL)and Stock B(EBL).

Year	$(R_A-R\square_A)$	$(R_B-R\square_B)$	$(R_A-R\square_A)(R_B-R\square_B)$
2004/05	-	-	-
2005/06	0.9995	0.2351	0.2350
2006/07	0.5189	1.0724	0.8946
2007/08	0.3458	0.2218	0.0767
2008/09	-0.7683	-0.4290	0.3296
2009/10	-0.8170	-0.5684	0.4644
2010/11	-0.3954	-0.6129	0.2423
2011/12	0.0395	0.0025	0.0001
2012/12	0.4202	0.4568	0.1919
Total			$\sum(R_A-R\square_A)(R_B-R\square_B)$= 2.4346

We have,

Cov (R_A,R_B)= $\frac{(RA-R\tilde{}A)(RB-R\tilde{}B)}{n-1}$ = $\frac{2.4346}{9-1}$ = 0.3043

Variance of NIBL Stock (σ_A^2) = 0.3725

Variance of EBL Stock (σ_B^2) = 0.2932

The proportion of stock A and Stock B, Which minimizes the risk in the portfolio

WA= $\frac{\sigma 2B-Cov\ (RA,RB)}{\sigma 2A+\sigma 2B-2Cov(RA,RB)}$

$$= \frac{0.2932-0.3043}{0.3725+0.2932-2*0.3043} = \frac{-0.0111}{0.6657-0.6086} = -0.1944$$

W_B= 1- W_A = 1-(-0.1994) = 1.1944

Where,

(σ_A^2)= Variance of NIBL Stock W_A= Weight of stock NIBL

(σ_B^2)= Variance of EBL Stock W_B= Weight of stock EBL

Cov (R_A,R_B)= Equivalent representation of covariance of covariance of returns between stock of NIBL and EBL.

Portfolio Return (R_P) = W_A x R_A+W_B x R_B

= -0.1944*0.3430+1.1944*0.3786

= 0.3853

Portfolio Risk (σ_P)= $\sqrt{WA2 \text{ x } \sigma A2 + WB2 \text{ x } \sigma B2 + 2WAWB \text{ x } CovAB}$

=
$$\sqrt{(-0.1944)2 \text{ x } 0.3725 + (1.1944)2 \text{ x } 0.2932 + 2 \text{ x } - 0.1944 \text{ x } 1.1944 \text{ x } 0.3043}$$

σp= 0.5395

Correlation between NIBL and EBL

(r_{AB}) = $\frac{COV\ RA.RB}{\sigma A.\sigma B}$ = $\frac{0.3043}{0.6103*0.5415}$ = 0.9207

Since W_A= -0.1944, and W_B = 1.1944, this result indicates that if the investment wanted to minimize risk, he /she would to invest 119.44% of his/ her capital in Stock B i.e. Common Stock of EBL and the 19.44% disinvestment in stock A i.e. common stock of NIBL.

The correlation between the return of the two securities plays a significant role in the risk reduction by portfolio construction. If the correlation is perfectly positive or 1 then the portfolio cannot reduce any level of risk. And

if the correlation is perfectly negative or -1, then the proper combination of the two securities can reduce unsystematic risk even up to zero. It means the positive correlation between securities is not so beneficial and vice-versa. Here, in case of portfolio of NIBLL's stock and EBL's common stock, the correlation is positive correlation that's why the portfolio construction between these two stocks is not beneficial.

Again, the portfolio of the common stock of SCBNL (let's suppose stock A) and Common stock of EBL (let's suppose B) is analyzed. The following table 2.24 shows the calculation of covariance, correlation and proportion of stock of the return of the given two stocks.

Table 4.24: Cov ($R_A.R_B$), Correlation (r_{AB}) and Weight of Stock A (SCBNL)and Stock B(EBL).

Year	(R_A-R□$_A$)	(R_B-R□$_B$)	(R_A-R□$_A$)(R_B-R□$_B$)
2004/05	-	-	-
2005/06	0.6157	0.2351	0.1447
2006/07	1.1879	1.0724	1.2739
2007/08	0.3794	0.2218	0.0841
2008/09	-0.1737	-0.4290	0.07451
2009/10	-0.7014	-0.5684	0.3986
2010/11	-0.7369	-0.6129	0.4516
2011/12	-0.1250	0.0025	-0.00031
2012/12	-0.1449	0.4568	-0.06619
Total			∑(R_A-R□$_A$)(R_B-R□$_B$)=2.3609

We have,

Cov (R_A,R_B)= $\frac{(RA-R\square A)(RB-R\square B)}{n-1}$ = $\frac{2.3609}{9-1}$ = 0.2951

Variance of SCBNL Stock (σ_A^2)= 0.3795

Variance of EBL Stock (σ_B^2)= 0.2932

The proportion of stock A and Stock B, Which minimizes the risk in the portfolio

WA= $\frac{\sigma B2-Cov\ (RA,RB)}{\sigma A2+\sigma B2-2Cov(RA,RB)}$

= $\frac{0.2932-0.2951}{0.3795+0.2932-2*0.2951}$ = $\frac{-0.0019}{0.6727-0.5902}$ = -0.0230

WB= 1- WA = 1-(-0.0230) = 1.023

Where,

(σ_A^2)= Variance of SCBNL Stock W_A= Weight of stock SCBNL

(σ_B^2)= Variance of EBL Stock W_B= Weight of stock EBL

Cov (R_A,R_B)= Equivalent representation of covariance of covariance of returns between stock of SCBNL and EBL.

Portfolio Return(R_P)= W_A x R_A+W_B x R_B

= -0.0230 x 0.3011+1.0230 x 0.3786

= 0.3803

Portfolio Risk (σp)= $\sqrt{WA2 \text{ x } \sigma A2 + WB2 \text{ x } \sigma B2 + 2WAWB \text{x } CovAB}$

=

$$\sqrt{(-0.0230)2 \text{ x } 0.3795 + (1.0230)2 \text{ x } 0.2932 + 2 \text{ x} - 0.0230 \text{ x } 1.0230 \text{ x } 0.2951}$$

σp= 0.5411

Correlation between SCBNL and EBL

(rAB) $= \frac{COV\ RA.RB}{\sigma A.\sigma B} = \frac{0.2951}{0.6160 * 0.5415} = 0.8847$

Since W_A= -0.0230, and W_B = 1.0230, this result indicates that if the investment wanted to minimize risk, he /she would to invest 102.30% of his/ her capital in Stock B i.e. Common Stock of EBL and the 2.30% disinvestment in stock A i.e. common stock of SCBNL.

The correlation between the return of the two securities plays a significant role in the risk reduction by portfolio construction. If the correlation is perfectly positive or 1 then the portfolio cannot reduce any level of risk. And if the correlation is perfectly negative or -1, then the proper combination of the two securities can reduce unsystematic risk even up to zero. It means the positive correlation between securities is not so beneficial and vice-versa. Here, in case of portfolio of SCBNL's stock and EBL's common stock, the

correlation is positive correlation that's why the portfolio construction between these two stocks is not beneficial.

Again, the portfolio of the common stock of BOKL (let's suppose stock A) and Common stock of HBL (let's suppose B) is analyzed. The following table 2.25 shows the calculation of covariance, correlation and proportion of stock of the return of the given two stocks.

Table 4.25: Cov (R_A.R_B), Correlation (r_{AB}) and Weight of Stock A (BOKL)and Stock B(HBL).

Year	(R_A-R□$_A$)	(R_B-R□$_B$)	(R_A-R□$_A$) (R_B-R□$_B$)
2004/05	-	-	-
2005/06	1.3194	0.1553	0.2049
2006/07	0.3024	0.6979	0.2110
2007/08	0.9027	0.1870	0.1688
2008/09	-0.4157	-0.1423	0.0591
2009/10	-0.8236	-0.6153	0.5067
2010/11	-0.5054	-0.2815	0.1422
2011/12	-0.1510	0.1751	-0.0264
2012/12	-0.2909	-0.0082	0.00238
Total			∑(R_A-R□$_A$) (R_B-R□$_B$)=1.2687

We have,

$$\text{Cov}(R_A,R_B)=\frac{\sum(RA-R\square A)\,(RB-R\square B)}{n-1}=\frac{1.2687}{9-1}=0.1586$$

Variance of BOKL Stock (σ_A^2)= 0.4826

Variance of HBL Stock (σ_B^2)= 0.1319

The proportion of stock A and Stock B, Which minimizes the risk in the portfolio

$$W_A=\frac{\sigma B2-Cov\ (RA,RB)}{\sigma A2+\sigma B2-2Cov(RA,RB)}$$

$$=\frac{0.1319-0.1586}{0.4826+0.1319-2\text{ x }0.1586}=\frac{-0.0267}{0.6145-0.3172}=\text{-0.0898}$$

W_B= 1- W_A = 1-(-0.0898) = 1.0898

Where,

(σ_A^2)= (Variance of BOKL Stock W_A= Weight of stock BOKL

(σ_B^2)= B2)= Variance of HBL Stock W_B= Weight of stock HBL

Cov (R_A,R_B)= Equivalent representation of covariance of covariance of returns between stock of BOKL and HBL.

Portfolio Return(R_P)= W_A x R_A+W_B x R_B

= -0.0898 x 0.3387+1.089 x 0.1675

= 0.1521

Portfolio Risk (σp)= $\sqrt{\text{WA2 x } \sigma\text{A2} + \text{WB2 x } \sigma\text{B2} + 2\text{WAWB x CovAB}}$

=

$$\sqrt{(-0.0898)2 \text{ x } 0.4826 + (1.0898)2 \text{ x } 0.1319 + 2 \text{ x} - 0.0898 \text{ x } 1.0898 \text{ x } 0.1586}$$

σp= 0.361

Correlation between BOKL and HBL

(r_{AB}) = $\frac{COV\ RA.RB}{\sigma A.\sigma B}$ = $\frac{0.1586}{0.6947*0.3631}$ = 0.6288

Since W_A= -0.0898, and W_B = 1.0898, this result indicates that if the investment wanted to minimize risk, he /she would to invest 108.98% of his/ her capital in Stock B i.e. Common Stock of EBL and the 8.98% disinvestment in stock A i.e. common stock of HBL.

The correlation between the return of the two securities plays a significant role in the risk reduction by portfolio construction. If the correlation is perfectly positive or 1 then the portfolio cannot reduce any level of risk. And if the correlation is perfectly negative or -1, then the proper combination of the two securities can reduce unsystematic risk even up to zero. It means the positive correlation between securities is not so beneficial and vice-versa. Here, in case of portfolio of BOKL's stock and HBL's common stock, the correlation is positive correlation that's why the portfolio construction between these two stocks is not beneficial.

Major Findings of the Study

Details of data, its presentation and analysis reveal that standard deviation of NABIL is 79.08% which is highest of all the banks selected for study. Standard deviation of BOKL, SCBNL, NIBL, EBL and HBL are 69.47%, 61.60%, 61.03%, 54.15% and 36.31% respectively. Depending upon this parameter i.e. S.D, HBL stock said to be relatively less risky, on the other hand, expected return of NABIL is 41.35% indicating its highest position in return and NIBL, SCBNL, BOKL, HBL, and EBL have 34.30%, 30.11%, 33.87%, 16.75%, and 37.86% respectively In terms of expected return. Thus, both the parameters differ as to which stock to choose as per S.D. investors must choose HBL (as it has lowest S.D.) while as per expected return, investors must choose NABIL. To remove this difficulty regarding the choice of individual stocks, we can use other relative measure of risk i.e. coefficient of variance (C.V.). Stock of EBL, which has its C.V. least all i.e.1.43026, is the best investment alternative as it has least risk per unit of expected return. CVs for other five Banks HBL, BOKL, SCBNL, NABIL and NIBL are 2.1677, 2.049, 2.0458, 1.9125 and 1.7793 respectively.

Market Capitalization of the selected banks in 2013 i.e. NABIL, NIBL, SCBNL, HBL, EBL, and BOKL are Rs.14235.15, Rs.12600.20, Rs.18766.12, Rs.8500.44, Rs.7110.10 and 5502.82 (Rs. In Million) respectively. SCBNL is in its highest position regarding the market capitalization and then NABIL followed by NIBL, HBL, EBL, and BOKL. Out of the total market capitalization of various industries commercial Banking sector covers most of the share i.e. 60.55%. Analysis and interpretation as to the industry wise NEPSE index shows that Insurance sectors have higher return than all other. Standard deviation in its middle position for this sector. Commercial banking sector has 12.07% return and 39% standard deviation. It's little less than market return because the price of sock decline due to global economic recession in 2008/09 to 2010/11.

Over the market risk and return can be accessed through over all NEPSE index. NEPSE index is very high in the year 2007/08 and it's has decreased

in 2008/09 to 2011/12 and again increasing trend to till now. NEPSE index is lowest in 2004/2005. In comparison with market risk(41.59%), Commercial Banking has 39%, Manufacturing & processing 12.67%, Hotel(17.74%), Trading (22.11%), Other sector (35.91%), Insurance (37.97%) have lower risk than that of market risk, where as Finance sector (60.96%) and Development Bank (60.99%) have higher standard deviation. Beta coefficient, which is sometimes called correct measure of risk, shows the stock return sensitively relative to market. Beta coefficient of NIBL, NABIL, EBL, BOKL,HBL and SCBNL are 1.39, 1.54, 1.174, 1.347, 0.7463, 1.364 respectively and are greater than 1, which indicates that return of stocks of NIBL, NABIL, EBL, BOKL, SCBNL are more volatile than that of market. For example, every 1 % change in market return leads to 1.39% change in NIBL stocks return. Most of all of banks have positive beta showing positive relationship with market return.

CAPM shows how required rate of return on any stock is determined. According to this model, return on any stock equals risk free rate plus excess of market return over risk free rate weighted by its beta. Systematic risk reflected in its beta is only the risk, which is priced at market. Comparison between the required rate and expected return gives idea, if given stock is over or underpriced. Most of the stocks of this sector are under priced. According to general rules regarding buy and sell, under priced stocks are suggested to buy. Here, all the joint venture banks, under study are under-priced. So, all the banks are having stock with a good investment opportunity. Their stocks value will be increased in the near future providing the investor higher return. But other dimensions of analysis are also essential for efficient decision- making. It is notable that all the stocks under study are underpriced. Stocks of NIBL, NABIL, BOKL, SCBNL and EBL are said to be aggressive stock for being their betas greater than 1, while HBL's stock is defensive as its beta less than 1. When aggressive stock is added to a market portfolio, it increases the risk but opposite type of effect has of the stock having beta less than 1.

Investing in a single asset is riskier job. If investor constructs a portfolio i.e. group of investment, he/she can reduce dramatically without losing considerable return. Therefore, brief analysis of risk and return is extended to portfolio context.

The expected return of a portfolio is simply a weighted average of the expected returns of the securities comprising that portfolio. The weights are equal to the proportions of the total funds invested in each security. While the portfolio expected return is a straightforward weighted average of returns on the individual securities. The portfolio standard deviation is not the weighted average of individual security's standard deviation. Proper selection and combination of stocks from this sector to from portfolio will be very useful. Portfolio risks made up of stocks of BOKL and HBL were 36% while it is 69.47% and 36.31% respectively if held individually. To what extent various joint venture banks stock are useful to form a portfolio is determine by the associated co- movement of returns of the stock and measured by their correlation coefficient. Correlation coefficient of NABIL and BOKL is 0.5369, NIBL and EBL is 0.9207, SCBNL and EBL 0.8847 and BOKL and HBL is 0.6288. Portfolio risk made up of stocks NABIL and BOKL is 62.10%NIBL and EBL is 53.95%, SCBNL and EBL is 54.11% and BOKL and HBL is 36%. Portfolio made up of stock BOKL and HBL will be more useful than the portfolio made up of stocks NABIL and BOKL, NIBL and EBL & SCBNL and EBL. Likewise, portfolio made from combining BOKL and HBL do little toward reduction of the risk of individual stock as it has moderately positive correlation.

CHAPTER- V

SUMMARY CONCLUSION AND RECOMMENDATION

5.1 Summary

The study taken six joint venture banks, which are listed in NEPSE. An analysis of the risks and return in common stock of these banks are made in this study.

Trade off between risk and return is the central focus of finance. And its major part stock market has greatest glamour, not only for the professionals or institutional investors but for the individual or private as well. Risk and return, a new and complex concept is also foundation of modern investment. Here, risk is defined as the variability of the return of a period. The greater the variability of the returns, the riskier the investment whereas an investment involves the sacrifice of current rupees for future rupees or reward, that future rupees or reward is called return. It includes both current income and capital gains or losses that arise due to the increase or decrease on price of the security.

Stock market investment is main focus of the study. Stock market investment can be both rewarding and fun so long as sufficient tune is given to appreciate its many facts and characteristics.

The relationship between risk and return described by investors' perception about risk and their demand for compensation, all the investors will like to invest in non –risky assets. So, risk plays a vital role in the analysis of investment and to reach an investment decision. Higher risk gives bigger premium and the tradeoff between the two assumes a linear relationship between risk and return premium.

Due to the various limitations and constraints, only six joint venture banks viz. Nepal Investment Bank Limited, Nepal Arab Bank Limited, Bank of Kathmandu Limited, Himalayan Bank Limited, Standard Chartered Bank Limited and Everest Bank Limited are taken as sample for the study. Total

population of the study is joint venture banks listed in NEPSE. A brief introduction in chapter- one , review of literature in chapter-two, research methodology in chapter- three, data presentation and analysis in chapter-four have been presented in a very simple and clear way as far as possible.

5.2 Conclusion

Details of data, its presentation and analysis reveal that standard deviation of NABIL is 79.08% which is highest of all the banks selected for study. Standard deviation of BOKL, SCBNL, NIBL, EBL and HBL are 69.47%, 61.60%, 61.03%, 54.15% and 36.31% respectively. Depending upon this parameter i.e. S.D, HBL stock said to be relatively less risky, on the other hand, expected return of NABIL is 41.35% indicating its highest position in return and NIBL, SCBNL, BOKL, HBL, and EBL have 34.30%, 30.11%, 33.87%, 16.75%, and 37.86% respectively In terms of expected return. Thus, both the parameters differ as to which stock to choose as per S.D. investors must choose HBL (as it has lowest S.D.) while as per expected return, investors must choose NABIL. To remove this difficulty regarding the choice of individual stocks, we can use other relative measure of risk i.e. coefficient of variance (C.V.). Stock of EBL, which has its C.V. least all i.e.1.43026, is the best investment alternative as it has least risk per unit of expected return. CVs for other five Banks HBL, BOKL, SCBNL, NABIL and NIBL are 2.1677, 2.049, 2.0458, 1.9125 and 1.7793 respectively.

- Market Capitalization of the selected banks in 2013 i.e. NABIL, NIBL, SCBNL, HBL, EBL, and BOKL are Rs.14235.15, Rs.12600.20, Rs.18766.12, Rs.8500.44, Rs.7110.10 and 5502.82 (Rs. In Million) respectively. SCBNL is in its highest position regarding the market capitalization and then NABIL followed by NIBL, HBL, EBL, and BOKL. Out of the total market capitalization of various industries commercial Banking sector covers most of the share i.e. 60.55%. Analysis and interpretation as to the industry wise NEPSE index shows that an Insurance sector has higher return than all other. Standard deviation in its middle position for this sector. Commercial banking sector has 12.07% return and 39% standard deviation. its little less than market return

because the price of sock decline due to global economic recession in 2008/09 to 2010/11.

- Over the market risk and return can be accessed through over all NEPSE index. NEPSE index is very high in the year 2007/08 and it's has decreased in 2008/09 to 2011/12 and again increasing trend to till now. NEPSE index is lowest in 2004/2005. In comparison with market risk(41.59%), Commercial Banking has 39%, Manufacturing & processing 12.67%, Hotel(17.74%), Trading (22.11%), Other sector (35.91%), Insurance (37.97%) have lower risk than that of market risk, where as Finance sector (60.96%) and Development Bank (60.99%) have higher standard deviation. Beta coefficient, which is sometimes called correct measure of risk shows the stock return sensitively relative to market. Beta coefficient of NIBL, NABIL, EBL, BOKL,HBL and SCBNL are 1.39, 1.54, 1.174, 1.347, 0.7463, 1.364 respectively and are greater than 1, which indicates that return of stocks of NIBL, NABIL, EBL, BOKL, SCBNL are more volatile than that of market. For example, every 1 % change in market return leads to 1.39% change in NIBL stocks return. Most of all of banks have positive beta showing positive relationship with market return.

- CAPM shows how required rate of return on any stock is determined. According to this model, return on any stock equals risk free rate plus excess of market return over risk free rate weighted by its beta. Systematic risk reflected in its beta is only the risk, which is priced at market. Comparison between the required rate and expected return gives idea, if given stock is over or underpriced. Most of the stocks of this sector are under priced. According to general rules regarding buy and sell, under priced stocks are suggested to buy. Here, all the joint venture banks, under study are under-priced. So, all the banks are having stock with a good investment opportunity. Their stocks value will be increased in the near future providing the investor higher return. But other dimensions of analysis are also essential for efficient decision- making. It is notable that

all the stocks under study are underpriced. Stocks of NIBL, NABIL, BOKL, SCBNL and EBL are said to be aggressive stock for being their betas greater than 1, while HBL's stock is defensive as its beta less than 1. When aggressive stock is added to a market portfolio, it increases the risk but opposite type of effect has of the stock having beta less than 1.

- Investing in a single asset is riskier job. If investor constructs a portfolio i.e. group of investment, he/she can reduce dramatically without losing considerable return. Therefore, brief analysis of risk and return is extended to portfolio context.

- The expected return of a portfolio is simply a weighted average of the expected returns of the securities comprising that portfolio. The portfolio standard deviation is not the weighted average of individual security's standard deviation. Proper selection and combination of stocks from this sector to from portfolio will be very useful. Portfolio risks made up of stocks of BOKL and HBL were 36% while it is 69.47% and 36.31% respectively if held individually. To what extent various joint venture banks stock are useful to form a portfolio is determine by the associated co- movement of returns of the stock and measured by their correlation coefficient. Correlation coefficient of NABIL and BOKL is 0.5369, NIBL and EBL is 0.9207, SCBNL and EBL 0.8847 and BOKL and HBL is 0.6288. Portfolio risk made up of stocks NABIL and BOKL is 62.10%NIBL and EBL is 53.95%, SCBNL and EBL is 54.11% and BOKL and HBL is 36%. Portfolio made up of stock BOKL and HBL will be more useful than the portfolio made up of stocks NABIL and BOKL, NIBL and EBL & SCBNL and EBL. Likewise, portfolio made from combining BOKL and HBL do little toward reduction of the risk of individual stock as it has moderately positive correlation.

According to CAPM model, required rate of return is risk free rate plus risk premium in market weighted by its beta. Comparison between RRR and ERR gives the idea whether the stock is over or underpriced. All the stocks

under study are under priced, as their expected returns are higher than required rate of return. Depending upon general rule regarding buy and sell, all the underpriced stocks must be bought.

5.3 Recommendations

This study has focused on individual investors who are going to invest their wealth on banking sector. Moreover, other components of stock market are also considered to some extent. Based on this study, individual investors can invest their wealth on right stocks. On the basis of the analysis and findings of this study, the following recommendations are prescribed. The recommendations are presented number-wise to different aspect of the study, which will be more beneficial and easy to understand and to improve present stock performance by the banks under study.

- Risk and return of banking sector is very different. It is suggested to analyze risk and return sincerely before investing in the sector. It is not always reliable to reach in the decision based on the risk and return. It is highly preferable to use C.V. to reach to ideal investment alternatives. According to C.V. EBL is t the best of all, as it has least C.V i.e. 1.43026.

- Standard deviation gives idea as to total risk. But investor must concern with the systematic risk as measure by the given stock's beta. Systematic risk is only the risk, which is priced at market. Stock of NABIL has systematic risk greater than other while; HBL has its beta least of all. Although there is chance of more return than that of expected, there is also a chance of heavy loss because stock market investment a risky job. So investor must be well aware of this fact and must be able to visualize and analyze the whole things. It is possible to beat the stock market but proper analysis of individual security, industry and overall market is always essential. General knowledge about economic, political and technological trend is advantageous.

- Investors need to diversify their fund to reduce risk. Efficient portfolio depends on market movement. For the portfolio construction investor should select the stocks that have higher return and negative correlation or moderate positive correlation between stocks of different companies and sector. Similar, stocks can diversify risk properly. Investor should follow the following guideline: focus on fundamentals but keep an eye on technical, diversify moderately and periodically review and revise the portfolio. Investor like higher return but risk is inevitable thing attached with return. To reduce risk, portfolio evaluation form time to time is necessary. Managing portfolio construction, select the stocks those have higher return with less or negative correlation. For our purpose, correlation of return of the stocks of HBL and BOKL are least of all and accordingly, are the best of all for portfolio construction.

- Before making an investment decision in stock in stock, assessment of personal risk attitude, needs and requirements will always be helpful. To make several discussions with stockbroker before reaching at the decision on the basis or reliable information rather than rumor and imagination will ultimately favor the investor. Investor should make their investment decisions based on financial parameters of the banks. They not rush over the rumors.

- Conservative equity investors seek to minimize the investment risk as well as the time and effort devoted to portfolio management. Conservative equity investor should bear in mind the following suggestions specially applicable to them:
  - Look for relatively safe opportunities in the primary market.
  - Participate in the schemes of mutual funds.
  - Join a suitable portfolio management scheme.
  - Consult an investment advisor.

- To provide different type of securities at the same place to investors, NEPSE should manage the trading of government securities. It will

increase the opportunities for well diversification of funds to investors and it will also increase the private investor's participation in government securities.

- Nepal Stock Exchange needs to modernize the trading system and effective information channel. It needs to develop different program for private investors. These programs will contribute to increase investor's rationality as well as market efficiency. Currently Nepal Stock Exchange introduce CDS system it helps to fairly trading of stock and easy to trade of listed companies securities. It should need to be implementing all the stock broker office.

- The listed companies should operate their activity smoothly. They should publish their annual report and information timely and correctly which will help to the investors take the investment decision on their common stocks.

- At last, once again, common stock investment is risky. So investors should learn about the operations of the security market, the characteristics or various investment alternatives available to them, the concept of time value of money, the basic models of security evaluation, the approach of fundamental analysis and the tools of technical analysis.

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APPENDIX -A

Realized Ret urn, Standard Deviation, expected return and coefficient of Variance of Commercial Banking Sector.

Year	Year End Price (NEPSE P)	R=$\frac{BI1-BI0}{BI0}$	(R-R□)	(R-R□)^2
2004/05	304.64	-	-	-
2005/06	437.49	0.4360	0.3153	0.09941
2006/07	789.21	0.8039	0.6832	0.4668
2007/08	985.65	0.2490	0.1283	0.0165
2008/09	780.87	-0.2077	-0.3284	0.1078
2009/10	456.93	-0.4148	-0.5355	0.2867
2010/11	328.70	-0.2806	-0.4013	0.1610
2011/12	358.57	0.0908	-0.0299	0.0009
2012/13	505.48	0.4097	0.289	0.0835
Total		ΣR= 1.0863		Σ(R-R□)^2= 1.2226

Source: Nepal Stock Exchange

We have,

Expected Return (R□) =$\frac{\Sigma R}{n}$ = $\frac{1.0863}{9}$ = 0.1207

Standard deviation (σ)= $\sqrt{\frac{\Sigma(R-R□)2}{n-1}}$ = $\sqrt{\frac{1.2226}{9-1}}$ = 0.39

Variance (σ)2 = $\frac{\Sigma(R-R□)2}{n-1}$ = $\frac{1.2226}{9-1}$ = 0.1528

C.V = $\frac{\sigma}{R□}$ = $\frac{0.390}{0.1207}$ = 3.2388

Where,

BI0= Beginning Commercial Banking Sector's Index.

BI1= Ending Commercial Banking Sector's Index.

APPENDIX -B

Realized Ret urn, Standard Deviation, expected return and coefficient of Variance of Manufacturing & Processing Sector.

Year	Year End Price (NEPSE P)	$R=\frac{MI1-MI0}{MI0}$	$(R-\bar{R})$	$(R-\bar{R})^2$
2004/05	276.50	-	-	-
2005/06	301.11	0.0890	-0.0529	0.0028
2006/07	348.63	0.1578	0.0159	0.000252
2007/08	423.66	0.2153	0.0734	0.005387
2008/09	434.32	0.0251	-0.1168	0.0136
2009/10	427.89	-0.0148	-0.1567	0.0246
2010/11	591.52	0.3824	0.2405	0.0578
2011/12	666.76	0.1272	-0.0147	0.0002
2012/13	863.72	0.2954	0.1535	0.0236
Total		$\Sigma R= 1.2774$		$\Sigma(R-\bar{R})^2= 0.1282$

Source: Nepal Stock Exchange

We have,

$$\text{Expected Return } (\bar{R}) = \frac{\Sigma R}{n} = \frac{1.2774}{9} = 0.1419$$

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\Sigma(R-\bar{R})2}{n-1}} = \sqrt{\frac{0.12823}{9-1}} = 0.1267$$

$$\text{Variance } (\sigma)2 = \frac{\Sigma(R-\bar{R})2}{n-1} = \frac{0.12823}{9-1} = 0.01602$$

$$\text{C.V} = \frac{\sigma}{\bar{R}} = \frac{0.1267}{0.1419} = 0.8928$$

Where,

MI0= Beginning Manufacturing & Processing Sector's Index.

BI1= Ending Manufacturing & Processing Sector's Index.

APPENDIX -C

Realized Ret urn, Standard Deviation, expected return and coefficient of Variance of Hotel Sector.

Year	Year End Price (NEPSE P)	R=$\frac{HI1-HI0}{HI0}$	(R-R□)	(R-R□)^2
2004/05	178.0	-	-	-
2005/06	180.77	0.0156	-0.1523	0.0232
2006/07	251.47	0.3911	0.2232	0.0498
2007/08	370.88	0.4749	0.307	0.0942
2008/09	367.42	-0.0093	0.1772	0.0314
2009/10	400.26	0.0893	-0.07852	0.0062
2010/11	412.59	0.0308	-0.1371	0.0188
2011/12	489.04	0.1852	0.0173	0.0003
2012/13	652.40	0.3340	0.1661	0.0276
Total		ΣR= 1.5116		Σ(R-R□)^2= 0.2515

Source: Nepal Stock Exchange

We have,

Expected Return (R□) =$\frac{\Sigma R}{n}$ = $\frac{1.5116}{9}$ = 0.1679

Standard deviation (σ)= $\sqrt{\frac{\Sigma(R-R□)2}{n-1}}$ = $\sqrt{\frac{0.2515}{9-1}}$ = 0.1774

Variance (σ)2 = $\frac{\Sigma(R-R□)2}{n-1}$ = $\frac{0.2515}{9-1}$ = 0.03143

C.V = $\frac{\sigma}{R□}$ = $\frac{0.1774}{0.1679}$ = 1.056

Where,

HI0= Beginning Hotel Sector's Index.

HI1= Ending Hotel Sector's Index.

APPENDIX -D

Realized Ret urn, Standard Deviation, expected return and coefficient of Variance of Trading Sector.

Year	Year End Price (NEPSE P)	R=$\frac{TI1-TI0}{TI0}$	(R-R□)	(R-R□)^2
2004/05	123.20	-	-	-
2005/06	148.11	0.2021	0.1464	0.0214
2006/07	155.37	0.0490	-0.0067	0.00004
2007/08	204.08	0.3125	0.2578	0.06646
2008/09	295.83	0.4495	0.3938	0.15508
2009/10	282.08	-0.04647	-0.1021	0.01042
2010/11	241.97	-0.1421	-0.1978	0.03912
2011/12	191.97	-0.2066	-0.2623	0.0688
2012/13	169.36	-0.1177	-0.1734	0.03007
Total		ΣR= 0.5013		Σ(R-R□)^2= 0.3913

Source: Nepal Stock Exchange

We have,

Expected Return (R□) =$\frac{\Sigma R}{n}$ = $\frac{0.5013}{9}$ = 0.0557

Standard deviation (σ)= $\sqrt{\frac{\Sigma(R-R□)2}{n-1}}$ = $\sqrt{\frac{0.3913}{9-1}}$ = 0.2211

Variance (σ)2 = $\frac{\Sigma(R-R□)2}{n-1}$ = $\frac{0.3913}{9-1}$ = 0.04891

C.V = $\frac{\sigma}{R□}$ = $\frac{0.2211}{0.0557}$ = 3.97

Where,

TI0= Beginning Trading Sector's Index.

TI1= Ending Trading Sector's Index.

APPENDIX -E

Realized Ret urn, Standard Deviation, expected return and coefficient of Variance of Finance Sector.

Year	Year End Price (NEPSE P)	R=$\frac{FI1-FI0}{FI0}$	(R-R□)	(R-R□)^2
2004/05	228.86	-	-	-
2005/06	261.37	0.1420	0.0131	0.00017
2006/07	471.82	0.8051	0.6762	0.4572
2007/08	1152.74	1.4431	1.3142	1.7271
2008/09	697.61	-0.3948	-0.5237	0.2742
2009/10	397.38	-0.4303	-0.5592	0.3127
2010/11	303.78	-0.2356	-0.3645	0.1329
2011/12	267.01	-0.1210	-0.2499	0.06245
2012/13	254.08	-0.0484	-0.0805	0.00648
Total		ΣR= 1.1601		Σ(R-R□)^2= 2.973

Source: Nepal Stock Exchange

We have,

Expected Return (R□) =$\frac{\Sigma R}{n}$ = $\frac{1.1601}{9}$ = 0.1289

Standard deviation (σ)= $\sqrt{\frac{\Sigma(R-R□)2}{n-1}}$ = $\sqrt{\frac{2.973}{9-1}}$ = 0.6096

Variance (σ)2 = $\frac{\Sigma(R-R□)2}{n-1}$ = $\frac{2.973}{9-1}$ = 0.3716

C.V = $\frac{\sigma}{R□}$ = $\frac{0.6096}{0.1289}$ = 4.72

Where,

FI0= Beginning Finance Sector's Index.

FI1= Ending Finance Sector's Index.

APPENDIX -F

Realized Ret urn, Standard Deviation, expected return and coefficient of Variance of Other Sector.

Year	Year End Price (NEPSE P)	R=$\frac{OI1-OI0}{OI0}$	(R-R□)	(R-R□)^2
2004/05	347.65	-	-	-
2005/06	410.00	0.1793	0.0568	0.0032
2006/07	818.12	0.9954	0.8729	0.7619
2007/08	768.26	-0.06094	-0.1834	0.0336
2008/09	738.99	-0.038	-0.1605	0.0258
2009/10	540.48	-0.2687	-0.3912	0.1530
2010/11	492.31	-0.089	-0.2116	0.0448
2011/12	590.98	0.2004	0.0779	0.0060
2012/13	700.22	0.1849	0.0624	0.0038
Total		ΣR= 1.1032		Σ(R-R□)^2= 1.0321

Source: Nepal Stock Exchange

We have,

Expected Return (R□) =$\frac{\Sigma R}{n}$ = $\frac{1.1032}{9}$ = 0.1225

Standard deviation (σ)= $\sqrt{\frac{\Sigma(R-R□)2}{n-1}}$ = $\sqrt{\frac{1.0321}{9-1}}$ = 0.3591

Variance (σ)2 = $\frac{\Sigma(R-R□)2}{n-1}$ = $\frac{1.0321}{9-1}$ = 0.1290

C.V = $\frac{\sigma}{R□}$ = $\frac{0.3591}{0.1225}$ = 2.9314

Where,

OI0= Beginning Other Sector's Index.

OI1= Ending Other Sector's Index

APPENDIX -G

Realized Ret urn, Standard Deviation, expected return and coefficient of Variance of Insurance Sector.

Year	Year End Price (NEPSE P)	$R=\frac{II1-II0}{II0}$	$(R-\bar{R})$	$(R-\bar{R})^2$
2004/05	320.24	-	-	-
2005/06	381.25	0.1905	0.0108	0.0001
2006/07	612.46	0.6065	0.4268	0.1822
2007/08	817.25	0.3344	0.1547	0.0239
2008/09	656.41	-0.1968	-0.3765	0.1418
2009/10	548.52	-0.1644	-0.3441	0.1184
2010/11	407.14	-0.2577	-0.4374	0.1913
2011/12	497.86	0.2228	0.0431	0.0019
2012/13	937.14	0.8823	0.7026	0.4936
Total		$\Sigma R= 1.6176$		$\Sigma(R-\bar{R})^2= 1.1532$

Source: Nepal Stock Exchange

We have,

$$\text{Expected Return } (\bar{R}) = \frac{\Sigma R}{n} = \frac{1.6176}{9} = 0.1797$$

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\Sigma(R-\bar{R})2}{n-1}} = \sqrt{\frac{1.1532}{9-1}} = 0.3797$$

$$\text{Variance } (\sigma)2 = \frac{\Sigma(R-\bar{R})2}{n-1} = \frac{1.1532}{9-1} = 0.1442$$

$$\text{C.V} = \frac{\sigma}{\bar{R}} = \frac{0.3797}{0.1797} = 2.1130$$

Where,

II0= Beginning Insurance Sector's Index.

II1= Ending Insurance Sector's Index.

APPENDIX -H

Realized Ret urn, Standard Deviation, expected return and coefficient of Variance of Development Bank Sector.

Year	Year End Price (NEPSE P)	R=$\frac{DI1-DI0}{DI0}$	(R-R□)	(R-R□)^2
2004/05	237.86	-	-	-
2005/06	294.40	0.2377	0.1072	0.0115
2006/07	539.66	0.8331	0.7026	0.4936
2007/08	1285.89	1.3828	1.2523	1.5683
2008/09	722.56	-0.4381	-0.5686	0.3233
2009/10	478.53	-0.3377	-0.4682	0.2192
2010/11	294.15	-0.3853	-0.5158	0.2660
2011/12	245.52	-0.1653	-0.2958	0.0875
2012/13	257.20	0.0476	-0.0829	0.0069
Total		ΣR= 1.1748		Σ(R-R□)^2= 2.9763

Source: Nepal Stock Exchange

We have,

Expected Return (R□) =$\frac{\Sigma R}{n}$ = $\frac{1.1748}{9}$ = 0.1305

Standard deviation (σ)= $\sqrt{\frac{\Sigma(R-R□)2}{n-1}}$ = $\sqrt{\frac{2.9763}{9-1}}$ = 0.6099

Variance (σ)2 = $\frac{\Sigma(R-R□)2}{n-1}$ = $\frac{2.9763}{9-1}$ = 0.3720

C.V = $\frac{\sigma}{R□}$ = $\frac{0.6099}{0.1305}$ = 4.6737

Where,

DI0= Beginning Development Bank Sector's Index.

DI1= Ending Development Bank Sector's Index.

APPENDIX -I

Realized Ret urn, Standard Deviation, expected return and coefficient of Variance of Market.

Year	NEPSE INDEX(NI)	Rm=$\frac{NIt-NIt-1}{NIt-1}$	(Rm-R□ m)	(Rm-R□ m)2
2004/05	222.04	-	-	-
2005/06	386.83	0.7481	0.5758	0.3315
2006/07	683.95	0.7681	0.6017	0.3620
2007/08	963.36	0.4085	0.2421	0.0586
2008/09	749.10	-0.2224	-0.3888	0.1512
2009/10	477.73	-0.3623	-0.5287	0.2795
2010/11	362.85	-0.2405	-0.4069	0.1656
2011/12	389.74	0.0741	-0.0923	0.0085
2012/13	518.33	0.3299	0.1635	0.0267
Total		ΣRm= 1.4976		Σ(Rm-Rm□)2= 1.3836

Source: Nepal Stock Exchange

We have,

Expected Return (R□) =$\frac{\Sigma Rm}{n}$ = $\frac{1.4976}{9}$ = 0.1664

Standard deviation (σ)= $\sqrt{\frac{\Sigma(Rm-Rm□)2}{n-1}}$ = $\sqrt{\frac{1.3836}{9-1}}$ = 0.4159

Variance (σ)2 = $\frac{\Sigma(Rm-Rm□)2}{n-1}$ = $\frac{1.3836}{9-1}$ = 0.1729

C.V = $\frac{\sigma}{R□}$ = $\frac{0.4159}{0.1664}$ = 2.4992

Where,

Nit-1= Beginning year NEPSE Index.

OI1= Ending NEPSE Index.

APPENDIX -J

Beta Coefficient (βj) of Common Stock of NIBL.

Year	Rj-R□ j(NIBL)	(Rm-R□ m)	(Rj-R□ j) (Rm-R□ m)
2004/05	-	-	-
2005/06	0.9995	0.5758	0.5755
2006/07	0.5189	0.6017	0.3122
2007/08	0.3458	0.2421	0.0837
2008/09	-0.7683	-0.3888	0.2987
2009/10	-0.8170	-0.5287	0.4319
2010/11	-0.3954	-0.4069	0.1609
2011/12	0.0395	-0.0923	-0.0036
2012/13	0.4202	0.1635	0.0687
Total			Σ(Rj-R□ j) (Rm-R□ m)=1.928

Source: Nepal Stock Exchange

We have,

$$\text{Cov (Rj,Rm)} = \frac{\Sigma(Rj - R\square j)(Rm - R\square m)}{n-1} = \frac{1.928}{9-1} = 0.2410$$

$$\text{Variance of Market Return } (\sigma m^2) = \frac{\Sigma(Rm - Rm\square)2}{n-1} = \frac{1.3836}{9-1} = 0.1729$$

$$\text{Beta of NIBL}(\beta j) = \frac{Cov\ (Rj, Rm)}{\sigma m\ 2}$$

$$= \frac{0.2410}{0.1729}$$

$$= 1.3938$$

APPENDIX –K

Beta Coefficient (βj) of Common Stock of NABIL

Year	Rj-R□ j(NABIL)	(Rm-R□ m)	(Rj-R□ j) (Rm-R□ m)
2004/05	-	-	-
2005/06	0.1314	0.5758	0.0756
2006/07	1.8275	0.6017	1.0996
2007/08	0.0310	0.2421	0.00750
2008/09	-0.2522	-0.3888	0.0980
2009/10	-0.8186	-0.5287	0.4328
2010/11	-0.8757	-0.4069	0.3563
2011/12	-0.0094	-0.0923	0.00086
2012/13	0.3798	0.1635	0.06209
Total			Σ(Rj-R□ j) (Rm-R□ m)=2.1328

Source: Nepal Stock Exchange

We have,

$$\text{Cov (Rj,Rm)} = \frac{\Sigma(Rj - R\square j)(Rm - R\square m)}{n-1} = \frac{2.1328}{9-1} = 0.2666$$

$$\text{Variance of Market Return } (\sigma m^2) = \frac{\Sigma(Rm - Rm\square)2}{n-1} = \frac{1.3836}{9-1} = 0.1729$$

$$\text{Beta of NABIL}(\beta j) = \frac{Cov\ (Rj, Rm)}{\sigma m\ 2}$$

$$= \frac{0.2666}{0.1729}$$

$$= 1.540$$

APPENDIX -L

Beta Coefficient (βj) of Common Stock of BOKL

Year	Rj-R□ j(BOKL)	(Rm-R□ m)	(Rj-R□ j) (Rm-R□ m)
2004/05	-	-	-
2005/06	1.3194	0.5758	0.7597
2006/07	0.3024	0.6017	0.1819
2007/08	0.9027	0.2421	0.2186
2008/09	-0.4157	-0.3888	0.1616
2009/10	-0.8236	-0.5287	0.4354
2010/11	-0.5054	-0.4069	0.2056
2011/12	-0.1510	-0.0923	0.0139
2012/13	-0.2909	0.1635	-0.04756
Total			Σ(Rj-R□ j) (Rm-R□ m)=1.9291

Source: Nepal Stock Exchange

We have,

$$\text{Cov (Rj,Rm)} = \frac{\Sigma(Rj - R\square j)(Rm - R\square m)}{n-1} = \frac{1.9291}{9-1} = 0.2411$$

$$\text{Variance of Market Return } (\sigma m^2) = \frac{\Sigma(Rm - Rm\square)2}{n-1} = \frac{1.3836}{9-1} = 0.1729$$

$$\text{Beta of BOKL}(\beta j) = \frac{Cov\ (Rj, Rm)}{\sigma m^2}$$

$$= \frac{0.2411}{0.1729}$$

$$= 1.347$$

APPENDIX -M

Beta Coefficient (βj) of Common Stock of HBL

Year	Rj-R□ j(HBL)	(Rm-R□ m)	(Rj-R□ j) (Rm-R□ m)
2004/05	-	-	-
2005/06	0.1553	0.5758	0.0894
2006/07	0.6979	0.6017	0.420
2007/08	0.1870	0.2421	0.0453
2008/09	-0.1423	-0.3888	0.0553
2009/10	-0.6153	-0.5287	0.3253
2010/11	-0.2815	-0.4069	0.1145
2011/12	0.1751	-0.0923	-0.0162
2012/13	-0.0082	0.1635	-0.0013
Total			Σ(Rj-R□ j) (Rm-R□ m)=1.0323

Source: Nepal Stock Exchange

We have,

$$\text{Cov (Rj,Rm)} = \frac{\Sigma(Rj - R\square j)(Rm - R\square m)}{n-1} = \frac{1.0323}{9-1} = 0.1290$$

$$\text{Variance of Market Return } (\sigma m^2) = \frac{\Sigma(Rm - Rm\square)2}{n-1} = \frac{1.0323}{9-1} = 0.1729$$

$$\text{Beta of NABIL}(\beta j) = \frac{Cov\ (Rj, Rm)}{\sigma m\ 2}$$

$$= \frac{0.1290}{0.1729}$$

$$= 0.7463$$

APPENDIX –N

Beta Coefficient (βj) of Common Stock of SCBNL

Year	Rj-R□ j(SCBNL)	(Rm-R□ m)	(Rj-R□ j) (Rm-R□ m)
2004/05	-	-	-
2005/06	0.6157	0.5758	0.3545
2006/07	1.1879	0.6017	0.7148
2007/08	0.3794	0.2421	0.0919
2008/09	-0.1737	-0.3888	0.0675
2009/10	-0.7014	-0.5287	0.3708
2010/11	-0.7369	-0.4069	0.2998
2011/12	-0.1250	-0.0923	0.0115
2012/13	-0.1449	0.1635	-0.0237
Total			Σ(Rj-R□ j) (Rm-R□ m)=1.8871

Source: Nepal Stock Exchange

We have,

$$\text{Cov (Rj,Rm)} = \frac{\Sigma(Rj - R\square j)(Rm - R\square m)}{n-1} = \frac{1.8871}{9-1} = 0.2359$$

$$\text{Variance of Market Return } (\sigma m^2) = \frac{\Sigma(Rm - Rm\square)2}{n-1} = \frac{1.3836}{9-1} = 0.1729$$

$$\text{Beta of SCBNL}(\beta j) = \frac{Cov\ (Rj, Rm)}{\sigma m\,2}$$

$$= \frac{0.2359}{0.1729}$$

$$= 1.364$$

APPENDIX -O

Beta Coefficient (βj) of Common Stock of EBL

Year	Rj-R□ j(EBL)	(Rm-R□ m)	(Rj-R□ j) (Rm-R□ m)
2004/05	-	-	-
2005/06	0.2351	0.5758	0.1353
2006/07	1.0724	0.6017	0.6452
2007/08	0.2218	0.2421	0.0536
2008/09	-0.4290	-0.3888	0.1667
2009/10	-0.5684	-0.5287	0.3005
2010/11	-0.6129	-0.4069	0.2493
2011/12	0.0025	-0.0923	-0.00023
2012/13	0.4568	0.1635	0.0747
Total			Σ(Rj-R□ j) (Rm-R□ m)=1.6250

Source: Nepal Stock Exchange

We have,

$$\text{Cov (Rj,Rm)} = \frac{\Sigma(Rj - R\square j)(Rm - R\square m)}{n-1} = \frac{1.6250}{9-1} = 0.2031$$

$$\text{Variance of Market Return } (\sigma m^2) = \frac{\Sigma(Rm - Rm\square)2}{n-1} = \frac{1.3836}{9-1} = 0.1729$$

$$\text{Beta of EBL}(\beta j) = \frac{Cov\ (Rj, Rm)}{\sigma m\,2}$$

$$= \frac{0.2031}{0.1729}$$

$$= 1.174$$