

**A STUDY ON PORTFOLIO ANALYSIS OF INVESTMENT ON THE
SHARE CAPITAL OF JOINT VENTURE BANKS OF NEPAL**

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RECOMMENDATION

This is to certify that the thesis

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CAPITAL OF JOINT VENTURE BANKS OF NEPAL

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DECLARATION

I hereby declare that the work reported this thesis entitled "**A Study on Portfolio Analysis of Investment on the Share Capital of Joint Venture Banks of Nepal**", 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 in Business Studies (M.B.S.) under the supervision of Associate Prof. Achyut Raj Bhattarai and Mr. Shree Bhadra Neupane, Shanker Dev Campus.

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CHAPTER I

INTRODUCTION

1.1 Background of the Study

"Nepal is one of the land locked countries in Asia and like other land locked countries it happens to be among the least developed of the developing countries. Economic development is backbone of any country. Without economic development, the country has fearsome of losing its existence and identity. Primary need of the country is to boost up its economic development to promote the welfare of the people and the country as well as. Economy is the indicator of measuring the country's development and progress. Hence country should be economically developed. There should be proper investment in productive activities to enhance the countries economic development. The development of modern age is going through the banking systems. It requires huge amount of capital to invest in the productive sectors. So, in this banking age, it is being easier to generate the sources of capital through the banking activities. Commercial banks and financial institutions are playing vital role in economic development through capital arrangement and its utilization in the proper sectors". (*Upreti; 2009:2*)

Being an underdeveloped country Nepal introduced "Financial Sector Reforms" in 1980 and it helped to establish number of commercial banks and other financial institutions. As of mid-July 2010 AD there are 28 commercial banks, 63 development banks, 78 finance companies, 13 micro credit development banks, 16 saving and co-operatives and 45 non-government organization in Nepal. Commercial banks and financial institutions are currently viewed as catalyst in the process of economic growth of a country. A key factor in the development of an economy is the efficient mobilization of domestic resources. As intermediaries, the Commercial banks and financial institutions help the process of resource mobilization. Commercial banks and

financial institution transfer the resources by mobilizing them from surplus units and in turn lend these funds to deficit units. In this way, the commercial banks provide savers highly liquid, divisible assets at a lower risk while the investors receive a larger pool of resources. Satisfaction of both lender's and borrower preferences determines the success of intermediary function of an economy. A portfolio is taken as a combination of investment assets. The portfolio is the holding of securities and investment in financial assets i.e. bond, stock. Portfolio management is related to the efficient portfolio investment in financial assets. Commercial banks should have to invest their funds to different sectors.

The banking sector is largely responsible for collecting household savings in terms of different types of deposits and regulating them in the society by lending these to various sectors and by holding government securities. The banking sector has now reached to the most remote areas of the country and has experienced a good deal in the growth of the economy. "The lending of their resources in small-scale industries under intensive banking programmed has enabled the banks to share in the economic growth of the country. Their lending in priority sectors is according to small industry regulations because of which the banks have to lend certain percentage of their deposit in those sectors regardless of the income (repayment) from it." (*Upreti; 2009:2*)

The guidelines given by Nepal Rastra Bank (policy and legal constraints) play a significant role in the composition of bank portfolio. Since the constraint framework provided by the central bank is for economic enhancement, it can be hypothesized that the composition of bank portfolio has considerable impact on national economy; accredited by national income (GNP) or domestic product (GDP).

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 national and international trade and mobilization of saving to the productive sectors.

The number of joint venture banks has been increasing so is the investment volume and opportunity in various sectors that extends to agriculture, industry commercial and social sectors. Among all the banks, 11 joint venture banks are listed in Nepal stock exchange in FY 2003/04, which claims the highest contribution on the market capitalization as compared to other sectors. As financial intermediary, the joint venture banks also play an important role as fiscal policy implementing body for central bank. The monetary structure involves analysis of the behaviour of banking system, so needs and importance of the commercial banks are increasing.

"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 JV is a single business deal, which is jointly undertaken by two or more persons or parties with a view to making and sharing profit. The specific features of JV are as follows:" (*Lawrence; 1985:25*)

- It is confined to a single deal.
- A JV is limited to a single business adventures.
- Participants contribute capital for the JV and share profits and losses in proportion to their capital (investment) and

- The work of JV 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". Common stockholders are residual owners of the firm. In real, they're the real owners of the firm. They invest in the 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.

"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 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.

"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 even which can be assigned probabilities". *(Khan and Jain; 1992:22)*

“Risk is like 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; 2000:11*)

“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*)

“The expected rate of return for any asset is the weighted average rate of return using then probability of each rate of return as the weight”. (*Francis; 2000:11*)

1.1.1 A Brief Profile of Sample Banks

(a) Nepal Investment Bank Ltd. (NIBL)

Nepal Investment Bank Ltd. (NIBL), previously Nepal Indosuez Bank Ltd., was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50% of the capital of NIBL) was Credit

Agricole Indosuez, a subsidiary of one the largest banking group in the world. With the decision of Credit Agricole Indosuez to divest, a group of companies comprising of bankers, professionals, industrialists and businessmen, had acquired on April 2002 the 50% shareholding of Credit Agricole Indosuez in Nepal Indosuez Bank Ltd. The name of the bank has been changed to Nepal Investment Bank Ltd. upon approval of bank's Annual General Meeting, Nepal Rastra Bank and Company Registrar's office with the following shareholding structure.

- A group of companies holding 50% of the capital
- Rashtriya Banijya Bank holding 15% of the Capital.
- Rashtriya Beema Sansthan holding the same percentage.
- The remaining 20% being held by the General Public (which means that NIBL is a Company listed on the Nepal Stock Exchange).

(b) Nepal Arab Bank Ltd. (NABIL)

Nabil Bank Limited, the first foreign joint venture bank of Nepal, started operations in July 1984. Nabil was incorporated with the objective of extending international standard modern banking services to various sectors of the society. Pursuing its objective, Nabil provides a full range of commercial banking services through its 40 points of representation across the kingdom and over 170 reputed correspondent banks across the globe.

Nabil, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business. Operations of the bank including day-to-day operations and risk management are managed by highly qualified and experienced management team. Bank is fully equipped with modern technology which includes ATMs, credit cards, state-of-art, world-renowned software from Infosys Technologies System, Bangalore, India,

Internet banking system and Telebanking system. 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.

(c) Bank of Kathmandu Ltd. (BOKL)

BOK started its operation in March 1995 with the objective to stimulate the Nepalese economy and take it to newer heights 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% holdings to the Nepalese citizen in 1998. BOK also aims to facilitate the nation's economy and to become more competitive globally.

Bank of Kathmandu Limited has become a prominent name in the Nepalese banking sector. Bank of Kathmandu Limited (BOK) has today become a landmark in the Nepalese banking sector by being among the few commercial banks which is entirely managed by Nepalese professionals and owned by the general public. Bank of Kathmandu is committed to providing products and services of the highest standards to its customers by understanding their requirements 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 operating cost.

(d) Himalayan Bank Ltd. (HBL)

Himalayan Bank was established in 1993 in joint venture with Habib Bank Limited of Pakistan. Legacy of Himalayan lives on in an institution that's known throughout Nepal for its innovative approaches to merchandising and customer service. Products such as Premium Savings Account, HBL Proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele-banking were first introduced by HBL. Other financial institutions in the country have been following our lead by introducing similar products and services. Therefore, we stand for the innovations that we bring about in this country to help our Customers besides modernizing the banking sector. With the highest deposit base and loan portfolio amongst private sector banks and extending guarantees to correspondent banks covering exposure of other local banks under our credit standing with foreign correspondent banks.

All Branches of HBL are integrated into Globus (developed by Temenos), the single Banking software where the Bank has made substantial investments. This has helped the Bank provide services like 'Any Branch Banking Facility', Internet Banking and SMS Banking. Living up to the expectations and aspirations of the Customers and other stakeholders of being innovative, HBL very recently introduced several new products and services. Millionaire Deposit Scheme, Small Business Enterprises Loan, Pre-paid Visa Card, International Travel Quota Credit Card, Consumer Finance through Credit Card and online TOEFL, SAT, IELTS, etc. fee payment facility are some of the products and services. HBL also has a dedicated offsite 'Disaster Recovery Management System'. Looking at the number of Nepalese workers abroad and their need for formal money transfer channel; HBL has developed exclusive and proprietary online money transfer software- Himal Remit TM. 80 % of the

investment of this bank is made from Nepalese investors and 20% from foreign investors.

(e) Standard Chartered Bank Nepal Limited

Standard Chartered Bank Nepal Limited has been in operation in Nepal since 1987 when it was initially registered as a joint-venture operation. Today the Bank is an integral part of Standard Chartered Group having an ownership of 75% in the company with 25% shares owned by the Nepalese public. The Bank enjoys the status of the largest international bank currently operating in Nepal.

Standard Chartered has a history of over 150 years in banking and operates in many of the world's fastest-growing markets with an extensive global network of over 1750 branches (including subsidiaries, associates and joint ventures) in over 70 countries in the Asia Pacific Region, South Asia, the Middle East, Africa, the United Kingdom and the Americas. As one of the world's most international banks, Standard Chartered employs almost 75,000 people, representing over 115 nationalities, worldwide. This diversity lies at the heart of the Bank's values and supports the Bank's growth as the world increasingly becomes one market.

The Bank has been the pioneer in introducing 'customer focused' products and services in the country and aspires to continue to be a leader in introducing new products in delivering superior services. It is the first Bank in Nepal that has implemented the Anti-Money Laundering policy and applied the 'Know Your Customer' procedure on all the customer accounts.

(f) Everest Bank Limited (EBL)

Everest Bank Limited (EBL) was established in 1994 and started its operations with a view and objective of extending professionalized and efficient banking services to various segments of the society. EBL joined hands with Punjab 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 local Nepalese promoters hold 50% stock in the Bank's equity, while joint venture partner PNB contributes 20% of 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.

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. Some times 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 investors 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 this 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 inventors 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. Investors' of Nepal invest their wealth on the basis of looking the past trends of stock prices; so, some times 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”.
(Upadhyya; 2001:11)

Now, it become necessary to make polices, evaluate relative riskness of decision and impact to general investors by the security businesspersons, security manager, and stockbrokers.

The study deals with the following issues:

- What are the comparative risk positions of selected joint venture banks?
- Does the risk and return among selected joint venture banks vary significantly?
- Would portfolio construction within the selected joint venture banks be profitable?

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.

1.3 Objectives of the Study

The general objective of this study is to identify the situation of portfolio management of commercial banks in Nepal. The specific objectives of the research are as follows:

- a. To survey the of portfolio management practices of commercial JV banks under study.
- b. To analyze the risk & return ratios of the common stocks of commercial JV banks and their variation.
- c. To estimate an optimal portfolio among the common stock investments of commercial JV banks

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 potentiality 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 this 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 Limitations of the 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.

- a. It only focuses on selected listed companies covering the period of last nine years (2000/01 to 2008/09).
- b. This study is mainly based on published secondary data.
- c. This study only concerns with the risk and return of selected listed companies i.e. joint venture banks.
- d. Secondary data gathered from related sources has been used. The reliability depends on it.
- e. This study has been conducted to fulfill the requirement of the MBS programs of T.U. for a prescribed time, not for generalization purpose.
- f. Only risk and return of common stock would be analyzed.
- g. In this study NEPSE is taken as basic source of data.
- h. As a research student the study will be unbiased but resources and time period is limited.
- i. 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 present study is organized in five chapters. They are as follows:

Chapter I: Introduction

This chapter introduces the background of the project, which includes; background, statement of the problem, objectives of study, significance of the study, limitations of the study and organization of the study.

Chapter II: 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 III: Research Methodology

This chapter deals with the research methodology used in the study, which includes; research design, population and sample, sources of data, tools for analysis and methods of presentation of analysis.

Chapter IV: 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 V: Summary, Conclusion and Recommendations

This last chapter presents the summary, conclusion and recommendation for further study. Bibliography and appendices are incorporated at the end of the study.

CHAPTER II

REVIEW OF LITERATURE

The chapter review of literature includes the review of concept and finding of previous research on the some field. Books, journals and unpublished thesis are reviewed for this purpose. In this regard, basic academic course book on finance, recently published books specially related to this topic, some of the major research based journals and the related studies are reviewed. In addition, independent studies carried out by well-known Nepalese financial experts are also taken into consideration.

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 finance theory”. 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 Asset

Pricing Model (CAPM) for valuing assets with a view to facilitate the investment decision." (*Pandey; 1997:15*)

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 certain about the outcome of a particular activity or event, so we are not sure what will occur in the future. Consequently, risk results from the fact that an action such as investing can produce more than one outcome in a 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." (*Pandey; 1997:15*)

2.1.2 Return on Common Stock

The cash payoffs to owners of common stocks are of two kinds:

- i. Cash dividend
- ii. Capital gain (loss)

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 that 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:

$$\text{Expected return} = R = \frac{\text{Div}_1 + P_1 - P_0}{P_0}$$

"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." (*Barely and Myers; 1994:84*)

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

$$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$$

Where,

R = Actual/expected return

t = Particular time period in the past (future).

D_t = Stocks price at time period t .

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

The above mentioned formulae can be used to find out both actual single-period return (when based on historical data) as well as expected single period return (when based on future expected dividends and prices).

(The term in the parenthesis in the numerator of above equation represents the capital gain or loss during the period.)

"Holding period return measure mentioned above is useful with an investment horizon of one year or less. For longer periods, it is 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". (*Barely and Myers; 1994:21*)

"Return is defined as the divided 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 outlook for the economy and the outlook for the industry, the outlook for the firm in its industry and another factors". (*Barely and Myers; 1994:24*)

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 and Brigham; 1995:182-183*)

"Most people view risk in the manner we just described 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 riskness of financial assets, suppose someone has a large amount of money to invest for 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 a 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 be 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 an 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's returns. However, we can define risk more precisely, and it is useful to do so". (*Weston and Brigham; 1995:182-183*)

Different people interpret uncertainties and risks in different ways. For some, uncertainty 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 and risk, people often use them interchangeably.

Although the meaning of these two terms may differ, authorities in the field of finance and people concerned about fiancé 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, then uncertainty is nothing but just the opposite of certainty that refers to all possible future outcomes none of which is known 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 the degree of variability in the probability distribution of each outcome.

In the case of financial analysis, definitely, risk and uncertainty are treated separately. The practice is to translate the uncertainty into mathematical value, which denotes the best estimate of all uncertainty values. In other words, uncertainty is taken care of 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 the 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 unlooked-for, unwanted event in the future; some one has 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 meanings in different contexts. In 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 and Brigham; 1995:182-183*)

Being a complicated subject, risk needs to be properly analyzed. The relationship between risk and return is described by investors’ 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 of book 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 market as well as individual assets including common stocks.

a) 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; 2000:232-240)

"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. 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." (*Francis; 2000:399*)

In this book, Francis, Jack Clark has focused on the different portfolio approaches or forms of diversification, which areas follow:

Simple Diversification (Naïve 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 undiversifiable risk remains. So this approach assumes that an investor can expect a reasonable return for a given level of risk." (*Francis; 2000:232-256*)

b) Superfluous Diversification (Over Diversification)

If refers to the investor spreading himself in so investments on his portfolio. The investor finds it impossible to manage the assets on his portfolio because the management of a large number of ascertain 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 tstments. 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.

c) 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.

d) Simply Diversification across Quality Rating Categories

Simply Diversification reduces risk within categories of stocks that all have the same quality rating.

e) Assets Allocation

Francis, Jack Clark writes, assets allocation decisions deal with attaining the optimal proportions 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.

f) 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 asset with the negative weight." (*Francis; 2000:400*)

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

1. Primary objectives
 - a. To maximize return
 - b. To minimize risk
2. Secondary objectives
 - a. Regular returns
 - b. Stable income
 - c. Appreciation of capital

- d. Ever liquidity
- e. Easy marketability
- e. Safety of investment
- f. Tax benefits

“The portfolio theory provides a normative approach to the investors’ decision to investment in assets or securities under risk. 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.” (*Pandey; 1997:329*)

g) 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 concepts 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 undiversifiable level. Markowitz’s diversification is more analytical than simple diversification and consider asset’s correlation (or covariance). The lower the correlation between assets, the more the Markowitz diversification will be able to reduce the portfolio’s risk." (*Pandey; 1997:329*)

h) Sharpe: The Single Index Model (SIM)

Constructing the Optimal Portfolio

“The desirability of any security is directly related to its excess return to beta ratio: $(\tilde{R}_i - T)/\beta_i$ where \tilde{R}_i is the expected return on security i , T is the return on a riskless asset, and β_i is the expected change in the rate of return on security i associated with a 1 percent change in the market return. Securities are ranked by excess return to beta (from highest to lowest), the ranking represents the desirability of any security’s inclusion in a portfolio. The number of securities selected depends on a unique cut-off rate such that all securities with higher ratio of $(\tilde{R}_i - T)/\beta_i$ will be included and all securities with lower rates excluded. Selecting the optimal portfolio involves the comparison of $(\tilde{R}_i - T)/\beta_i$ with C^* . All securities whose excess return-to-risk ratios are above the cut-off rate are selected and all those whose ratios are below are rejected. The value of C^* is computed from the characteristics of all of the securities that belong in the optimum portfolio. To determine C^* , it is necessary to calculate its values as if there are different numbers of securities in the optimum portfolio. Suppose C_i is candidate of C^* , the value of C_i is calculated when i securities are assumed to belong to the optimal portfolio”. (*Bhalla; 2001:533-535*)

“Since securities are ranked from highest excess return to beta to lowest, we know that if a particular security belongs in the optimal portfolio, all higher ranked securities also belong in the optimal portfolio. We proceed to calculate values of a variable C_i as if the first ranked security were in the optimal portfolio ($i=1$), then the first and second ranked securities were in the optimal portfolio ($i=2$), and so on. These C_i are candidates for C^* . We have found the optimum C_i , that is, C^* , when all securities used in the calculation of C_i have excess return to beta above C_i and all securities not used to calculate C_i have excess return to betas below C_i . There will always be one and only one C_i with this property and it is C^* .” (*Bhalla; 2001:534*) For a portfolio of i securities, C_i is given by:

$$C_i = \frac{\sigma_m^2 \sum_{i=1}^n \frac{(\tilde{R}_i - T) \beta_{im}}{\sigma_{ei}^2}}{1 + \sigma_m^2 \sum_{i=1}^n \frac{\beta_{im}^2}{\sigma_{ei}^2}}$$

Where:,

σ_m^2 = variance of the market index

σ_{ei}^2 = variance of a security's movement that is associated with the movement of the market index;

“To construct the optimum portfolio, the percent invested for each selected security in the optimal portfolio is to be calculated. The percentage invested in each security is:

$$X_i^0 = \frac{Z_i}{\sum_{j=1}^n Z_j}$$

Where

$$Z_i = \frac{\beta_{im}}{\sigma_{ei}^2} \left[\frac{\tilde{R}_i - T}{\beta_{im}} - C^* \right]$$

The second expression determines the relative investment in each security, and the first expression simply scales the weights on each security so that they sum to 1 (ensure full investment). The residual variance on each security σ_{ei}^2 plays an important role in determining how much to invest in each security. Applying this formula to selected samples, we obtain Z_i then dividing each security Z_i by the sum of the Z_i we would invest proportional percent of our funds in selected security”. (*Bhalla; 2001:536*)

i) Capital Asset Pricing Model (CAPM)

In the book “Investment Analysis and Portfolio Management”, written by Prasanna Chandra has focused on Capital Asset Pricing Model. “The CAPM predicts the 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 been 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 applications”. (*Chandra; 2002:240-245*)

Prasanna Chandra presents the following basic assumptions 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 the 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, the 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 the CAPM is:

$$E (r_i) = R_f + [E (r_m) - R_f] b_i$$

Where,

$E(r_i)$ = expected return for an assets

R_f = the risk-free rate (usually assumed to be a short-term T-bill rate)

$E(r_m)$ = the expected return of market

b_i = the assets' 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:

$$E(r_i) = \left(\frac{R_f + [E(r_m) - R_f]}{\sigma_m^2} \right) C_{im}$$

Where,

$E(r_i)$ = expected return for on security i

R_f = the risk-free return

$E(r_m)$ = the expected return on market portfolio

σ_m^2 = Variance of return on 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 return + (Price per unit of risk)
Risk

$$\text{The price per unit of risk} = \frac{E(r_m) - R_f}{\sigma_m^2}$$

$$\text{The measure of risk} = C_{im}$$

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

$$b_i = \frac{C_{im}}{\sigma_m^2}$$

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:

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

In words, the SML relationship says:

Expected return on security i = Risk-free return + Market risk premium \times 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.

Figure 2.1

The CAPM or SML

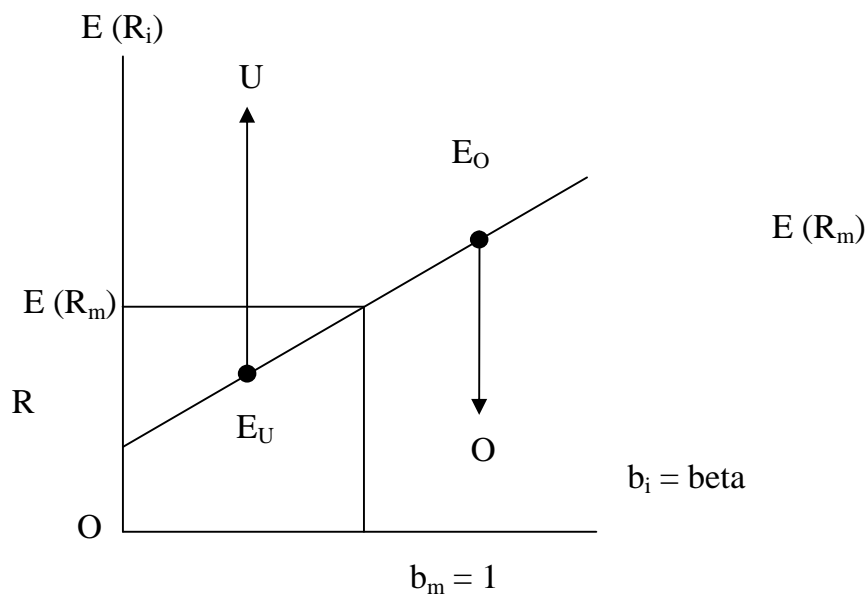


Figure 2.1 depicts two assets, U and O, which are not in equilibrium on the CAPM. Asset U is undervalued and, therefore, a very desirable asset to own. U's price will rise in the market as more investors purchase it. However, as U's price goes up, its return falls. When U's return falls to the return 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

increases 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 unweighted average price for group of stock. Stock market indexes typically employ more defined methods to measure the level in stock prices than do stock market averages.

“Index numbers are void of rupee values or other units of measure. Stock market indexes are usually calculated as ratios of rupee values. They are pure numbers that are used for 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 as investing can produce more than one outcome in number of different stocks. 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 order to impart a time perspective to the index".
(Thapa; 2002:25)

2.2 Review of Journals and Articles

Zorin and Goetman, (1999) have published an article, "*Global Stock Market in 20th Century*", where they have concluded that 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. The study showed that one would need a very large difference of risk aversion, largely in excess of the usual value of two to generate such a premium. This upsetting result has sparked a flurry of theoretical research that explains

alternative performance structure; including dropping the expected utility assumption and introducing habit function.

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; for 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 up winnings. The performance of globally diversified portfolios is around 4.0%, 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 information about actual investment risk.

Breman and Henry, (1997), have publishes an article, "*International Investment Flows*", where they have stated that and 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 possess a cumulative information advantage over foreign investors period when the return on foreign asset is high and to sell when the return is low.

They found that 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 residents 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.

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.

Kent and Suvrahmandam, (1998) have published an article, " *Investors' Psychology and Security Market Under and Over Reaction*", where they study about investors' psychology in stock market under react and overreact of security. To find out it, the theory was based on following two psychological bases: (1) Investors' over confidence about precise of private information. (2) Biased Self-attribution, which causes asymmetric shift in investor's confidence as a 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.

The study has made some following assumptions:

1. Investors are quasi-rational and they are optimizers except for then biased updating of this precision.
2. The model explains the price anomalies as market inefficiencies.
3. 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 based 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.

2.3 Review of Independent Study

Pradhan, (1993) has published an article "*Stock Market Behavior of Small Capital Market: A Case of Nepal*", where he study about stock market behaviour in small capital market. This helps to provide at least some insight into stock market behaviour 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 earning and dividends with liquidity, leverage profitability assets turnover and interest coverage. To find out the above objective, 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.

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 to 1990, usable data could be obtained for 17 enterprises” (Pradhan, 1993). These enterprises are in different sectors such as manufacturing, banking, trading, hotels, insurance etc. in this study, he has constructed three different levels of portfolios of sample securities (small, intermediate, and large). According to the study, market value to book value, P/E 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 that larger stock have longer price earning ratios larger ratio of market value to book value of equity, lower liquidity, lower profitability, and small dividends. Price earnings ration and dividend are more variable for smaller stocks, whereas market value to book value of equity is more variable for larger stock. 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 earning 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 earning 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.

Shrestha., (1998) has published an article "*Shareholder's Democracy and Annual General Meeting Feedback*", where he 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 s 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.

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 of 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.

Manandhar, (1998) has published an article "*A Study of Dividend Policy and Value of Firm in Small Stock Market: A Case of Nepal* ", where he study in the context of Nepal. The study is aimed at identifying some of the significant variables that are significant to the vale 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”. At the time of research, it was found the following problems in stock market and dividends practices:

1. Most companies are underrating the expectation of investors and thereby resulting how marketability of share and trading floor of stock exchanges.
2. Majorities of the companies are declaring dividends less than risk free rate and market risk premium.
3. 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.
4. 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.

To 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.

2.4 Review of Thesis

The studies performed related to topic risk and return analysis' but there are less study performed in this specific topic i.e. study on portfolio analysis of investment on the share capital of joint venture banks of Nepal. However the performed studied are in some extent, related to the proposed study.

Pantha, (2005), conducted study on "*Stock Market and Portfolio Analysis*" (*With Special Reference of Six Listed Companies Including Insurance Companies and Banks i.e. Nabil Bank Ltd., Standard Chartered Bank Ltd., Nepal Bangladesh Bank Ltd., United Insurance Company and Everest Insurance Company*). The major objectives of the study are:

- To study and analyze the existing portfolio in between banking sectors and insurance companies.
- To compute the risk and return of common stocks and their portfolio.
- To recommend few practical implications based on analysis of the data.
- To find out cut-off rate of selected companies.

The major findings of the study are:

The expected rate of return of the common stock of Everest Insurance Company (EIC) is highest i.e. 55% among the selected six companies and the lowest expected rate of return is 13% of United Insurance Company (UIC). The standard deviation (i.e. risk) is observed maximum in common stock of EIC i.e. 74% and minimum in common stock of Standard Chartered Bank Ltd. (SCBL). Coefficient of variation (C.V.) shows the relative measure of risk. Among six selected companies, C.V. of stock of UIC has the highest i.e. 3.86 and stock of EIC has the 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 tselected companies' stocks are under priced because of less required rate of

return than expected rate of return so that it is better to buy these stocks. EIC's common stock has the highest excess return to beta.

Maharjan, (2006), completed his study on "*A Study on Corporate Portfolio Management in Nepal*" with the following objectives:

- To examine the portfolio management practices in Nepalese Commercial banks.
- To analyze portfolio attributes of Nepalese commercial banks in relation to risk and return their performance in relation with portfolio.
- To find out strategy for optimal portfolio selection for investors.
- To distinguish between diversifiable and undiversifiable in investment activities.

The major findings of the study are:

The expected return of EBL is highest i.e. 76.90% & the exp. rate of return of SBI is the lowest i.e. 13.30%. In terms of risk common stock of BOK is most risky while SCB is least risky. According to the calculation of beta co-efficient common stock of BOK is the most volatile one i.e. 6.06 & Nabil stock is the least volatile i.e. 1.44. The highest required return is 41.9% of BOK & lowest required return is 16.6% of SCB under CAMP. In case of EPS, SCBNL had the highest EPS i.e. Rs. 134.60 & BOK had the lowest i.e. Rs. 13.73. DPS:-SCB has the highest DPS i.e. Rs. 95.00 & Nabil & EBL have the lowest average DPS of Rs. 5.47. For ROA, SCBNL had the highest average ROE of 43% while NIBL had the lowest of 13.20%. The correlation between risk and return with profitability assumed that higher the risk higher should be the profit and higher the return the more should be the profit. But his study shows just opposite or negative correlation or no correlation just because of small sample size or lack of investment opportunity. The correlation between risk and return is positive which means significant remarks.

Upadhaya, (2006) study on, "*Portfolio Analysis of Commercial Banks of Nepal*" in 2006. He has taken eight banks as sample. The samples of his studies are, Nepal Arab bank Ltd. (NABIL), Nepal Indosuez Bank Ltd. (NIBL), Nepal Grindlays Bank Ltd. (NGBL), Himalayan Bank Ltd. (HBL), Nepal SBI Bank Ltd. (SBI), Nepal Bangladesh Banks Ltd. (NBBL), Everest Bank Ltd. (EBL) and Bank of Kathmandu Limited. The objectives of the study are:

- To examine the portfolio management practices in Nepalese Commercial banks.
- To analyze portfolio attributes of Nepalese commercial banks in relation to risk and return their performance in relation with portfolio.
- To find out strategy for optimal portfolio selection for investors.
- To distinguish between diversifiable and undiversifiable in investment activities.

The major findings of the study are:

As overall economy, Nepalese stock market is in 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 can not analyze the securities as well as market properly.” In his findings, he found that, the return is income received on a stock investment, which is usually expressed in percentage. Expected return of the CS of Nepal SBI Bank Ltd. is found 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 twchich is defined by market and measured by beta (β) coefficient. Beta explains the sensitivity or volatility of the stock with market, higher the beta greater the volatility. NABIL and HBL’s common stock are also volatile as far as beta is concerned. In the recommendation and suggestion section, Mr. Upadhyaya found that tools that

has 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 looks for analyzing, for this they can consult concerned organization e.g. NEPSE people and SEBO. Using various tools will be 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 not correlation or negatively correlation stocks. Similar stocks can not diversify risk properly.

Adhikari, (2008) conducted a study on, “*Portfolio Analysis of Common Stock in Nepal (With Special Reference of Commercial Banks of Nepal)*” is very closely related to this study. The study has performed an 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 both studies are related with risk and return analysis of commercial banks. The main objectives of the study are:

- To study and analyze the existing portfolio of commercial banks.
- To compute the risk and return of common stocks and their portfolio.
- To recommend few practical implications based on analysis of the data.
- To find out cut-off rate of selected companies.

The major findings of the study are:

The study stated 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 this regard common stock of NBL is most risky and common stock of NSB is least risky. In the context of industries, expected return of finance and insurance industry is found 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 as investing can produce more than one outcome in tBB) 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.

Upreti (2009) conducted a study on, "*Portfolio Analysis of Commercial Banks of Nepal*" by using five-year data from 2003 to 2008. There were various objectives of the study. The specific objectives of the research are as follows:

- To survey the existing situation of portfolio management of joint venture banks in Nepal.
- To evaluate the investment and advances portfolio of joint venture banks.
- To analyze the risk and return ratio of commercial banks.
- To provide the suggestive package based on the analysis of the data.

The major findings of the study are:

Among the selected banks the ratios of Everest Bank Limited are more consistent than the other four banks. SCBNL is not investing its fund on NRB bond after 2002 AD and on government securities after 2003 AD. HBL is not investing its fund on NRB bond after 2003 AD and investing very high amount of fund on government securities. NBBL is investing very high amount of its fund in government securities. EBL is not investing its fund on NRB bond after 1997 AD but is investing high amount of fund on government securities.

SCBNL is providing very high amount of its loans and advances to the private sectors. It has also given the second priority to Foreign Bills Purchase and Discount.

HBL is providing very high amount of its loans and advances to the private sectors in increasing trends. It has also given the second priority to Foreign Bills Purchase and Discount. NBBL is 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 as investing can produce more than one outcome in very low amount of loan to Foreign Bills Purchase and Discount.

EBL is providing very high amount of its loans and advances to the private sectors and has given the second priority to Foreign Bills Purchase and Discount. It is not providing amount of loans and advances to government enterprises. Interest rate so ascertained by financial institution for the year 1999 ranges from 12% to 12.75% per annum. As it is reviewed on background of commercial banks deposits accepted on fixed term carry 8% to 9.5% p.a. Interest rate in 2003. 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 shareholders have 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.

Research Gap

From the Review of various books, articles and theses, this study is different from previous studies in terms 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 ratio $[(\bar{R} - \text{Risk free rate})/\beta_i]$ 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. This study will be fruitful to those interested person, researchers, students, teachers, businessmen and government for academically as well as policy perspectives.

CHAPTER III

RESEARCH METHODOLOGY

The main objective of this study is to make the analysis of risk and return of joint venture banks. Thus this chapter is designed to meet the set objectives. The brief discussion of the methodology followed in the study is given below. This chapter includes the brief description of research design, population and sample, sources of data, data collection instrument and procedures and method and tools used for analyzing the data.

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. 2000/01 to 2008/09. 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 were one hundred and fifty seven companies listed in Nepal Stock Exchange Ltd. by the end of the fiscal year 2008/09 out of them only 26 commercial banks, which submitted their annual reports to security board though there are 28 commercial banks in Nepal. Twenty six commercial banks have been assumed as the population of the study and among them following six listed joint venture banks are taken as sample of the study on the basis of judgmental sampling. They are:

- i. Nepal Arab Bank Limited (NABIL).
- ii. Nepal Investment Bank Limited (NIBL).
- iii. Bank of Kathmandu Limited (BOKL).

- iv. Himalayan Bank Limited (HBL)
- v. Standard Chartered Bank Nepal Limited (SCBL)
- 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 (p)

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 (D)

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. bcertain 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 tditional 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 for dividend:

i. In the case of stock dividend:

Total div. Amount = cash div. + stock div. % × next year's MPS

ii. In the case of 'right issued' at par:

Total dividend amount = cash div. + right issued % × next year's MPS

3.4.3 Return on Common Stock Investment (R)

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

Symbolically,

$$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$$

Where,

R = Actual rate of return on common stock at time 't'.

D_t = Cash dividend received at time 't'.

P_{t-1} = Price of stock at time (t-1)

Standard deviation (σ_j): Standard deviation is a statistical tool to measure the variability of a distribution of return around its mean. It measures the unsystematic risk on the stock investment. Standard deviation is the square root of the variance.

Symbolically,

$$\sigma_j = \sqrt{\frac{\sum(R_j - \bar{R}_j)^2}{n - 1}}$$

where,

σ_j = Standard deviation of returns on stock j during the time period 'n'.

R_j = Return on common stock 'j' investment.

\bar{R}_j = Expected return on common stock.

3.4.4 Expected Return of Common Stock E (R_j)

One of the main objectives of the study is to determine the expected return on common stock investment. Generally, this rate is obtained by arithmetic mean of the past years return.

Symbolically,

$$E(R_j) = \bar{R}_j = \frac{\sum R_j}{n}$$

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 Coefficient of Variation (C.V.)

It is the ration of standard deviation of returns to the distribution. It is a measure of relative risk.

Symbolically,

$$C.V. = \frac{\sigma_j}{R_j}$$

3.4.6 Beta Coefficient (β)

It is an index of systematic risk. It measures the sensitivity of a stock's return on the market portfolio.

Symbolically,

$$\beta_j = \frac{\text{Cov.}(R_j, R_m)}{\sigma_m^2}$$

Where, β_j = beta coefficient of stock j.

$\text{Cov.}(R_j, R_m)$ = Covariance between R_j and R_m and is equal to

$$\text{Cov.}(R_j, R_m) = \frac{(R - R_j)(R_m - R_m)}{n - 1}$$

σ_m^2 = Variance of market return

3.4.7 Correlation coefficient (ρ_{ij})

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

$$\text{Cov.}_{ij} = \sigma_i \sigma_j \rho_{ij}$$

$$\text{Therefore, } \rho_{ij} = \frac{\text{Cov.}_{ij}}{\sigma_i \sigma_j}$$

Where σ_i and σ_j are the standard deviations of returns for assets i and j, and ρ_{ij} is the correlation coefficient for assets i and j.

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

3.4.7.1 Perfect Positively Correlation ($\rho_{ij} = +1$)

Returns on two perfectly correlated stocks would move up and down together and portfolio consisting of two succertain 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 tation does nothing to reduce risk if the portfolio consists of perfectly positively correlated stock.

3.4.7.2 Perfect negatively correlation ($\rho_{ij} = -1$)

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.

3.4.7.3 No relationship between return ($\rho_{ij} = 0$)

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.

3.4.7.4 Intermediate risk ($\rho_{ij} = +0.5$)

Most stocks are positively correlated, but not perfectly. On average, the returns 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.

3.4.8 Portfolio Return (R_p)

Portfolio is combination of two or more securities or assets and portfolio return is simply a weighted average of individual stock returns.

Symbolically,

$$R_p = W_A R_A + W_B R_B$$

Where,

R = Expected return on portfolio of stock A and stock B.

W_A = Weight of stock A.

W_B = Weight of stock B.

$$W_A + W_B = 1.$$

3.4.9 Portfolio Risk (σ_p)

Portfolio risk is measured by the combined standard deviation of the standard deviations of individual stock return.

Symbolically,

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{Cov.}(R_A, R_B)}$$

Where,

σ = Standard deviation of portfolio returns of stock A and Stock B.

$\text{Cov.}(R_A, R_B)$ = Equivalent representation covariance of returns between assets A and B.

3.4.10 Risk Minimizing Portfolio

It is the ratio of the two assets, which minimize the risk (σ_p).

Symbolically,

$$W_A = \frac{\sigma_B^2 - \text{Cov.}(R_A, R_B)}{\sigma_A^2 + \sigma_B^2 - 2\text{Cov.}(R_A, R_B)}$$

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.

3.4.11 Constructing the Optimal Portfolio

The desirability of any security is directly related to its excess return to beta ratio: $(\tilde{R}_i - T)/\beta_{im}$ where \tilde{R}_i is the expected return on security i , T is the return on a riskless asset, and β_{im} is the coefficient of variation about the outcome of a particular activity or event, so we are not sure what will occur in the future. Consequently, risk results from the fact that an action such as investing can produce more than one outcome in t (from highest to lowest), the ranking represents the desirability of any security's inclusion in a portfolio. The number of securities selected depends on a unique cut-off rate such that all securities with higher ratio of $(\tilde{R}_i - T)/\beta_{im}$ will be included and all securities with lower ratios excluded.

Selecting the optimal portfolio involves the comparison of $(\tilde{R}_i - T)/\beta_{im}$ with C^* . All securities whose excess return-to-risk ratios are above the cut-off rate are selected and all those whose ratios are below are rejected. The value of C^* is computed from the characteristics of all of the securities that belong in the optimum portfolio. To determine C^* , it is necessary to calculate its values as if there are different numbers of securities in the optimum portfolio. Suppose C_i is a candidate of C^* , the value of C_i is calculated when i securities are assumed to belong to the optimal portfolio. For a portfolio of i securities, C_i is given by:

$$C_i = \frac{\sigma_m^2 \sum_{i=1}^i \frac{(\tilde{R}_i - T)\beta_{im}}{\sigma_{ei}^2}}{1 + \sigma_m^2 \sum_{i=1}^i \frac{\beta_{im}^2}{\sigma_{ei}^2}}$$

Where,

σ_m^2 = variance of the market index

σ_{ei}^2 = variance of a security's movement that is associated with the movement of the market index;

“To construct the optimum portfolio, the percent invested for each selected security in the optimal portfolio is to be calculated. The percentage invested in each security is:

$$X_i^0 = \frac{Z_i}{\sum_{j=1}^n Z_j}$$

Where

$$Z_i = \frac{\beta_{im}}{\sigma_{ei}^2} \left[\frac{\tilde{R}_i - T}{\beta_{im}} - C^* \right]$$

The second expression determines the relative investment in each security, and the first expression simply scales the weights on each security so that they sum to 1 (ensure full investment). The residual variance on each security σ_{ei}^2 plays an important role in determining how much to invest in each security. Applying this formula to selected samples, it can be obtain Z_i then dividing each security Z_i by the sum of the Z_i it would be possible to invest proportional percent of total funds in selected security.”

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

4.1 Analysis of Data

This chapter data presentation and analysis is the main body of the study. Detail 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 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 tence 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 “A study on portfolio analysis of investment on the share capital of joint venture banks of Nepal”, it is necessary to analyze the common stock of selected joint venture banks.

4.1.1 Nepal Arab Bank Limited (NABIL)

4.1.1.1 Data

Market price, dividend records of common stock of NABIL are shown in Table 4.1, Price is maximum (Rs.5275) in year 2008/2009 reached at its lowest (Rs.430) in year 2001/2002. Similarly closing price are Rs.500, Rs.700, Rs.1400, Rs.1500, Rs. 1000 Rs.1505, Rs.5050 and Rs.5275 in year 2000/2001, 2002/2003, 3003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008 and 2008/09 respectively. Year-end price is shown in the Fig. 4.1. Figure shows that closing price is in fluctuating trend. The price was increasing trend till

2004/05 and it is decreased in FY 2005/06 and 2006/07 then increased up to 2008/09. Annual dividend amounts gained by shareholders of NABIL are given in the same table. The dividend amounts was increasing trend till 2003/04 and it is decreased in FY 2004/05 and 2005/06 then increasing trend up to 2008/09.

Table 4.1

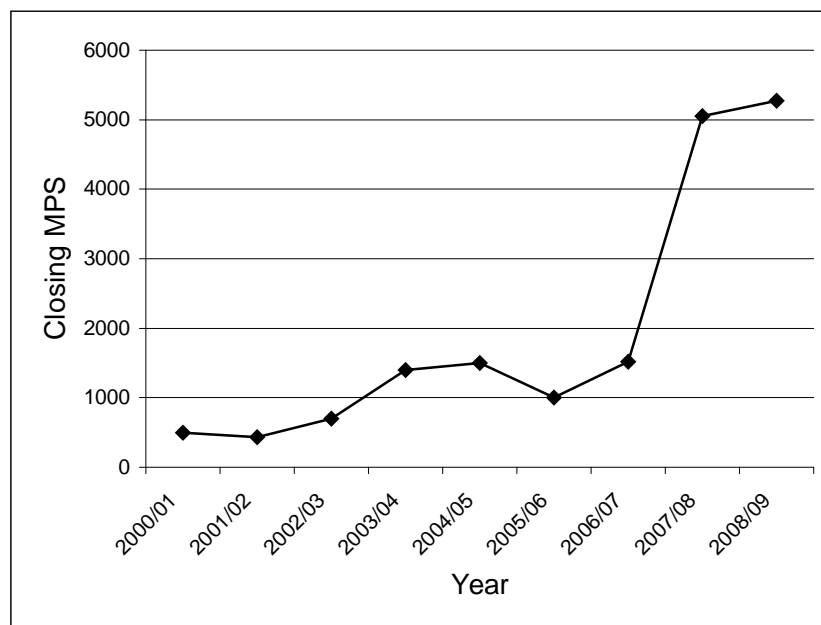
MPS and Dividend Data of NABIL

FY	High MPS	Low MPS	Closing MPS	DPS (Cash)	DPS (Stock)
2000/01	925	490	500	0	20
2001/02	675	415	430	30	
2002/03	762	404	700	50	
2003/04	1495	700	1400	55	
2004/05	2301	1310	1500	40	
2005/06	1005	705	1000	50	
2006/07	1515	1000	1505	65	
2007/08	5050	4800	5050	50	40
2008/09	5275	5000	5275	65	

Source: Nepal Stock Exchange Trading Report

Figure 4.1

Year-end Price Movement of NABIL



4.1.1.2 Realized Returns (R), Standard Deviation (σ) and Expected Returns (\bar{R})

To calculate realized rate of return, year-end price and dividend amounts are used. Table 4.2 shows the calculation of yearly-realized returns, expected return and standard deviations of returns. Expected return of the common stock of NABIL is 0.654. Standard deviation of NABIL is 1.23 and C.V. is 1.88.

Table 4.2

Realized Rate of Returns, Expected Returns and S.D. of C.S. of NABIL

FY	Closing MPS (Rs.)	Cash Dividend (Rs.)	Stock dividend %	Total Dividend	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2000/01	500	0	20	86	-	-	-
2001/02	430	30	-	30	-0.08	-0.734	0.53875
2002/03	700	50	-	50	0.74	0.086	0.00739
2003/04	1400	55	-	55	1.07	0.416	0.17305
2004/05	1500	40	-	40	0.10	-0.554	0.30691
2005/06	1000	20	-	20	-0.32	-0.974	0.94867
2006/07	1505	30	-	30	0.535	-0.119	0.01416
2007/08	5050	50	40	2160	3.79	3.136	9.83449
2008/09	5275	65	-	65	0.057	-0.597	0.35640
					$\Sigma R = 5.892$		$\Sigma (R - \bar{R})^2 = 12.179$

Source: Nepal Stock Exchange Trading Report

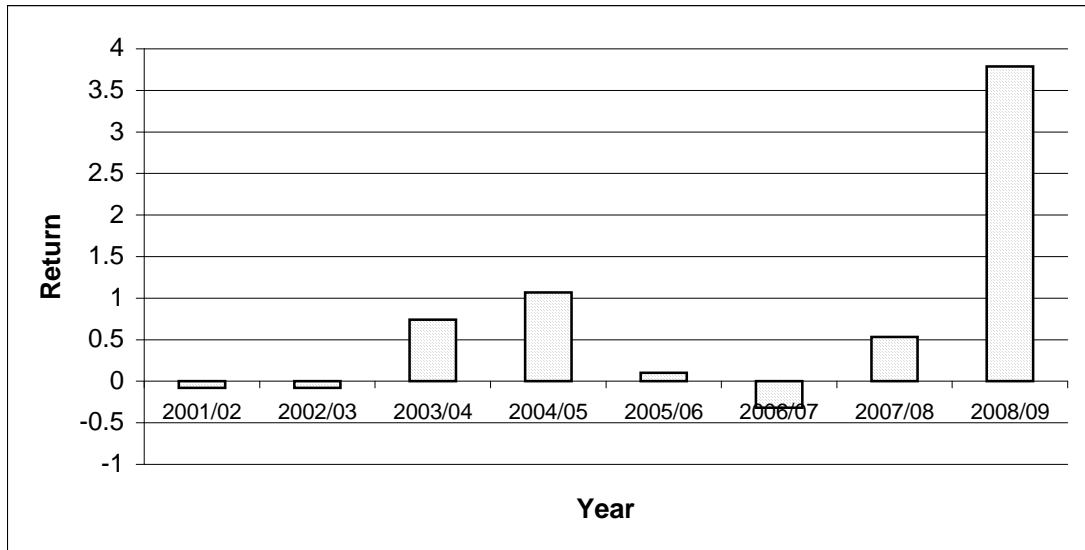
We have,

$$\text{Expected } (\bar{R}) = \frac{\Sigma R}{n} = \frac{5.892}{9} = 0.654$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\Sigma (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{12.179}{9 - 1}} = \sqrt{1.52} = 1.23$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{1.23}{0.654} = 1.88$$

Figure 4.2
Annual Return of Common Stock of NABIL



4.1.2 Nepal Investment Bank Limited (NIBL)

4.1.2.1 Data

Market price, dividend records of common stock of NIBL are shown in Table 4.3, year-end price is shown in the Fig. 4.3. Price is maximum (Rs.2450) in year 2008/2009 reached at its lowest (Rs. 600) in year 2001/2002. Similarly closing price are Rs.625, Rs.822, Rs.1150, Rs.940, Rs.800, Rs.1729 and Rs.2450 in year 2000/2001, 2002/2003, 2004/2005, 2005/2006, 2006/2007, 2007/2008 and 2008/2009 respectively. Year-end price is shown in the Fig. 4.3. Figure shows that closing price is in fluctuating trend. The price was increasing trend till 2003/04 and it is decreased in FY 2004/05 and 2005/06 then increased up to 2008/09. Annual dividend amounts gained by shareholders of NIBL are given in the same table. The dividend amount was highest in 2003/04 and then decreasing trend up to 2008/09.

Table 4.3

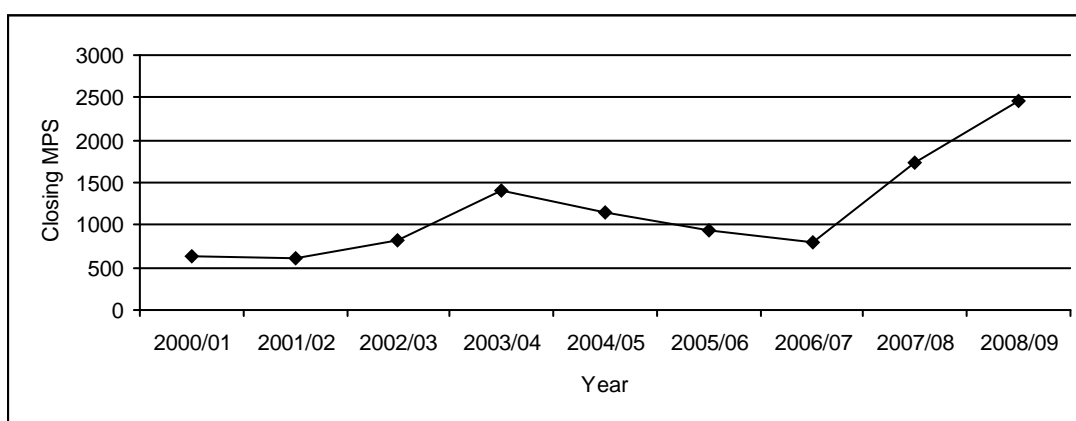
MPS and Dividend Data of NIBL

FY	High MPS	Low MPS	Closing MPS	DPS (Cash)	DPS (Stock)
2000/01	680	500	625	0	-
2001/02	760	470	600	0	30
2002/03	980	551	822	30	-

2003/04	1415	822	1401	50	-
2004/05	2730	1080	1150	25	-
2005/06	942	745	940	20	-
2006/07	1430	760	800	15	-
2007/08	1729	1650	1729	20	25
2008/09	2450	1960	2450	15	-

Source: Nepal Stock Exchange Trading Report

Figure 4.3
Year-end Price Movement of NIBL



4.1.2.2 Realized Returns (R), Standard Deviation (†) and Expected Returns (\bar{R})

To calculate realized rate of return, year-end price and dividend amounts are used. Table 4.4 shows the calculation of yearly-realized returns, expected return and standard deviations of returns. Expected return of the common stock of NIBL is 0.424. Standard deviation of NIBL is 0.624 and C.V. is 1.47.

Table 4.4

Realized Rate of Returns, Expected Returns and S.D. of C.S. of NIBL

FY	Closing MPS (Rs.)	Cash Dividend (Rs.)	Stock dividend %	Total Dividend	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2000/01	625	0	-	-			
2001/02	600	0	30	246.6	0.35	-0.074	0.00547
2002/03	822	50	-	50	0.45	0.026	0.00067

2003/04	1401	30	-	30	0.74	0.316	0.09985
2004/05	1150	25	-	25	-0.16	-0.584	0.34105
2005/06	940	0	-	-	0.18	-0.244	0.05953
2006/07	800	30	-	30	-0.11	-0.534	0.28515
2007/08	1729	20	25	632.5	1.95	1.526	2.32867
2008/09	2450	15	-	15	0.42	-0.004	0.000016
					$\Sigma R = 3.82$		$\Sigma (R - \bar{R})^2 = 3.12$

Source: Nepal Stock Exchange Trading Report

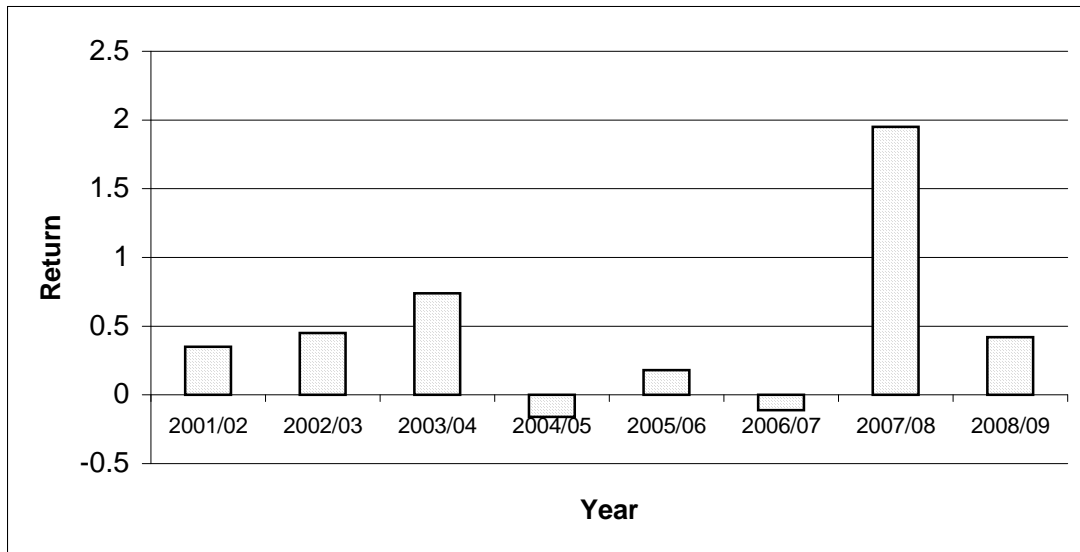
We have,

$$\text{Expected } (\bar{R}) = \frac{\Sigma R}{n} = \frac{3.82}{9} = 0.424$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\Sigma (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{3.12}{9 - 1}} = \sqrt{0.39} = 0.624$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.624}{0.424} = 1.47$$

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, dividend records of common stock of BOKL are shown in table 4.5, year-end price movement is shown 2008/09. Market price is maximum in FY 2008/09.

From the table 4.5, it is clear that the closing MPS of BOKL is in fluctuating trend. Price is maximum (Rs.2350) in Year 2008/09 and minimum (Rs.124) in year 2001/02. Similarly closing price are Rs.285, Rs.998, Rs.850, Rs.254, Rs.430, Rs. 1375 and Rs.2350 in year 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/08 and 2008/2009 respectively. Year-end price is shown in the Fig. 4.5. Figure shows t3/04 and it is decreased in FY 2004/05 and 2005/06 then increased up to 2008/09. Annual dividend amounts gained by shareholders of BOKL are given in the same table. The dividend amounts were fluctuating trend from 2002/03 to 2008/09.

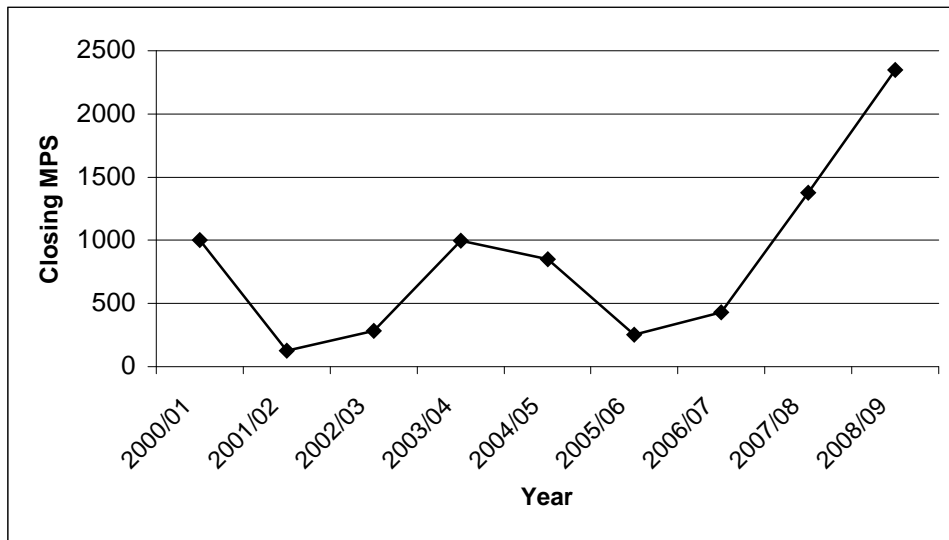
Table 4.5

MPS and Dividend Data of BOKL

FY	High MPS	Low MPS	Closing MPS	DPS (Cash)	DPS (Stock)
2000/01	1000	261	998	5	
2001/02	185	101	124	10	10
2002/03	330	122	285	10	
2003/04	1000	261	998	5	
2004/05	1800	740	850	10	
2005/06	850	225	254	0	
2006/07	472	280	430	30	
2007/08	1375	1250	1375	15	
2008/09	2350	2250	2350	30	

Source: Nepal Stock Exchange Trading Report

Figure 4.5
Year-end Price Movement of BOKL



4.1.3.2 Realized Returns (R), Standard Deviation (\dagger) and Expected Returns (\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 4.6, shows the

calculation of yearly-realized returns, expected return and standard deviations of returns. Expected return of the common stock of BOKL is 0.62. Standard deviation of BOKL is 1.19 and C.V. is 1.91.

Table 4.6

Realized Rate of Returns, Expected Returns and S.D. of BOKL

FY	Closing MPS (Rs.)	Cash Dividend (Rs.)	Stock Dividend %	Total Dividend	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2000/01	998	0	-	-	-		
2001/02	124	0	10	28.5	-0.90	-1.52	2.3104
2002/03	285	10	-	10	1.37	0.75	0.5625
2003/04	998	5	-	5	2.51	1.89	3.5721
2004/05	850	10	-	10	-0.14	-0.76	0.5776
2005/06	254	0	-	-	-0.70	-1.32	1.7424
2006/07	430	30	-	30	0.56	-0.06	0.0036
2007/08	1375	15	-	15	2.23	1.61	2.5921
2008/09	2350	30	-	30	0.73	0.11	0.0121
					$\Sigma R = 5.66$		$\Sigma (R - \bar{R})^2 = 11.37$

Source: Nepal Stock Exchange Trading Report

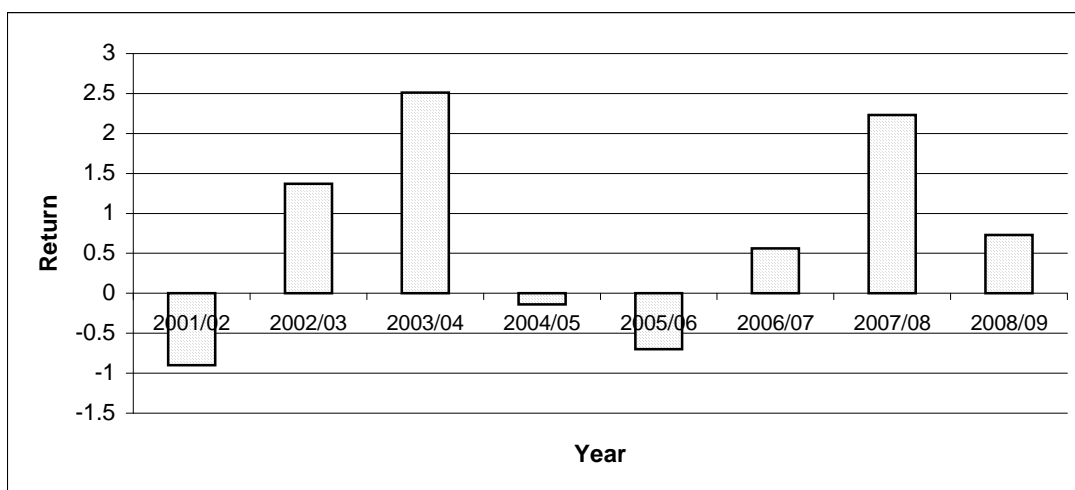
We have,

$$\text{Expected } (\bar{R}) = \frac{\Sigma R}{n} = \frac{5.66}{9} = 0.62$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\Sigma (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{11.37}{9 - 1}} = \sqrt{1.42} = 1.19$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{1.19}{0.62} = 1.91$$

Figure 4.6
Annual Return of Common Stock of BOKL



4.1.4 Himalayan Bank Limited (HBL)

4.1.4.1 Data

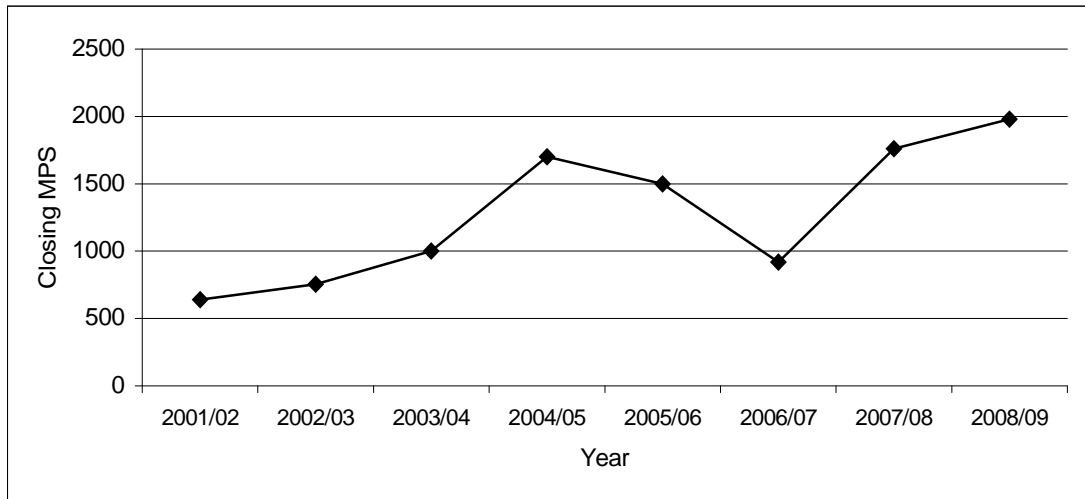
Table 4.7

MPS and Dividend Data of HBL

FY	High MPS	Low MPS	Closing MPS	DPS (Cash)	DPS (Stock)
2000/01	715	517	640	50	30
2001/02	775	625	755	110	10
2002/03	1200	700	1000	50	25
2003/04	1780	1000	1700	50	20
2004/05	2726	1325	1500	27.5	20
2005/06	1490	1430	1350	7.5	-
2006/07	1181	855	920	25	-
2007/08	1760	1600	1760	13.2	15
2008/09	1980	1950	1980	25	-

Source: Nepal Stock Exchange Trading Report

Figure 4.7
Year-end Price Movement of HBL



Market price and dividend records of common stock of HBL are shown in Table 4.7. MPS of HBL is very high in FY 2008/09. Year-end price movement of HBL is shown in the fig. 4.7. Annual dividend amounts gained by shareholders of HBL are given in the same table. The closing MPS is maximum (Rs.1980) in FY 2008/09 and lowest (Rs.640) in FY 2000/01. Similarly closing price are Rs.755, 007/2008 and 2008/2009 respectively. Year-end price is shown in the Fig. 4.7. Figure shows that closing price is in fluctuating trend. The price was increasing trend till 2003/04 and it is decreased in FY 2004/05, 2005/06 and 2006/07 then increased up to 2008/09. Annual dividend amounts gained by shareholders of HBL are given in the same table. The dividend amounts were fluctuating trend from 2000/01 to 2008/09.

4.1.4.2 Realized Returns (R), Standard Deviation (σ) and Expected Returns (\bar{R})

Year-end price and dividend amounts are used to calculate yield and capital gain yield is added to find return for each year. Table 4.8, shows the calculation of yearly-realized returns, expected return and standard deviations of returns. Expected return of the common stock of HBL is 0.30. Standard deviation of HBL is 0.670 and C.V. is 2.23.

Table 4.8

Realized Rate of Returns, Expected Returns and S.D. of HBL

FY	Closing MPS (Rs.)	Cash Dividend (Rs.)	Stock dividend %	Total Dividend	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2000/01	640	50	30	276.5	-	-	
2001/02	755	110	10	210	0.50	0.2	0.04
2002/03	1000	50	25	475	0.95	0.65	0.4225
2003/04	1700	50	20	350	1.05	0.75	0.5625
2004/05	1500	27.5	20	297.5	-0.057	-0.357	0.127449
2005/06	1350	7.5	-	7.5	-0.464	-0.764	0.583696
2006/07	920	25	-	25	-0.664	-0.964	0.929296
2007/08	1760	13.2	15	310.2	1.25	0.95	0.9025
2008/09	1980	25	-	25	0.13	-0.17	0.0289
					$\Sigma R = 2.695$		$\Sigma (R - \bar{R})^2 = 3.60$

Source: Nepal Stock Exchange Trading Report

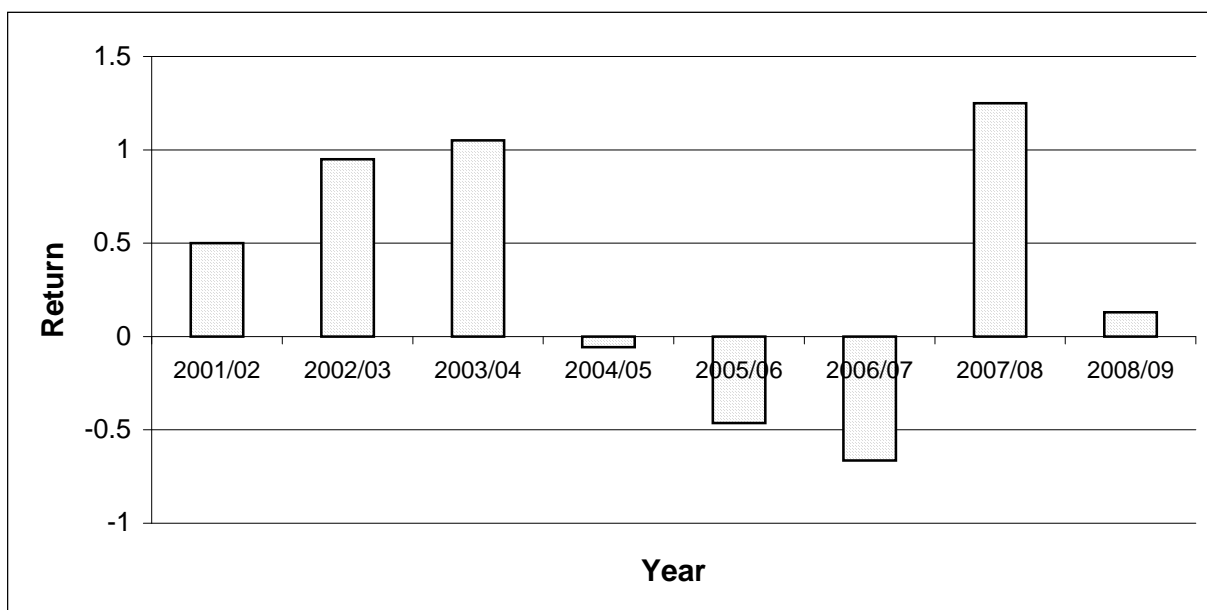
We have,

$$\text{Expected } (\bar{R}) = \frac{\Sigma R}{n} = \frac{2.695}{9} = 0.30$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\Sigma (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{3.60}{9 - 1}} = \sqrt{0.45} = 0.670$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.670}{0.30} = 2.23$$

Figure 4.8
Annual Return of Common Stock of HBL



4.1.5 Standard Chartered Bank Nepal Limited

4.1.4.1 Data

Market price and dividend records of common stock of SCBL are shown in Table 4.9. MPS of SCBL is very high in FY 2008/09. Year-end price movement of SCBL is shown in the fig. 4.9. Annual dividend amounts gained by shareholders of SCBL are given in Rs.1162, Rs.1985, Rs.2144, Rs.2000, Rs.2345 and Rs. 6830 in year 2000/2001, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007 and 2007/2008 respectively. Year-end price is shown in the Fig. 4.9. Figure shows that closing price is in fluctuating trend. The price was increasing trend till 2004/05 and it is decreased in FY 2005/06 and 2006/07 then increased up to 2008/09. Annual dividend amounts gained by shareholders of SCBL are given in the same table. The dividend amounts were constant from 2003/04 to 2006/07 then increasing trend up to 2008/09.

Table 4.9

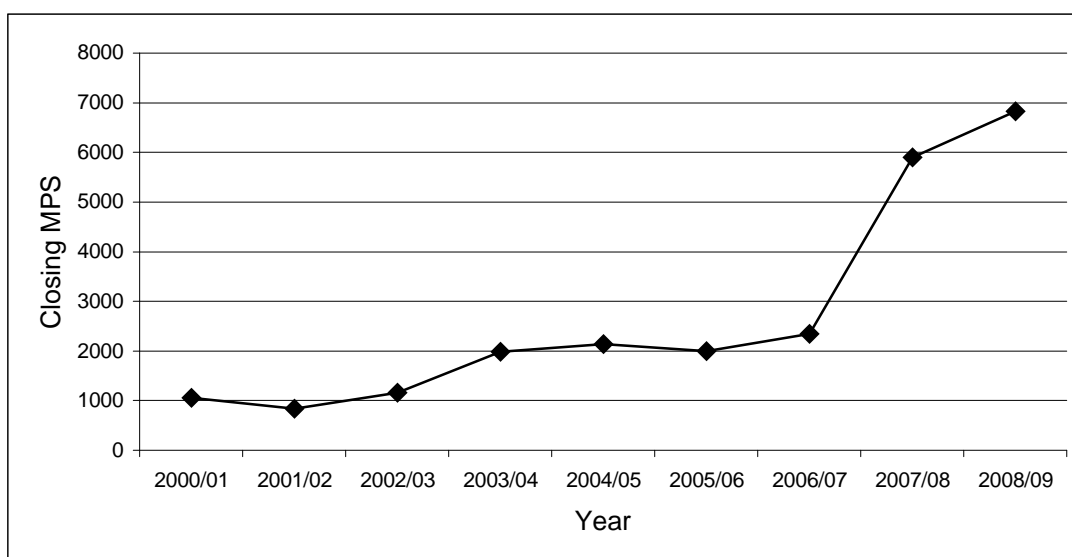
MPS Dividend Data of SCBL

FY	High MPS	Low MPS	Closing MPS	DPS (Cash)	DPS (Stock)
2000/01				Rs.1162	
2002/03				Rs.1985	
2003/04				Rs.2144	
2004/05				Rs.2000	
2005/06				Rs.2345	
2006/07				Rs.2345	
2007/08				Rs.6830	
2008/09					

2000/01	1130	605	1050	90	-
2001/02	1200	705	840	120	-
2002/03	1338	775	1162	80	10
2003/04	2050	1181	1985	100	-
2004/05	3111	1680	2144	100	-
2005/06	2055	1875	2000	100	-
2006/07	3350	1553	2345	110	-
2007/08	5900	5800	5900	110	50
2008/09	6830	6500	6830	110	-

Source: Nepal Stock Exchange Trading Report.

Figure 4.9
Year-end Price Movement of SCBL



4.1.5.2 Realized Returns (R), Standard Deviation (\dagger) and Expected Returns (\bar{R})

Year-end price and dividend amounts are used to calculate yield and capital gain yield is added to find return for each year. Table 4.10, shows the calculation of yearly-realized returns, expected return and standard deviations of returns. Expected return of the common stock of SCBL is 0.54. Standard deviation of SCBL is 0.95 and C.V. is 1.77.

Table 4.10**Realized Rate of Returns, Expected Returns and S.D. of SCBL**

FY	Closing MPS (Rs.)	Cash Dividend (Rs.)	Stock dividend %	Total Dividend	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2000/01	1050	90	-	90		-	
2001/02	840	120	-	120	-0.09	-0.63	0.3969
2002/03	1162	80	10	278.5	0.71	0.17	0.0289
2003/04	1985	100	-	100	0.79	0.25	0.0625
2004/05	2144	100	-	100	0.13	-0.41	0.1681
2005/06	2000	100	-	100	-0.02	-0.56	0.3136
2006/07	2345	100	-	100	0.22	-0.32	0.1024
2007/08	5900	110	50	3525	3.01	2.47	6.1009
2008/09	6830	110	-	110	0.17	-0.37	0.1369
					$\sum R = 4.92$		$\sum (R - \bar{R})^2 = 7.31$

Source: Nepal Stock Exchange Trading Report

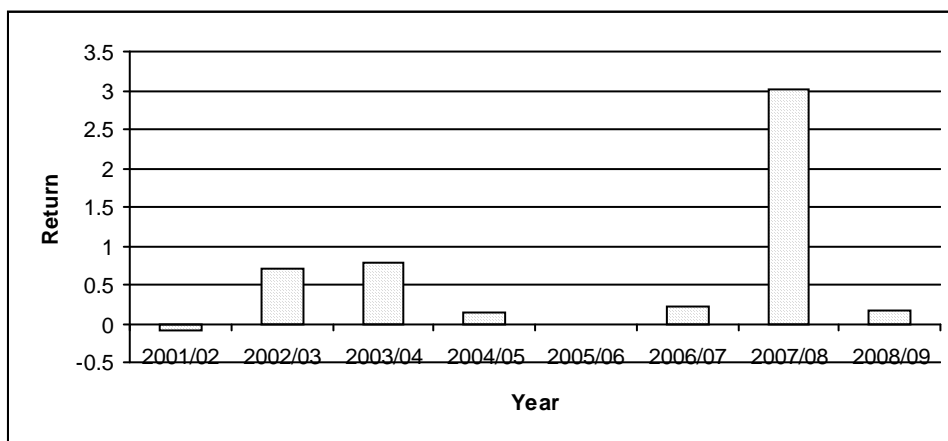
We have,

$$\text{Expected } (\bar{R}) = \frac{\sum R}{n} = \frac{4.92}{9} = 0.54$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{7.31}{9 - 1}} = \sqrt{0.91} = 0.95$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.95}{0.54} = 1.77$$

Figure 4.10
Annual Return of Common Stock of SCBL



4.1.6 Everest Bank Limited (EBL)

4.1.6.1 Data

Market price and dividend records of common stock of EBL are shown in Table 4.11. MPS of EBL is very high in FY 2008/09. Year-end price movement of EBL is shown in the fig. 4.11. Annual dividend amounts gained by shareholders of EBL are given in the same table. The closing MPS is maximum (Rs.3132) in FY 2008/09, 2003/2004, 2004/2005, 2005/2006, 2006/2007 and 2007/2008 respectively. Year-end price is shown in the Figure 4.11. Figure shows that closing price is in fluctuating trend.

The price was increasing trend till 2003/04 and it is decreased in FY 2004/05 and 2005/06 then increased up to 2008/09. Annual dividend amounts gained by shareholders of EBL are given in the same table. The dividend amounts was not distributed up to 2006/07 and distributed in FY 2007/08 and 2008/09.

Table 4.11

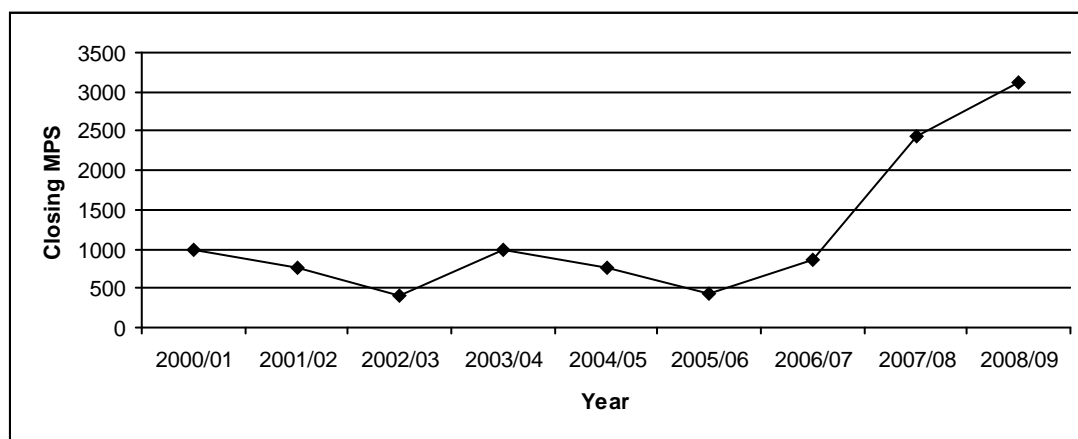
MPS Dividend Data of EBL

FY	High MPS	Low MPS	Closing MPS	DPS (Cash)	DPS (Stock)
2000/01	980	400	980	0	-
2001/02	1850	680	750	0	20
2002/03	440	184	407	0	-

2003/04	980	400	980	20	-
2004/05	1850	670	750	20	20
2005/06	740	325	430	0	-
2006/07	905	625	870	20	-
2007/08	2430	2300	2430	20	30
2008/09	3132	3025	3132	20	-

Source: Nepal Stock Exchange Trading Report

Figure 4.11
Year-end Price Movement of EBL



4.1.6.2 Realized Returns (R), Standard Deviation (†) and Expected Returns (\bar{R})

Year-end price and dividend amount expected return and standard deviations of returns. Expected return of the common stock of EBL is 0.67. Standard deviation of EBL is 1.03 and C.V. is 1.54.

Table 4.12

Realized Rate of Returns, Expected Returns and S.D. of C.S. of EBL

FY	Closing MPS (Rs.)	Cash Dividend (Rs.)	Stock dividend %	Total Dividend	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2000/01	980		-	-	-	-	
2001/02	750		20	81.4	-0.15	-0.82	0.6724
2002/03	407		-	-	1.21	0.54	0.2916
2003/04	980		-	-	1.41	0.74	0.5476
2004/05	750		20	86	-0.14	-0.81	0.6561
2005/06	430		-	-	-0.43	-1.1	1.21
2006/07	870		-	-	1.01	0.34	0.1156
2007/08	2430	20	30	959.6	2.89	2.22	4.9284

2008/09	3132	20	-	20	0.29	-0.38	0.1444
					$\Sigma R = 5.98$		$\Sigma (R - \bar{R})^2 = 7.36$

Source: Nepal Stock Exchange Trading Report

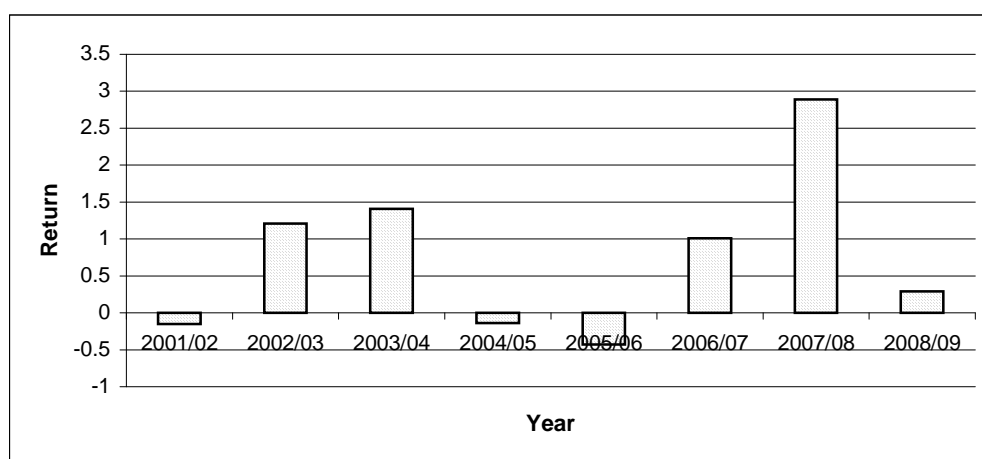
We have,

$$\text{Expected } (\bar{R}) = \frac{\Sigma R}{n} = \frac{6.09}{9} = 0.67$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\Sigma (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{8.56}{9 - 1}} = \sqrt{1.07} = 1.03$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{1.03}{0.67} = 1.54$$

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 perfations of each bank for the year 2000/01 to 2008/09 is presented in table 4.13.

Table 4.13

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

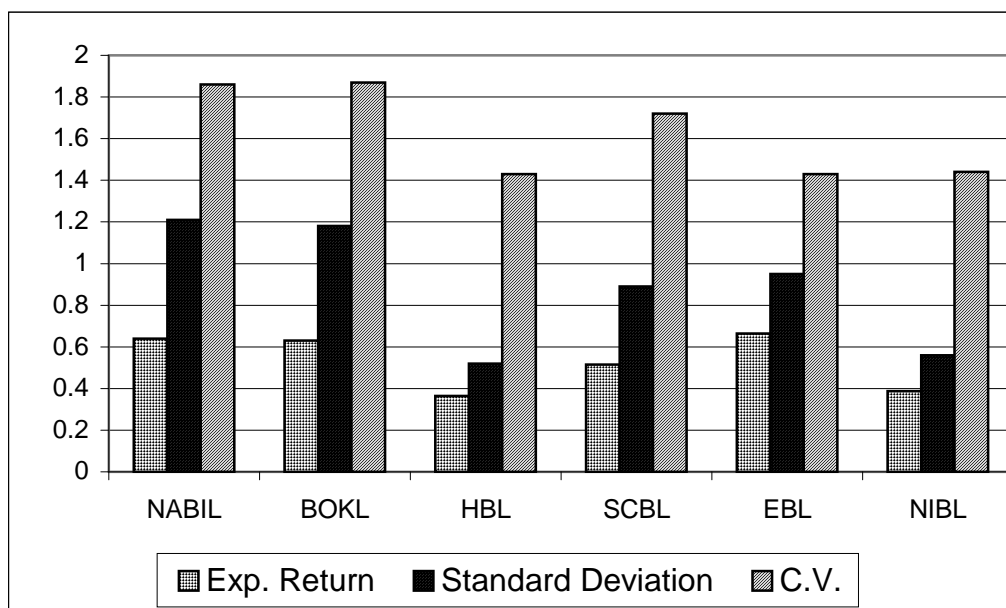
Bank	Expected Return	Standard Deviation	C.V.	Remarks
NIBL	0.654	1.23	1.88	Higher C.V., lowest return
NABIL	0.424	0.62	1.47	Lower C.V., lower return
BOKL	0.620	1.19	1.91	Higher C.V., higher return

HBL	0.300	0.67	2.23	Higher C.V., lowest return
SCBL	0.540	0.95	1.77	Higher C.V., lowest return
EBL	0.670	1.03	1.54	Lower C.V., higher return

Investor can get highest return from investment in common stock of EBL among the six banks and lowest from Himalayan Bank limited. Standard Chartered Bank has least unsystematic risk but BOKL has nearly equal unsystematic risk and expected return. 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 measures risk per unit return of a stock. So, standard Deviation and Expected Return are and be alert with C.V. From below figure 4.13 we have 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 the C.V. provided that other factor remaining same. But here other factor did not remain same.

Figure 4.13

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



On the basis of the market capitalization, this is the total market value at the specific time period of the company, industry and market. The end of year 2008/09, sizes of each bank are presented in table 4.14 and figure 4.14 respectively.

Table 4.14

Market Capitalization of Banks

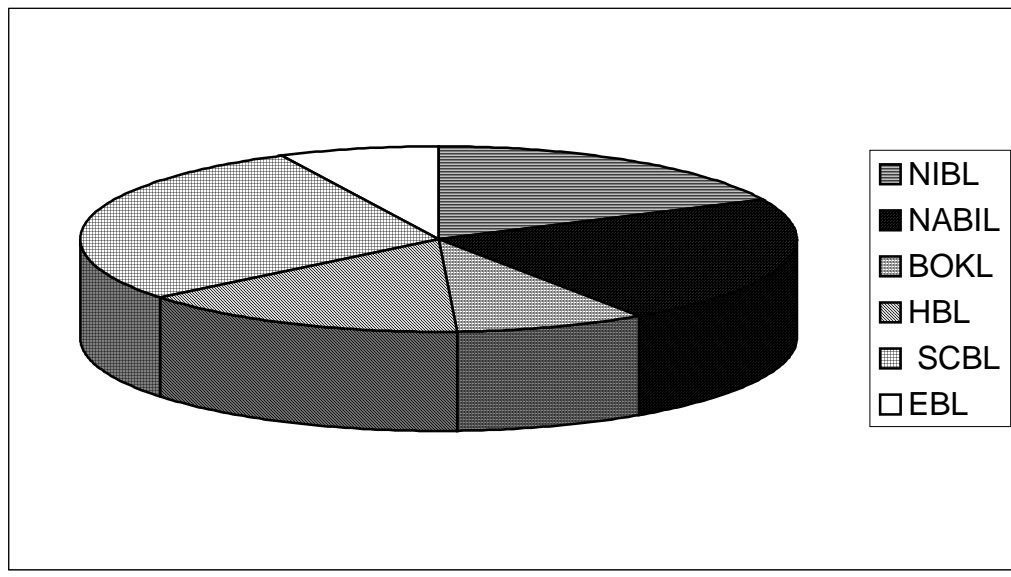
(Rs. In Million)

Market capitalization as on 15 th July 2009	
Banks	Market Capitalization
NIBL	29495.92
NABIL	36259.98
BOKL	14173.82
HBL	24081.05
SCBL	46497.54
EBL	11838.96
Total	162347.27

Source: Nepal Stock Exchange Annual Report

Figure 4.14

Market Capitalization of Selected Banks under Study at 15th July 2009



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 2000/01 to 2008/09. Table No.4.15 shows the comparative movement of market capitalization of six banks, NIBL, NABIL, BOKL, HBL, SCBL and EBL.

Table 4.15

Year wise Comparative Movement of Market Capitalization

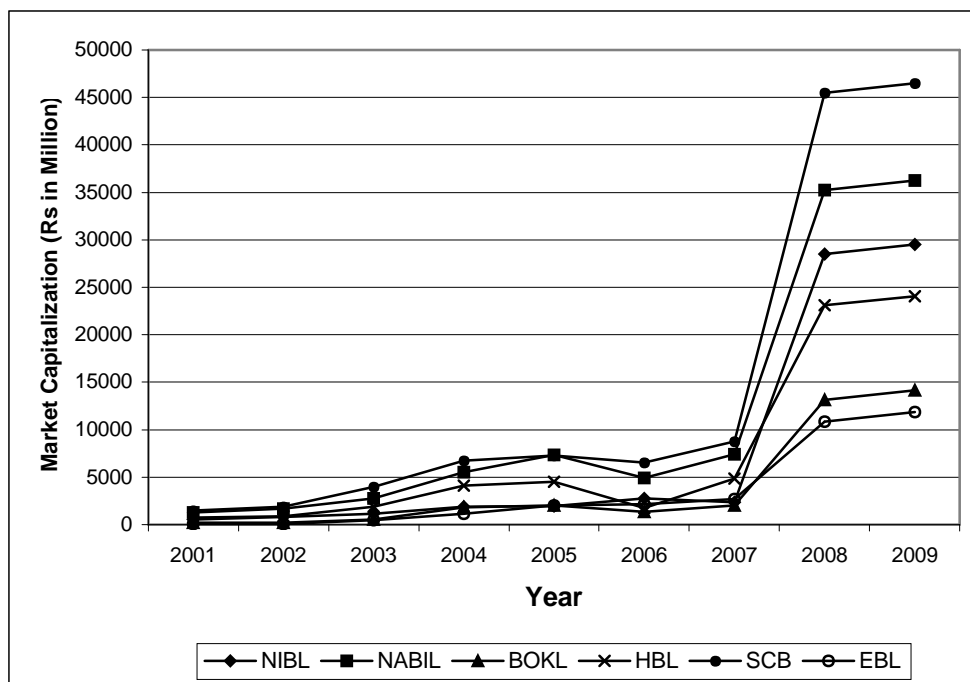
(Rs. In Million)

Banks	Years								
	15 July 2001	15 July 02	15 July 03	15 July 04	15 July 05	15 July 06	15 July 07	15 July 08	15 July 09
NIBL	563	810	1112.58	1896.26	1945.66	2775.75	2362.34	28494.91	29495.92
NABIL	1308.50	1689.04	2749.60	5499.20	7374.75	4909.95	7389.47	35258.97	36259.98
BOKL	223.20	223.20	513	1796.40	1989	1367.56	1993.40	13172.81	14173.82
HBL	768.00	906.00	1920.0	4080	4500	1745	4830.0	23080.04	24081.05
SCBL	1500	1890	3945.56	6740.04	7279.93	6537.47	8785.32	45496.53	46497.54
EBL	80.12	88.32	488.40	1176	1989	2142	2704.50	10837.95	11838.96

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.72.0 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. 1100 million is equal to 0.30 percent.

Table 4.16

Market Capitalization of Each Industry at July 15, 2009

Industry	Market Capitalization (Rs. In Million)	Percent
Banking	260000.0	72.0
Manufacturing and processing	7500.0	2.08
Hotel	25800.0	7.15
Trading	1100.0	0.30
Finance and insurance	48800.0	13.52
Others	17900.0	4.95
Total	361100	100

Source: Nepal Stock Exchange

Figure 4.16

Market Capitalization of Each Industry at 15 July 2009

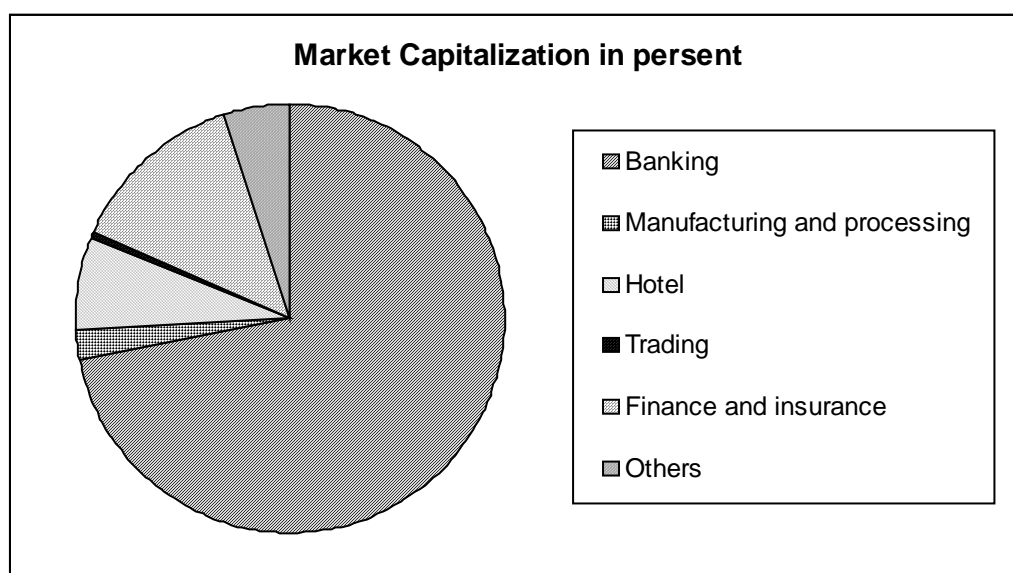


Table 4.17

Industry wise Market Capitalization

(Rs. In million)

Industry	July 02	July 03	July 04	July 05	July 06	July 07	July 08	July 09
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Banking	5667.55	6958.97	13632.42	28391.09	31235.21	21436.72	40119.88	260000.0
Manufacturing and Processing	2507.84	2611.38	3925.81	5201.56	4657.29	4731.30	5024.83	7500.0
Hotel	1705.67	1535.93	2309.90	3528.55	2904.62	2550.61	2308.38	25800.0
Trading	677.20	654.54	642.04	602.29	552.36	488.02	635.88	1100.0
Finance and Insurance	1991.84	2215.82	255.10	4235.61	4484.22	4949.70	7632.23	48800.0
Others	147.61	200.00	420.29	432.46	249.88	1084.03	5644.69	17900.0

Source: Nepal Stock Exchange Trading Report.

Figure 4.17
Industry wise Movement of Market Capitalization

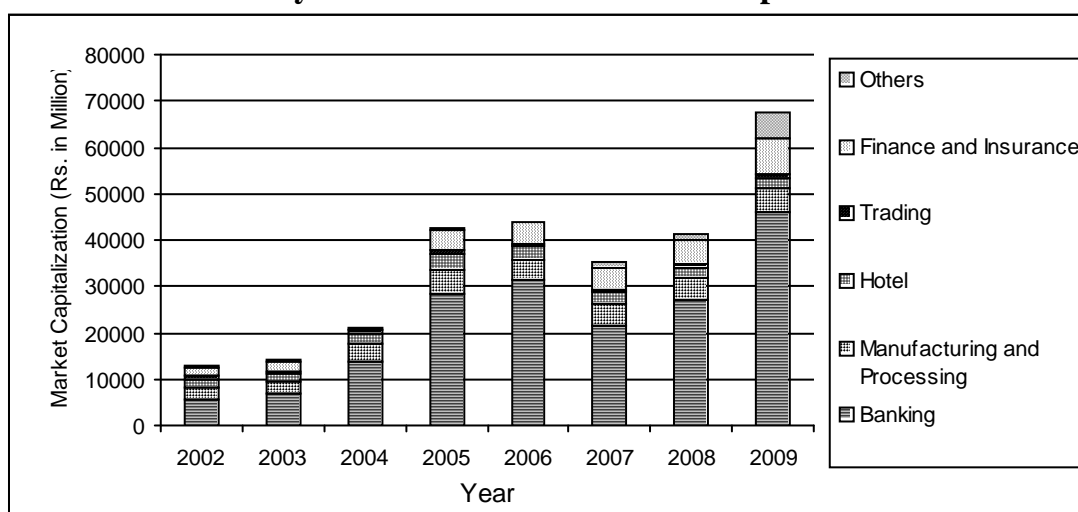


Table 4.18

Industry-wise NEPSE Index at Closing Date of FY 200/01 to 2008/09

Year/ Industry	Banking	Mfg. and Pro.	Hotel	Trading	Fin. and Ins.	Others	Market
2000/01	167.20	217.05	277.47	156.95	172.18	228.26	348.43
2001/02	194.95	226.65	244.49	160.58	176.32	221.59	227.54
2002/03	219.44	229.83	242.52	123.99	195.68	376.10	204.86
2003/04	397.17	340.59	346.15	123.74	305.98	308.46	222.04
2004/05	379.38	349.31	291.34	115.55	318.67	190.90	286.67
2005/06	219.35	273.67	216.51	102.2	288.75	77.34	386.86
2006/07	199.90	250.13	196.68	94.56	224.39	48.56	683.95
2007/08	231.97	255.58	184.41	95.01	216.80	142.65	963.36

2008/09	304.64	276.50	178	123.20	228.39	347.65	661.27
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Source: Nepal Stock Exchange Trading Report

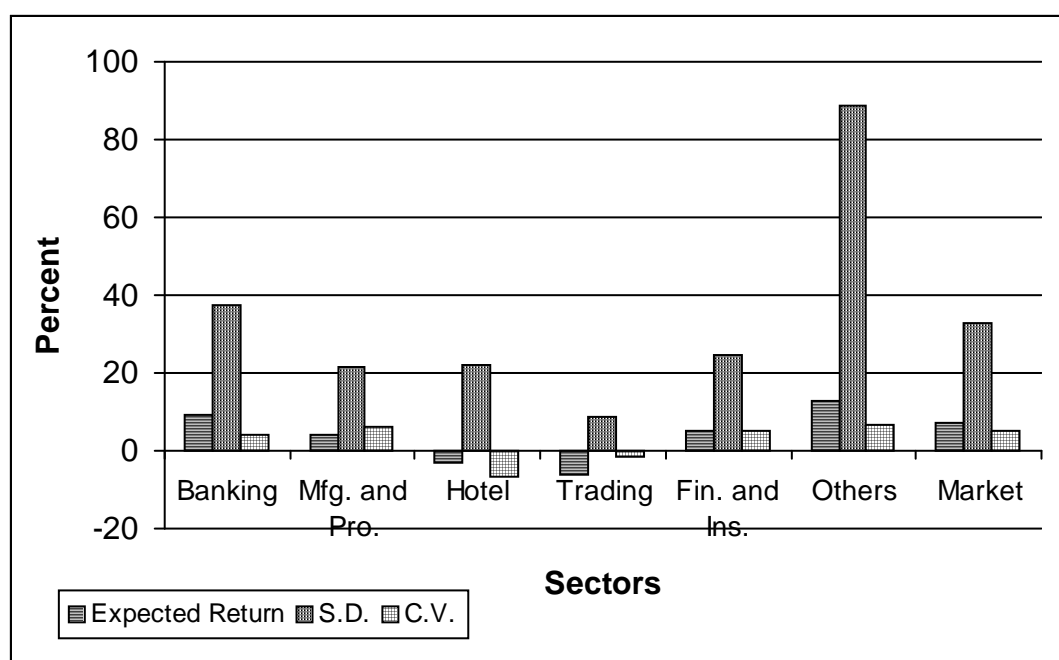
Table 4.19

Expected Return, S.D. of Return and C.V. of Industries

Industry	Expected Return	S.D.	C.V.	Remarks
Banking	0.1133	0.3320	2.93	Higher return
Mfg. and Pro.	0.04	0.1870	4.67	Higher C.V.
Hotel	-0.033	0.1904	-5.77	Negative C.V
Trading	-0.018	0.1467	-8.15	Negative C.V.
Fin. and Ins.	0.049	0.2151	4.39	Higher C.V.
Others	0.27	0.8791	3.25	Higher C.V.
Market	0.1266	0.3597	2.841	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 NEPSE index. Year-end industry-wise NEPSE index is given in Table 4.18. Detail of calculation of each variable of each industry is shown in Appendix (A –G).

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



Expected return of the portfolio of others industries lies on the first position and that banking industries lies on the second position. The expected return of banking industry is 11.33%. In comparison with rest industries ‘manufacturing and processing industries’ possesses highest coefficient of variation

4.1.9 Comparison with Market

4.1.9.1 Market Risk and Return

There is only one stock market in Nepal, known as Nepal stock exchange shortly NEPSE. Overall market movement of the country is represented 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.**

Year	NEPSE INDEX (NI)	$R_m = \frac{NI_t - NI_{t-1}}{NI_{t-1}}$	$(R_m - \bar{R}_m)$	$(R_m - \bar{R}_m)^2$
2000/01	348.43			
2001/02	227.54	-0.346	-0.4726	0.223351
2002/03	204.86	-0.099	-0.2256	0.050895
2003/04	222.04	0.083	-0.0436	0.001901
2004/05	286.67	0.291	0.1644	0.027027
2005/06	386.86	0.349	0.2224	0.049462
2006/07	683.95	0.767	0.6404	0.410112
2007/08	963.36	0.408	0.2814	0.079186
2008/09	661.27	-0.313	-0.4396	0.193248
Total		1.14	0.1272	1.035182

Source: Nepal Stock Exchange Trading Report

We have,

$$\text{Expected Return } (\bar{R}_m) = \frac{\sum R_m}{n} = \frac{1.14}{9} = 0.1266$$

$$\text{S.D. } (\sigma_m) = \sqrt{\frac{\sum (R_m - \bar{R}_m)^2}{n-1}} = \sqrt{\frac{1.035182}{9-1}} = \sqrt{0.1293} = 0.3597$$

$$\text{C.V.}_m = \frac{\sigma_m}{R_m} = \frac{0.3597}{0.1266} = 2.841$$

NEPSE index is very high in the year 2007/2008 and it has decreased little bit in the year 2008/09. It is lowest i.e. 204.86 in the FY 2002/03. The movement of NEPSE index during the observed year i.e. from 2000/01 to 2008/09 is shown in the figure 4.18. Market return in FY 2007/2008 was very high and is very lower in F/Y 2002/2003.

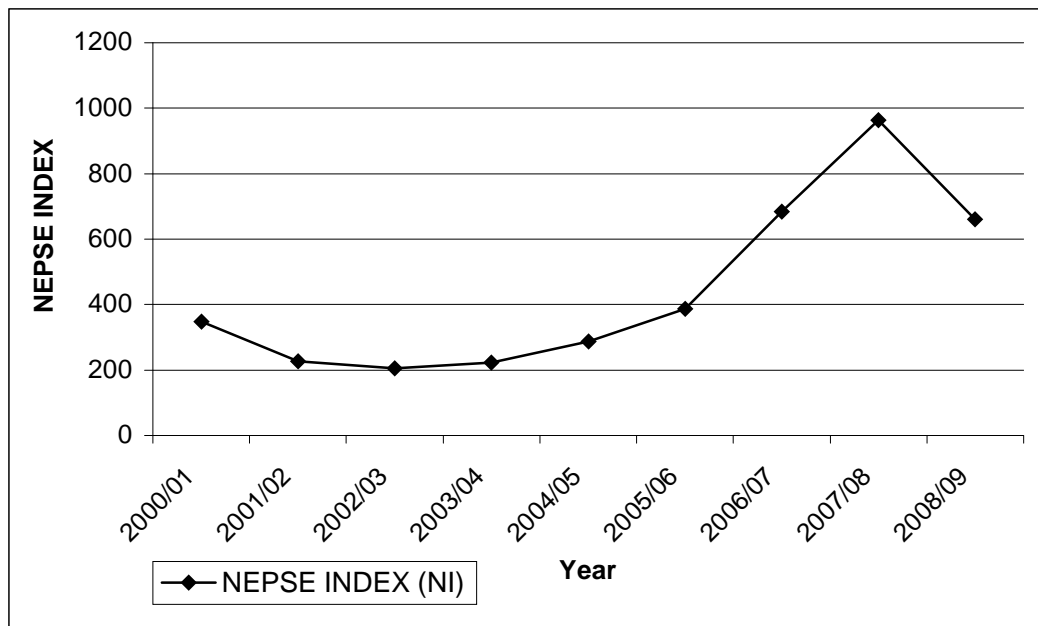
In comparison with market return (12.66%), others industries (27%) and banking industry (11.33%) have higher return. Remaining industries viz. manufacturing & processing industry (4%), hotel industry (-3.3%), trading

industry (-1.8%), finance and insurance industry (4.9%) have lower expected return.

In comparison with market risk (35.97%), manufacturing and processing industry (18.70%), Hotel Industry (19.04%), Trading industry (14.67%) and Finance and insurance industry (21.51%) have lower risk than that of market risk where as banking industry (33.20%) and 'others' industry (87.91%) have higher risk than market risk.

Fig. 4.19

NEPSE Index Movement



4.2 Analysis of Market Sensitivity (Systematic Risk)

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

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

$$\beta_i = \frac{\text{Cov.}(R_i, R_m)}{\sigma_m^2} = \frac{\sigma_i \sigma_m \rho_{im}}{\sigma_m^2}$$

Where, ρ_{im} = Correlation coefficient between market return and stock return.

Hence,

$$\beta_m = \frac{\text{Cov.}(R_m, R_m)}{\sigma_m^2} = \frac{\sigma_m \sigma_m \rho_{mm}}{\sigma_m^2} = 1, \text{ since } \rho_{mm} = 1$$

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

Table 4.21

Equilibrium Return Expected Return and Price Evaluation

Banks	Beta(β_i)	$E(R_i) = R_f + (R_m - R_f) \beta_i$	Expected return (R_i)	Price situation
NIBL	0.44	0.0798	0.424	Under price
NABIL	1.03	0.1291	0.654	Under price
BOKL	0.40	0.076	0.62	Under price
HBL	0.75	0.105	0.30	Under price
SCBL	0.68	0.099	0.54	Under price
EBL	0.83	0.1124	0.67	Under price

Where, R_f = Risk free Rate of Return = 0.0432 i.e. 4.32%¹

R_m = Market return of return = 0.1266 i.e. 12.66%²

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

Since the NIBL, NABIL, EBL and BOKL bank have higher beta coefficient than that of market, the stocks of these banks are supposed to be aggressive. Himalayan Bank and Standard Chartered bank have lower beta coefficient than market, so it is defensive stock. As per beta coefficient, BOKL's stock is highly sensitive with market return. If the market return rises by 1%, BOKL's stock return will rise by 0.40%. Since equilibrium return is less than expected return in case of all sample banks, so there is under price situation.

¹ Risk free rate is based on the weight average Treasury bill rate of 364 days (*Quarterly Economics Bulletin* NRB mid July 2009).

² Expected Market rate of Return is for the year 2000/01 to 2008/09.

4.2.1 Portfolio Analysis

A portfolio 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 100%. Analyses have shown that many Nepalese private investors placed their entire wealth in single asset 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 without 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 the 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 stock B) is analyzed. The following table 4.22 shows the calculation of covariance, correlation and the proportion of stock of the return of the given two stocks.

Table 4.22

Cov (R_A, R_B), Correlation (r_{AE}) and Weights of Stock A and Stock B

Year	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$
2000/01			
2001/02	-0.734	-1.52	1.11568
2002/03	0.086	0.75	0.0645
2003/04	0.416	1.89	0.78624
2004/05	-0.554	-0.76	0.42104
2005/06	-0.974	-1.32	1.28568
2006/07	-0.119	-0.06	0.00714
2007/08	3.136	1.61	5.04896

2008/09	-0.597	0.11	-0.06567
Total			8.6635

We have

$$\text{Cov}(R_A, R_B) = \frac{\sum (R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n - 1} = \frac{8.6635}{8} = 1.082$$

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

$$\begin{aligned} W_A &= \frac{\sigma_B^2 - \text{Cov}(R_A, R_B)}{\sigma_A^2 + \sigma_B^2 - 2\text{Cov}(R_A, R_B)} = \frac{1.416 - 1.082}{1.512 + 1.416 - 2 * 1.082} \\ &= \frac{0.334}{0.764} = 0.437 \end{aligned}$$

$$W_B = 1 - W_A = 1 - 0.437 = 0.563$$

Where

σ_A^2 = Variance of stock of NABIL

σ_B^2 = Variance of stock of BOKL

$\text{Cov}(R_A, R_B)$ = Equivalent representation of covariance of returns between stock of NABIL and BOKL

W_A = Proportion of stock of NABIL.

W_B = Proportion of stock of BOKL

Portfolio return,

$$\begin{aligned} R_p &= W_A R_A + W_B R_B \\ &= 0.437 * 0.654 + 0.563 * 0.62 = 0.634 \end{aligned}$$

Portfolio risk,

$$\begin{aligned} \sigma_p &= \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{Cov}(R_A, R_B)} \\ \sigma_p &= \sqrt{0.190 * 1.512 + 0.316 * 1.416 + 2 * 0.437 * 0.563 * 1.082} \\ \sigma_p &= \sqrt{1.266} \\ &= 1.125 \end{aligned}$$

Correlation:

$$(r_{AB}) = \frac{\text{Cov}(R_A, R_B)}{\sigma_A \cdot \sigma_B} = \frac{1.082}{1.23 * 1.19} = \frac{1.082}{1.463} = 0.739$$

Since $W_A = 0.437$, and $W_B = 0.563$, this result indicates that if the investor wanted to minimize risk, he/she would have to invest 43.7% of his/her capital

in stock A i.e. common stock of NABIL and the 56.3% investment 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 0 so beneficial and vice-versa. Here, in case of portfolio of NABIL'S common 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 HBL (let's suppose stock A) and common stock of SCBL (let's suppose stock B) is analyzed. The following table 4.23, shows the calculation of covariance, correlation and the proportion of stock of the return of the given two stocks.

Table 4.23

Cov ($R_A \cdot R_B$), Correlation (r_{AE}) and Weights of Stock A and Stock B

Year	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$
2000/01			
2001/02	0.2	-0.63	-0.126
2002/03	0.65	0.17	0.1105
2003/04	0.75	0.25	0.1875
2004/05	-0.357	-0.41	0.14637
2005/06	-0.764	-0.56	0.42784
2006/07	-0.964	-0.32	0.30848
2007/08	0.95	2.47	2.3465
2008/09	-0.17	-0.37	0.0629
Total			3.464

We have

$$\text{Cov}(R_A \cdot R_B) = \frac{\sum (R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n - 1} = \frac{3.464}{8} = 0.433$$

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

$$W_A = \frac{\sigma_B^2 - \text{Cov}(R_A, R_B)}{\sigma_A^2 + \sigma_B^2 - 2\text{Cov}(R_A, R_B)} = \frac{0.902 - 0.433}{0.448 + 0.902 - 2 * 0.433}$$

$$= \frac{0.469}{0.484} = 0.969$$

$$W_B = 1 - W_A = 1 - 0.969 = 0.031$$

Where

σ_A^2 = Variance of stock of HBL

σ_B^2 = Variance of stock of SCBL

$\text{Cov}(R_A, R_B)$ = Equivalent representation of covariance of covariance of returns between stock of HBL and SCBL

W_A = Proportion of stock of HBL.

W_B = Proportion of stock of SCBL

Portfolio return,

$$R_p = W_A R_A + W_B R_B$$

$$= 0.969 * 0.30 + 0.031 * 0.54 = 0.307$$

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{Cov}(R_A, R_B)}$$

$$\sigma_p = \sqrt{0.938 * 0.448 + 0.00096 * 0.902 + 2 * 0.969 * 0.031 * 0.433}$$

$$\sigma_p = \sqrt{2.372}$$

$$= 1.54$$

Correlation:

$$(r_{AB}) = \frac{\text{Cov}(R_A, R_B)}{\sigma_A \cdot \sigma_B} = \frac{0.433}{0.670 * 0.95} = \frac{0.433}{0.636} = 0.680$$

Since $W_A = 0.969$, and $W_B = 0.031$, this result indicates that if the investor wanted to minimize risk, he/she would have to invest 96.9% of his/her capital in stock A i.e. common stock of HBL and the lower part 3.1% in stock B i.e. common stock of SCBL.

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 so beneficial and vice-versa. Here, in case

of portfolio of HBL'S common stock and SCBL'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 stock B) is analyzed. The following table 4.24 shows the calculation of covariance, correlation and the proportion of stock of the return of the given two stocks.

Table 4.24

Cov (R_A.R_B), Correlation (r_{AE}) and Weights of Stock A and Stock B

Year	(R _A - \bar{R}_A)	(R _B - \bar{R}_B)	(R _A - \bar{R}_A)(R _B - \bar{R}_B)
2000/01			
2001/02	-0.074	-0.82	0.06068
2002/03	0.026	0.54	0.01404
2003/04	0.316	0.74	0.23384
2004/05	-0.584	-0.81	0.47304
2005/06	-0.244	-1.1	0.2684
2006/07	-0.534	0.34	-0.18156
2007/08	1.526	2.22	3.38772
2008/09	-0.004	-0.38	0.00152
Total			4.257

We have

$$\text{Cov (R}_A\cdot\text{R}_B) = \frac{\sum(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n - 1} = \frac{4.257}{8} = 0.532$$

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

$$\begin{aligned} W_A &= \frac{\sigma_B^2 - \text{Cov (R}_A, \text{R}_B)}{\sigma_A^2 + \sigma_B^2 - 2\text{Cov (R}_A, \text{R}_B)} = \frac{1.06 - 0.532}{0.389 + 1.06 - 2 * 0.532} \\ &= \frac{0.528}{-0.191} = -2.76 \end{aligned}$$

$$W_B = 1 - W_A = 1 + 2.76 = 3.76$$

Where

σ_A^2 = Variance of stock of NIBL

σ_B^2 = Variance of stock of EBL

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

W_A = Proportion of stock of NIBL.

W_B = Proportion of stock of EBL

Portfolio return,

$$R_p = W_A R_A + W_B R_B$$

$$= -2.76 * 0.424 + 3.76 * 0.67 = 1.34$$

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B Cov.(R_A, R_B)}$$

$$\sigma_p = \sqrt{7.61 * 0.389 + 14.13 * 1.06 + 2 * -2.76 * 3.76 * 0.532}$$

$$\sigma_p = \sqrt{6.89}$$

$$= 2.62$$

Correlation:

$$(r_{AB}) = \frac{Cov(R_A, R_B)}{\sigma_A \cdot \sigma_B} = \frac{0.532}{0.624 * 1.03} = \frac{0.532}{0.642} = 0.828$$

Since $W_A = -2.76$, and $W_B = 3.76$ This result indicates that if the investor wanted to minimize risk, he/she would have to disinvest 276% of his/her capital in stock A i.e. common stock of NIBL and the 376% investment in stock B i.e. common stock of EBL.

The main aim of the portfolio construction is to reduce the risk. But the portfolio between the common stock of NIBL and EBL cannot reduce risk significantly with comparison to reduction in return. And the correlation of above two stocks is 0.828, which is positively correlated, so the portfolio construction between these two stocks is not beneficial.

4.2.2 Sharpe's: The Single Index Model (SIM) for Determination of Optimal Portfolio

The desirability of any security is directly related to its excess return to beta ratio: $(\tilde{R}_i - T) / \beta_i$ where \tilde{R}_i is the expected return on security i, T is the return on a riskless asset, and β_i is the expected change in the rate of return on security i associated with a 1 percent change in the market return. Securities are

ranked by excess return to beta (from highest to lowest), the ranking represents the desirability of any security's unique cut-off rate such that all securities with higher ratio of $(\tilde{R}_i - T) / \beta_{im}$ will be included and all securities with lower rates excluded.

Table 4.25

Data Needed to Find Optimal Portfolio (T=4.20)

Security No. i,	Mean return \tilde{R}_i	Excess return $\tilde{R}_i - T$	Beta β_{im}	Unsystematic Risk e^2_i	Excess Return over Beta $(\tilde{R}_i - T) / \beta_{im}$
1. SCBL	54	49.8	0.68	3.1	73.23
2. EBL	67	62.8	0.83	17.06	75.66
3.HBL	30	25.8	0.75	4.4	34.40
4.NABIL	65	60.8	1.03	2.09	59.02
5.BOKL	62	57.8	0.40	24.81	144.5
6. NIBL	42	37.8	0.44	8.24	85.90

Table 4.25 and 4.26 depicts the ranking procedure. Table 4.25 contains the data necessary to determine an optimal portfolio. It is the normal output generated from a single index model, plus the ratio of excess return to beta. There are six securities in the tables. They are already ranked. Selecting the optimal portfolio involves the comparison of $(\tilde{R}_i - T) / \beta_{im}$ with C^* . For $C^* = 47.70$ Examining table 4.25 shows that for security portfolio consists of securities 1(NIBL), 2(BOKL) and 3 (NABIL).

All securities whose excess return-to-risk ratios are above the cut-off rate are selected and all those whose ratios are below are rejected. The value of C^* is computed from the characteristics of all of the securities that belong in the optimum portfolio. To determine C^* , it is necessary to calculate its values as if there were different numbers of securities in the optimum portfolio. Suppose C_i is candidate of C^* , the value of C_i is calculated when i securities are assumed to belong to the optimal portfolio.

Since securities are ranked from highest excess return to beta to lowest, we know that if a particular security belongs in the optimal portfolio, all higher ranked securities also belong in the optimal portfolio. It was proceed to calculate values of a variable C_i as if the first ranked security were in the optimal portfolio ($i=1$), then the first and second ranked securities were in the optimal portfolio ($i=2$), and so on. These C_i are candidates for C^* . We have found the optimum C_i , that is, C^* low C_i . C_3 serves the role of a cut-off rate. In particular C_3 is the only C_i that when used as a cut-off rate selects only the securities used to construct it. There will always be one and only one C_i with this property and it is C^* . For a portfolio of i securities, C_i is given by:

$$C_i = \frac{\sigma_m^2 \sum_{i=1}^i \frac{(\tilde{R}_i - T)\beta_{im}}{\sigma_{ei}^2}}{1 + \sigma_m^2 \sum_{i=1}^i \frac{\beta_{im}^2}{\sigma_{ei}^2}}$$

Where:

σ_m^2 = variance of the market index

σ_{ei}^2 = variance of a security's movement that is associated with the movement of the market index;

Table 4.26

Calculation for Determining Cut-off rate with $\sigma_m^2=12.93$

Security	$(\tilde{R}_i - T)/\beta_{im}$	$\frac{(\tilde{R}_i - T)\beta_{im}}{\sigma_{ei}^2}$	$\frac{\beta_{im}^2}{\sigma_{ei}^2}$	$\sum_{i=1}^i \frac{(\tilde{R}_i - T)\beta_{im}}{\sigma_{ei}^2}$	$\sum_{i=1}^i \frac{\beta_{im}^2}{\sigma_{ei}^2}$	C
1. SCBL	73.23	3.52	0.048	3.52	0.048	28.29
2. EBL	75.66	0.179	0.0023	3.699	0.0503	28.98
3.HBL	34.40	0.99	0.029	4.689	0.0793	30.00
4.NABIL	59.02	14.36	0.243	19.04	0.322	47.70
5.BOKL	144.5	0.037	0.0002	19.08	0.3225	47.72
6. NIBL	85.90	0.244	0.0028	19.33	0.3253	48.00

To construct the optimum portfolio, the percent invested for each selected security in the optimal portfolio was calculated. The percentage invested in each security is:

$$X_i^0 = \frac{Z_i}{\sum_{j=1}^n Z_j}$$

Where

$$Z_i = \frac{\beta_{im}}{\sigma_{ei}^2} \left[\frac{\tilde{R}_i - T}{\beta_{im}} - C^* \right]$$

The second expression determines the relative investment in each security, and the first expression simply scales the weights on each security so that they sum to 1 (ensure full investment). The residual variance on each security σ_{ei}^2 plays an important role in determining how much to invest in each security. Applying this formula to selected banks, we have:

$$Z_1 = \frac{0.44}{8.24} (142.72 - 47.70) = 5.03$$

$$Z_2 = \frac{0.40}{24.81} (64.5 - 47.70) = 0.270$$

$$Z_3 = \frac{1.03}{3.1} (48.34 - 47.70) = 0.212$$

$$\sum_{i=1}^3 Z_i = 5.512$$

Dividing each security Z_i by the sum of the Z_i it would be possible to invest 91.25 percent of total funds in security 1 (NIBL), 4.80 percent in security 2(BOKL) and 3.95 percent in security 3(NABIL).

Based on a result of an in-depth study of overall portfolio management of 15 commercial banks operating in the country, Nepal Rastra Bank for the first time in its history has ranked Nepal Industrial and Commercial (NIBL) Bank number one position with the score of 1250. According to the study, this was based on the statistics of third-q second position with the score of 1043, while Standard Chartered Bank remained third position with the score of 1022. The banks were ranked as per the international standard of CAELS. The study was conducted on the basis of five key financial parameters: capital adequacy, assets quality, earnings, liquidity and sensitivity to market risks. From this

study of overall portfolio management of selected banks NIBL, BOKL and NABIL were selected as optimal portfolio which were some extent match with NRB's previous study report.

4.3 Major Findings of the Study

Details of data, its presentation and analysis reveal that standard deviation of NABIL is 123% which is highest of all the banks selected for study. Standard deviation of EBL, NIBL, BOKL, HBL, and SCBL are 103%, 62.4%, 119%, 67.0% and 95% respectively. Depending upon this parameter i.e. S.D., NIBL stock is said to be relatively less risky. On the other hand, expected return of EBL is 67% indicating its highest position in return and NIBL, NABIL, BOKL, SCBL, and HBL have 42.4%, 65.4%, 62%, 54% and 30% 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 mu (C.V.). Stock NIBL and EBL, which has its C.V. least of all i.e. 1.47, is the best investment alternative as it has least risk per unit of expected return. CVs for other four banks – BOKL, HBL, NABIL, SCBL and are 1.91, 2.23, 1.88, & 1.77 respectively.

Market Capitalization of the selected banks in 2007 i.e. NIBL, NABIL, BOKL, SCBL, HBL and EBL are Rs.2362.34, Rs. 7389.47, 1993.40, 8785.32, 4830 and 2704.50 (Rs. in Million) respectively, SCBL is in its highest position regarding the market capitalization and then NABIL followed by HBL, EBL, NIBL and BOKL. Out of the total market capitalization of various industries, banking sector covers most of the share i.e. 72.0%. Analysis and interpretation as to the industry wise NEPSE index shows that banking sector has higher return than all others. Standard deviation seems in its midst position for this sector.

Over all market risk and return can be assessed through over all NEPSE index. NEPSE index is very high in the year 2003/2004 and it has decreased little bit

in the year 2004/05. It is lowest i.e. 163.35 in 2001/02. In comparison with market risk (29.44%), manufacturing and processing industry (18.70%), hotel industry (19.04%), trading industry (14.67%), finance and insurance industry (21.51%) have lower risk than that of market risk, where as others industry (87.91%) and banking (33.20%) have higher standard deviation. Beta Coefficient, which is sometimes called correct measure of risk shows the stocks return sensitivity relative to market. Beta coefficient of NIBL, NABIL, EBL and BOKL are 0.44, 1.03, 0.83 and 0.40 respectively and are lesser than 1 except NABIL, which indicates that return of stocks of NIBL, EBL and BOKL are less volatile than that of market. For example, every 1% change in market return leads to 1.03% change in NABIL stock's return. Most of all of the 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 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 under priced. Stocks of NABIL, EBL and BOKL are said to be aggressive stocks for being their betas greater than 1, While SCBL and 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 investments, s/he can reduce risk dramatically without losing considerable return. Therefore, a 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 form portfolio will be very useful. Portfolio risks made up of stocks of HBL and SCBL were 1.125%, while it is 67.0% and 95% respectively if held individually. To what extent various joint venture banks stocks are useful to form a portfolio is determined by the associated co-movement of returns of the stock and measured by their correlation coefficient. Correlation will be more useful than the portfolio made up of stocks NABIL and BOKL & HBL and SCBL. Likewise, portfolio made from combining NABIL and BOKL do little toward reduction of the risk of individual stock as it has moderately positive correlation.

The desirability of any security is directly related to its excess return to beta ratio: $(\tilde{R}_i - T) / \beta_i$. Securities are ranked by excess return to beta (from highest to lowest), the ranking represents the desirability of any security's inclusion in a portfolio. The number of securities selected depends on a unique cut-off rate such that all securities with higher ratio of $(\tilde{R}_i - T) / \beta_i$ is included and all securities with lower rates excluded.

From analysis it shows that for securities Nepal Investment Bank, Everest Bank and Standard Chartered Bank, $(\tilde{R}_i - T) / \beta_i$ is greater than cut off rate, while for other security, it is greater than $(\tilde{R}_i - T) / \beta_i$. Hence, an optimal portfolio consists of securities 1(NIBL), 2(BOKL) and 3 (NABIL). By constructing the optimum portfolio, the percent invested for each selected security in the optimal portfolio was determined. The percentage invested in each security was also found. It was found that 91.25 percent of total funds can be invested in

NIBL Bank Security, 4.80 percent in BOKL Security and 3.95 percent in security of NABIL in order get optimal portfolio.

CHAPTER V

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The study has taken six joint venture banks, which are listed in NEPSE. An analysis of the risks and return in common stocks 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 the 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 the 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 trade off between the two assumes a linear relationship between risk and risk 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 - oee, 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 123% which is highest of all the banks selected for study. Standard deviation of EBL, NIBL, BOKL, HBL, and SCBL are 103%, 62.4%, 119%, 67.0% and 95% respectively. Depending upon this parameter i.e. S.D., NIBL stock is said to be relatively less risky. On the other hand, expected return of EBL is 67% indicating its highest position in return and NIBL, NABIL, BOKL, SCBL, and HBL have 42.4%, 65.4%, 62%, 54% and 30% 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 EBL. 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 NIBL and EBL, which has its C.V. least of all i.e. 1.47, is the best investment alternative as it has least risk per unit of expected return. CVs for other four banks – BOKL, HBL, NABIL, SCBL and are 1.91, 2.23, 1.88, & 1.77 respectively.

Market Capitalization of the selected banks in 2007 i.e. NIBL, NABIL, BOKL, SCBL, HBL and EBL are Rs.2362.34, Rs. 7389.47, 1993.40, 8785.32, 4830 and 2704.50 (Rs. in Million) respectively, SCBL is in its highest position

regarding the market capitalization and then NABIL followed by HBL, EBL, NIBL and BOKL. Out of the total market capitalization of various industries, banking sector covers most of the share i.e. 72.0%. Analysis and interpretation as to the industry wise NEPSE index shows that banking sector has higher return than all others. Standard deviation seems in its midst position for this sector.

Over all market risk and return can be assessed through over all NEPSE index. NEPSE index is very high in the year 2003/2004 and it has decreased little bit in the year 2004/05. It is lowest i.e. 163.35 in 2001/02. In comparison with market risk (29.44%), manufacturing and processing industry (18.70%), hotel industry (19.04%), trading industry (14.67%), finance and insurance industry (21.51%) have lower risk than that of market risk, where as others industry (87.91%) and banking (33.20%) have higher standard deviation. Beta Coefficient, which is sometimes called correct measure of risk shows the stocks return sensitivity relative rates that return of stocks of NIBL, EBL and BOKL are less volatile than that of market. For example, every 1% change in market return leads to 1.03% change in NABIL stock's return. Most of all of the 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 under priced. Most of the stocks of this sector are under priced. According to general rules regarding buy or 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 under priced. Stocks of NABIL, EBL

and BOKL are said to be aggressive stocks for being their betas greater than 1, While SCBL and 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 investments, s/he can reduce risk dramatically without losing considerable return. Therefore, a 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 form portfolio will be very useful. Portfolio risks made up of stocks of HBL and SCBL were 1.125%, while it is 67.0% and 95% respectively if held individually. To what extent various joint venture banks stocks are useful to form a portfolio is determined by the associated co-movement of returns of the stock and measured by their correlation coefficient. Correlation coefficient of NABIL and BOKL is 0.739, HBL and SCBL is 0.680 and 0.828 of NIBL and EBL. Portfolio risk made up of stocks NABIL and BOKL is 112.5% and NIBL and EBL is 262%. Portfolio made up of stocks NIBL and EBL will be more useful than the portfolio made up of stocks NABIL and BOKL & HBL and SCBL. Likewise, portfolio made from combining NABIL and BOKL do little toward reduction of the risk of' individual stock as it has moderately positive correlation.

The desirability of any security is directly related to its excess return to beta ratio: $(\tilde{R} - T) / \beta$. Securities are ranked by excess return to beta (from highest to lowest), the ranking represents the desirability of any security's inclusion in

a portfolio. The number of securities selected depends on a unique cut-off rate such that all securities with higher ratio of $(\tilde{R}_i - T)/\beta_{im}$ is included and all securities with lower rates excluded.

From analysis it shows that for securities Nepal Investment Bank, Everest Bank and Standard Chartered Bank, $(\tilde{R}_i - T)/\beta_{im}$ is greater than cut off rate, while for other security, it is greater than $(\tilde{R}_i - T)/\beta_{im}$. Hence, an optimal portfolio consists of securities 1(NIBL), 2(BOKL) and 3 (NABIL). By constructing the optimum portfolio, the percent invested for each selected security in the optimal portfolio was determined. The percentage invested in each security was also found. It was found that 91.25 percent of total funds can be invested in NIBL Bank Security, 4.80 percent in BOKL Security and 3.95 percent in security of NABIL in order to get optimal portfolio.

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 separately i.e. number-wise to different aspects of the study, which will be more beneficial and easier to understand and to improve present stock performance by the banks under study.

1. Risk and return of banking sector is very divergent. It is suggested to analyze risk and return sincerely before investing in this sector. It is not always reliable to reach a decision based on the risk and return. It is highly preferable to use CV. to reach to ideal investment alternatives. According to CV, HBL and EBL are the best of all, as they have the least C.V.
2. Standard deviation gives ideas as to total risk. But investors must concern with the systematic risk as measured by the given stock's beta.

Systematic risk is only the risk, which is priced at market. Stock of EBL, 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.

3. 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 cannot diversify risk properly. Investors should follow the following guidelines: 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 from time to time is nec of returns of the stocks of HBL and SCBL are least of all and accordingly, are the best of all for portfolio construction.
4. Before making an investment decision 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.
5. Conservative equity investors seek to minimize the investment risk as well as the time and effort devoted to portfolio management. Conservative equity investors should bear in mind the following suggestions specially applicable to them:

- a. Look for relatively safe opportunities in the primary market.
 - b. Participate in the schemes of mutual funds.
 - c. Join a suitable portfolio management scheme.
 - d. Consult an investment advisor.
6. 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.
 7. Nepal Sock 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.
 8. The listed companies should operate their activity smoothly. They should publish their annual reports and information timely and correctly which will help to the investors to take the investment decision on their common stocks.
 9. 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 avenues 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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