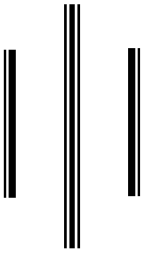
A STUDY ON RISK AND RETURN ANALYSIS OF COMMON STOCK OF COMMERCIAL BANKS IN NEPAL

(With special reference to BOKL, NIBL, SCBNL, NABIL & NSBIL)



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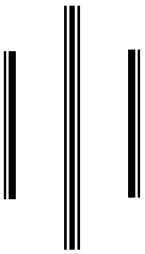

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RECOMMENDATION

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

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VIVA-VOCE SHEET

We have conducted the viva-voce examination of the thesis presented by

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and found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for Master of Business Studies **(**M.B.S.**)**

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DECLARATION

I hereby declare that the work reported in this thesis entitled **"A STUDY ON RISK AND RETURN ANALYSIS OF COMMON STOCK OF COMMERCIAL BANKS IN NEPAL" (With special reference to BOKL, NIBL, SCBNL, NABIL & NSBIL)** submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirements for the Master of Business Studies **(**M.B.S.**)** under the supervision and guidance of **Bandana Jain, Lecturer of Post Graduate Campus, Biratnagar.**

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ABBREVIATIONS

AGM	=	Annual General Meeting
A.D.	=	Anno Domini
B.S.	=	Bikram Sambat
CAPM	=	Capital Assets Pricing Model
CBs	=	Commercial Banks
CML	=	Capital Market Line
SML	=	Security Market Line
DPS	=	Dividend Per Share
EPS	=	Earning Per Share
F/Y	=	Fiscal Year
Govt.	=	Government
IFIC	=	International Finance Investment and Commercial Bank
JVBs	=	Joint Venture Banks
MPS	=	Market Price Per Share
NRB	=	Nepal Rastra Bank
BOKL	=	Bank of Kathmandu Limited
NIBL	=	Nepal Investment Bank Limited
SCBNL	=	Standard Chartered Bank Nepal Limited
NABIL	=	Nepal Arab Bank Limited
NSBIL	=	Nepal SBI Bank Limited
C.S.	=	Common Stock
R	=	Annual Rate of Return
$\bar{R}$	=	Expected Rate of Return
Cov.	=	Covariance
S.D.	=	Standard Deviation
Var.	=	Variance
C.V.	=	Coefficient of Variance
Rf	=	Risk Free Rate of Return
Rm	=	Return on Market
SEBON	=	Security Board of Nepal
TB	=	Treasury Bill
T.U.	=	Tribhuvan University

CHAPTER-I
INTRODUCTION

1.1 Background of the Study

Nepal is one of the least developed countries of the world and has many implicit and explicit for the development. Agriculture is the largest sector and the backbone of the Nepalese economy. Most of the people depend on agriculture sector. The agriculture sector is also not modernized and the people of this country follow traditional farming technique.

Nepal is a land locked country. Nepal is a mountainous country. It is located on the southern part of the Himalayan range. Nepal covers an area of 147,181 sq km. Nepal is hilly country. Hilly region occupies nearly 68% of the total land area. Majority of the people are economically and financially immobile. So the country is facing a great problem to get economic prosperity.

The proper mobilization and utilization of domestic resources become indispensable for any developing counties aspiring for a sustainable economic development. Similarly, Integrated and speedy development of the country is possible only when competitive banking service reaches the nook and corners of the country. Commercial Bank and other financial institutions plays an important role in the framework of every economy because it provides capital for the development of industry, trade and business by investing the saving collected as deposits. Successful formulation and effective implementation of investment policy is the prime requisite for the better performance of banks and other financial institutions. Good investment policy has a positive impact on economic development of the country and vice-versa.

Investment operations are very risky. Investment policy is one facet of overall spectrum of policies that guides bank's investment operation. A healthy development of any bank depends heavily upon its investment policy. A sound

and viable investment policy can be effective one for the economy to attain the economic objectives directed towards the acceleration of the pace of development. A good invest attracts both borrower and lenders, which helps to increase the volume and quality of deposits, loan for investment. The investment policy of the bank helps the investment operation of the bank to be efficient and profitable by minimizing the inherent risk.

The development of any country largely depends upon its economic development. Thus, the primary goal of any nation including Nepal is rapid economic development to promote the welfare of the people and the nation as well. Nepal being listed among least developed country is trying to embark upon the path of economic development by economic growth rate and developing all sectors of economy. Even though the process of economic development depends upon various factors, the economists are now convinced that the capital formation and its proper utilization play a paramount role for rapid economic development of resources.

The network of a well-organized financial system of the country has great bearing in capital formation. It collects scattered financial resources from the masses and invests them among those engaged in commercial and economic activities of the country. It has been well established that the economic activities of any country of any country can hardly be carried forward without the assistance and support of financial institution. Financial institutions have catalytic role in the process of economic development. Commercial banks are major financial institutions to provide capital for the development of industry, trade and business by investing the saving collected as deposits. All the economic activities of each and every country are greatly influenced by the commercial banking business of the county. Thus, commercial banks have become the heart of financial system. A key factor in the development in the country is the mobilization of domestic resources and their investment for productive policies which help to maximize quality and quantity of investment and eventually contribute to the economic growth of a country.

1.2 Commercial Banks & Investment Portfolio

Commercial banks are those financial institutions which deal in accepting deposits of persons and institutions and giving loans against securities. They provide working capital needs to trade industry and even to agriculture sectors. Moreover commercial banks also provide technical and administrative assistance to industries, trade and business enterprises. Commercial banks pull together the saving of the community and arrange them for the productive use. They transfer monetary sources from savers to users. In addition to above, the main purpose is to uplift the backward of economy.

Commercial bank is a corporation which accepts demand deposits subject to check and makes short term loans to business enterprises, regardless of the scope of its other services.

The commercial banks play an important role in the modern economy. Accepting deposits from individual and institution and providing loans to the needy persons and business are its two important functions. Besides, it performs many other services or function. Commercial banks are the heart of the financial system. They make fund available through their lending and investing activities to borrowers, individuals, business firm and services. So, commercial banks are those financial institution which collects loan against proper securities for the productive purpose. It mobilizes its deposits and other funds to profitable, secured and stable and marketable sector. As a result, it can earn a handsome profit as well as it should be secured and can be converted into cash whenever needed. Investment policy provides the bank several inputs through which they can handle their investment operation efficiently ensuring that maximum returns with minimum returns with minimum risk which ultimately leads the banks to the path of success. Thus, investment is the most important function of commercial banks. It is the long term commitment of bank in the uncertain and risky environment. It is a very challenging task for commercial banks. So, a bank has to very cautious while investing their funds

in various sectors i.e. investment portfolio. The success of a bank heavily depends upon the proper management of its investable funds.

Investment portfolio is the one in which the income of the banks depends upon directly. Hence, the bank should never invest its fund in those securities which are subject to much depreciation and fluctuations because a little difference may cause a great loss. It must not invest its fund into speculative businessman who may be bankrupt at once and who may earn million in minute. The bank should accept that type of securities which are commercial, durable, marketable, stable, transferable and high market prices. A commercial bank can maximize its volume of wealth through maximization of return on their investment and lending. So, they must invest their funds where they gain maximum profit. The profits of commercial banks mainly depend on the interest rate, volume, period of loan and nature of investment in different securities. While investing excess funds in different securities or at the lending period, the bank should keep in mind that people deposit money at the bank in different account with confidence that the bank will repay their money when they need. Similarly, a bank should not lay all its eggs in the same basket i.e. to minimize risk; a bank must diversify its investment to different sectors. Diversification of loan or investment helps to sustain loss according to the level of average because if securities of company deprived, there may be appreciation in the securities of other companies.

An essential part of the business activity which is established to safeguard people's money and thereby using the money in making loans and investment. There are several commercial banks operating inside and outside the valley. Every bank invests lost money in some profitable business in the long run. An investment is the commitment of money that is expected to generate additional money.

Human nature doesn't satisfy for whatever he/she tends to have more than whatever he/she has. So expecting the additional return he/she tends to sacrifice

the current resources. Whenever we talk about return risk too must not be avoided because in every type or return risk is involved. “Every investment entails some degree of risk it requires at present certain sacrifice for future uncertain benefits”. The growth of an individuals or firm’s resources is not possible until and unless we invest it in some profitable sector.

Thus investment is the sacrificed of existing resources to generate return in future involving risk. It can be real as well as financial investment. Real investment involves kind tangible assets such as lands, machinery, factories, building etc. Whereas as financial investment involves contracts written in a piece of paper such as common stock bond etc.

There are various alternatives for investment out of the various type of alternative, this study deals with the common stock has one important investment characteristics and one important speculative characteristic. Common stock is the most risky security. As the common stock is risky it will yield highly return. Common stock holders will get the return from common stock. People typically buy common stock expecting to earn dividends plus capital gain when they sell their share at the end of some holding periods.

Commercial banks must follow the rules and regulations as well as different direction issued by central bank, Ministry of Finance, Ministry of law and other while mobilization its funds. So, the bank should invest its funds in legal securities only. The loan provided by commercial bank is guided by several principles such as length of time, their purpose, profitability, safety etc. these fundamental principles of commercial bank’s investment are fully considers while making investment portfolio. The investment portfolio should be carefully analyzed so that the investment should ensure minimum risk and maximum profit. So, commercial banks should be incorporate several elements such as regulatory environment, the availability of funds, selection of risk, investment portfolio balance term structure of the liabilities etc while making investment decision.

1.3 Investment Pattern of Nepalese Commercial Banks

The evolution of the organized financial system in Nepal has a more recent history than in other countries of the world. The banking history of Nepal is not more than of six decades. Before all the money transaction was carried out by a few money lenders; truly speaking for the first time Goldsmith were doing the banking activities which received deposits and lend money to their clients. The primitive people were anxious keeping their valuable ornaments and money in their houses. They kept those to the goldsmiths because of safety motive. Thus for the first time people began to keep their valuable things in the hands of goldsmiths because they had safe.

At the preliminary stage of development of banking system, there were TANKADHARIES meaning money dealers were the owners of the money transaction. Later on, during the period of Prime Minister Ranodeep established TEJARATH ADDA in Nepal for granting loan to civil servant. TEJARATH ADDA was governed financial institution. Thus TEJARATH was replaces by a commercial bank known as the Nepal Bank Ltd, during the period of Juddha Shamsher. In developing country like Nepal, the needs of the masses could not be fulfilled only by such institution. In the history of Nepal, to solve this problem, for the first time in 1994 B.S. Nepal Bank Limited was established as one of the helping tools to overcome those obstacles as semi government organization. It has done pioneering function in spreading the banking habit among the people. It was established to help government policy to develop economic and business activities of the country. After realizing the need of another bank, later in 2013 B.S. the first central bank named as the "Nepal Rastriya Bank" was set up with an objective of supervising, protecting and directing the function of commercial banks and other financial institutions. To fulfill the growing credit requirement in 2022 B.S Rastriya Banijaya Bank the commercial bank was set up. The purpose of this bank was also to provide facilities for the economic welfare of the general public. As the country moved towards economic liberalization in 2046 B.S. foreign banks were invited to

operate in Nepal. The financial scenario has changed with the introduction of Joint venture Bank in 2041 B.S. The number of commercial banks has been increasing. Since then various financial institutions like JVB's, Development Banks, Finance Companies, Cooperative Banks, Credit Guarantee Corporation, Employee Provident Fund, Insurance companies, Nepal Stock Exchange have come into existence to cater the financial needs of the country thereby assisting financial development of the country.

After restoration of democracy in the country in 2046 B.S., government highlighted the agenda of economic liberalization policies were announced and emphasized to invite foreign direct investment in the banking sectors of Nepal. Therefore the development of CBs in Nepal is categorized in three phases on the basis of financial policies adopted by the country from time to time. They are:

CBs prior to 2046 B.S. CBs of 2046 B.S. CBs post 2046 B.S.

There were only two banks prior to 2046. They are NBL and RBB. They were three CBs in 2046. All three were established as joint venture. They are NABIL, Nepal Investment Bank, Standard Chartered Bank.

The banking sectors in Nepal started with the establishment of Nepal Bank Limited. Today, we have 31 commercial banks in operation. The commercial banks of Nepal can be categorized into two types: a public sector which includes NBL and RBB and private sectors includes other commercial banks.

Bank and financial institutions were operating under various other acts before the promulgation of Bank and Financial ordinance 2005. It has been categorized into A, B, C and D class. Accordingly, commercial banks, development banks, finance companies, and micro-credit development banks are categorized into A, B, C and D class. There are 86 development banks, 59 finance companies, 31 micro-finance companies, 25 insurance companies etc. Besides there are many cooperative societies and NGOs undertaking limited

banking function after obtaining permission from the NRB. The new directives and enforcement of the umbrella act has brought all financial institutions including banks, finance companies and other financial institutions to operated, supervised, and monitored by the same act. There are numerous other cooperatives with multi-purpose functions and characteristics registered under department of cooperatives. Moreover, there are non-bank financial institutions like Citizen Investment Fund (CIF), Hulak Bachat Sewa and Provident Fund playing role in the financial market with different investment schemes beneficial to the investors. As Nepalese financial market is characterized by low volume of turnover, high interest rate in lending, high interest rate spread, inefficient management, lack of practice of project financing problem of inadequate working fund and unhealthy competition between the companies in finance sector has compel the process of merger and acquisitions between the companies in operation in order to overcome these problem. Merger and acquisition has become an urgent need as Nepal had already become a member of WTO, especially in finance sector because foreign banks branch will be supposed to allow operation in Nepalese market.

Table-1.1

List of Licensed Commercial Banks in Nepal

S.N.	Name of Bank	Established Date	Head Office
1.	Nepal Bank Ltd.	1994/07/30	Kathmandu
2.	Rastriya Banijaya Bank Ltd.	2022/10/10	Kathmandu
3.	NABIL Bank Ltd.	2041/03/29	Kathmandu
4.	Nepal Investment Bank Ltd.	2042/11/26	Kathmandu
5.	Standard Chartered Bank Nepal Ltd.	2043/10/16	Kathmandu
6.	Himalayan Bank Ltd.	2049/10/05	Kathmandu
7.	Nepal SBI Bank Ltd.	2050/03/23	Kathmandu
8.	Nepal Bangladesh Bank Ltd.	2051/02/23	Kathmandu
9.	Everest Bank Ltd.	2051/07/01	Kathmandu
10.	Bank of Kathmandu Ltd.	2051/11/28	Kathmandu
11.	Nepal Credit and Commerce Bank Ltd.	2053/06/28	Siddharthanagar
12.	Lumbini Bank Ltd.	2055/04/01	Narayangadh
13.	NIC ASIA Bank Ltd.	2055/04/05	Biratnagar
14.	Machhapuchhre Bank Ltd.	2057/06/17	Pokhara
15.	Kumari Bank Ltd.	2057/12/21	Kathmandu
16.	Laxmi Bank Ltd.	2058/12/21	Birgunj
17.	Siddhartha Bank Ltd.	2059/09/09	Kathmandu
18.	Agriculture Development Bank Ltd.	2024/10/07	Kathmandu
19.	Global IME Bank Ltd.	2063/09/18	Birgunj
20.	Citizens Bank International Ltd.	2064/01/07	Kathmandu
21.	Prime Commercial Bank Ltd.	2064/06/07	Kathmandu
22.	Sunrise Bank Ltd.	2064/06/25	Kathmandu
23.	Grand Bank Nepal Ltd.	2065/02/12	Kathmandu
24.	NMB Bank Ltd.	2065/02/20	Kathmandu
25.	Kist Bank Ltd.	2066/01/24	Kathmandu
26.	Janata Bank Nepal Ltd.	2066/12/23	Kathmandu
27.	Mega Bank Nepal Ltd.	2067/04/07	Kathmandu
28.	Commerz & Trust Bank Nepal Ltd.	2067/06/04	Kathmandu
29.	Civil Bank Ltd.	2067/08/10	Kathmandu
30.	Century Commercial Bank Ltd.	2067/11/26	Kathmandu
31.	Sanima Bank Ltd.	2068/11/03	Kathmandu

1.4 Statement of the Problem

Due to the lack of information and poor knowledge, individual investor is manipulated or exploited by the financial institutions or other market intermediaries to such an extent that investing in common stock is intolerance hazardous. There is another problem for financial sector to earn goodwill among the public because some financial companies' have collapsed due to improper use of public funds. Investor are responsible to make rational investment decision rather than switching blame to others previous research by Bhatta shows that in Nepal most of the investor invest their funds in single security rather they can be benefited by investing in portfolio of securities through diversification of risk. Most of the rational investors holds portfolio of stocks and they are more concerned with the risk of portfolio than with risk of individual securities.

At the same time there are no any separate institution which provides information required to rational decision that can accelerate the stock investment and market efficiency. Government policy is less encouraging in promoting common stock investment. The Nepalese stock market is characterized by a low trading volume absence of professional brokers, early stage of growth, limited movement of share prices and limited information available to investors. The number of investors is stock market is still very few who are not confident to get appropriate return from the listed companies. About the common stock investment it is not wholly rational or logical processes which can be understand in terms of conventional reason and logic, since it involves the use of intuition, imagination, guesswork, conscious judgment based on little understood statistical probability. The most investors use linear logic to formulate their investment strategies and to make investment decisions whereas linear logic is based on the assumption that the future will reuse the past in a predictable fashion.

The most of the Nepalese people strive for food and shelter and who are able to invest on long-term investment feel more risk in stock investment than its real risk. To overcome this problem the public as well as government should initiate new program. The information essential to investment decision should be disseminated properly and timely. In addition, idea of portfolio should be developed in potential investors mind. Stock returns are determined not only by single factors rather these are the functions of different fundamental variables. However these past findings are relevant in the present day context but other questions may also arise due to many changes taken place after the completion of these studies, in order to verify these findings. This study also tries to deals with following issues:

- How much return does the common stocks of commercial bank provides to their investors?
- How can one make higher return through lower risk?
- Does the relation between risk and return support the theory of CAPM?
- Does the risk and return of selected commercial bank vary significantly?
- What is the systematic risk position in relation to total risk?
- How can one construct optimum portfolio?

1.5 Objectives of the Study

Due to lack of perfect knowledge and less information Nepalese investors are facing above mentioned problems in the field of setting their investment policies, analyzing financial assets, construction portfolio performances.

The major objectives of this study are to evaluate the risk and return associated with common stock investment of commercial banks. The specific objectives of this study are as follows:

- To examine risk and return on common stock of listed commercial banks.
- To determine the effect of portfolio on risk and return.

- To identify which company's stock is overpriced, under priced and equilibrium price.
- To test the relationship between risk and return.
- To provide relevant suggestion and practical ideas on the basis of the finding of this study.

1.6 Significance of the Study

In context of Nepal the capital market is growing very slowly. The market is not efficient, there are very few magazines or articles related to capital market and very few studies are made on the topic 'Risk and Return". Because of these all things most of the investors are investing on the capital market without any proper knowledge and information. So investment on capital market is just like 'shooting in the dark'. The study will give information about Nepalese capital market by analyzing risk and return and will definitely contribute to increase the analytical power of the investors in capital market.

Investment is a kind of economic activity by means of which economy of a nation can be accelerated in our country. The awareness about the investment process is lacking due to which some time people i.e. investors may have to face a huge loss.

Therefore to provide basic and necessary information about investment and investment process, the current study is favorable. This current study will help to take an appropriate decision about how to set investment policies and how to analyze and evaluate the investment worthwhileness over the different time period. 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.

Further, this research will attempt to clarify concrete picture of different aspect of risk and return, which will be beneficial to the investors for taking right investment decision.

1.7 Limitations of the Study

As every research has its own limitation, this study is not biased. Basically the research is done for the partial fulfillment of MBS. So this has some limitations, which are listed below:

- It only focuses on selected commercial banks covering the period of last five years.
- All the data taken into analysis are secondary data and information. So, the considering of findings and conclusion is strictly dependent upon the reliability of secondary data and information.
- The study only focuses on the analysis of risk and return associated with common stock investment of selected commercial banks.
- Only selected financial and statistical tools are used.
- The study has been conducted to fulfill the requirement of the MBS program of TU for a prescribed time not for generalization purpose.

1.8 Organization of the Study

The whole study is organized into five different chapters. The titles of those chapters are name as follows:

Chapter I: Introduction

The introduction part of the study that contains

- Background of the Study
- Functions of Commercial Banks
- Statement of the Problem
- Objectives of the Study
- Significance of the Study
- Limitations of the Study
- Organization of the Study

Chapter II: Review of Literature

This chapter is devoted for the brief review of available literature. Reviews from books, journals, previous unpublished thesis, articles are included here. It will include review about conceptual framework and review of major studies. Conceptual framework about risk and return is briefly reviewed.

Chapter III: Research Methodology

Research methodology focus on research design, population and samples for the study, sources of data, procedures of data collection, tools for analysis, limitation of the methodology, method of analysis and presentation.

Chapter IV: Data Presentation & Analysis

The body part of these researches that include data analysis and interpretation. This chapter analyzes the risk and return of each commercial bank's common stock and their comparison are also made. Industry wise comparison in term of risk and return of common stock are also illustrated in this chapter. Major findings of the study are also included in this chapter.

Chapter V: Summary, Conclusion & Recommendation

This chapter is for major findings, conclusion and recommendation along with the bibliography and appendices. In this part several directions for further research will be offered.

CHAPTER - II
REVIEW OF LITERATURE

Review of literature means reviewing research studies or other relevant proposition in the related area of study so that all the past studies, their conclusion and deficiencies may be known and further research can be conducted. It is an integral and mandatory process of research work (Joshi, 2001: 55).

The concerned of the study is focus on common stock investment and its impact on individual risk and return. The purpose of reviewing the literature is to develop some expertise in one area and to see what new contribution can be made and to receive some ideas of developing research design. Theoretical aspect of risk and return is explored in this chapter. Risk are associated return has got tremendous concentration in financial management. This chapter reviews some basic academic source books journals and other related studies. Some of the master degree thesis has also been reviewed. In addition independent studies carried out by well-known experts and other is also taken into consideration.

2.1 Conceptual Framework

Various books dealing with theoretical aspect of risk and return are taken into consideration. Major focus is on the investment of common stock and its impact on individual risk and return.

2.2 Development of Commercial Banks in Nepal

Nepal's banking history had begun with the establishment of Nepal Bank Ltd. in November 15, 1937. At that time the bank has authorized capital of Rs. 2.5 million and paid up capital of Rs. 842000. Nepal Bank Ltd. was the first commercial bank with 51% government equity. Rastriya Banijaya Bank came into existence in January 23, 1966 fully ownership of the government of Nepal

with the authorized capital of Rs. 10 million and paid up capital of Rs. 2.5 million.

In 2046 B.S. the government introduced 'financial sector reform Nepal' which allowed the entry of foreign bank as a joint venture bank with up to maximum of 50% equity participation. It was the foundation of modern banking industry.

After the restoration of democracy in 2046 B.S., Nepal launched its eight plan of development with economic liberation. It also helped to develop the banking sector of the nation. Government's open and liberal financing policy also helped to develop and expand the commercial banks in Nepal. Now there are altogether thirty-one commercial banks in Nepal supporting the business and industry of the nation.

A joint venture is the joining of forces between two or more enterprises for the purpose of carrying out a specific operation i.e. industries of commercial investment and production of trade (Gupta, 1984: 15).

2.3 Investment

Investment is the employment of funds with the aim of achieving additional income or growth in value. It involves the commitment of resources that have been saved or put away from current consumption, in the hope that some benefits will accrue in the future. Investment involves the sacrifice of current rupees for further rupees. The sacrifice takes place in the present and certain while the reward comes later and uncertain (Sharpe, Alexander, Bailey, 2003: 95). Investment generally involves real assets or financing assets. Real assets involve some kind of tangible assets such as land, buildings, machinery, automobiles and factories. Financial investment is pieces of paper representing an indirect claim to real assets held by someone else. Real assets are generally less liquid than financial assets.

Investment is the broadest sense means the sacrifice of current dollars for further dollars. Two different attributes generally involves time and risk. The sacrifice takes place in the present and is certain. The rewards come later if at all and the magnitude is generally uncertain (Sharpe, 1995: 1).

Investment in any vehicle into which funds can be placed with the expectation that will preserve or increase in value and generated positive return (Gitman and L. J., 2001: 76).

An investment is the current of funds for a period of time to derive a future flow of funds that will compensate the investing unit for the time funds are committed for the expected rate of inflation and also for the uncertainty involved in the future flow of the funds.

Investing or speculating in the stock market has all the characteristics of the game and the aim to win. Investment decision involves emotional activities. Investors invest their fund on securities for the long run future return. Investment involves making decision who's investing or speculation in the stock market has all the characteristics of the game and the aim to win. Investment decision involves emotional activities. Investors invest their fund on securities for the long run future return. Investment involves making decision whose outcome cannot be predicted and it is always associated with risk and returns a wide range of investment opportunity is available to investors. Investment can be made on common stock, preferred stock, bond, convertible, warrant, option etc. among various alternatives the present study focuses on common stock investment only.

2.4 Common Stock

The study is focused on the common stock investment that's why light is thrown on it. Common stock represents ownership position in a corporation. It has a residual claim, in the sense that creditors and preference shareholder can receive payment only after the payment of all other claims. In bankruptcy,

common stockholders are, in principle, entitles to assets remaining after all prior claimants have been satisfied. The risk is highest with common stock investment. When investors buy common stock they receive certificate of ownership as a proof of their being part of the company. The certificate states the number of shares purchased and their par value (Bhalla, 2005: 196).

Common stock holders of a corporation are its residual owners, their claim to income and assets comes after creditors and preference share holders have been paid in full. As a result a stockholder's return on investment is less, certain than the return to lender or to a preferred stock holder. On the other hand, the share of the common stock can be authorized either with or without par value. The par value of the stock is merely a stated figure in the corporate character and is of little economic significance. A company should no issue stock at a price less than par value because stock holders who brought stock for less than par value would be liable to creditors for the difference between the below par price they paid and the par value (Van Horne, 1997: 961). But in Nepal, as per the provision of Nepal Company Act 2057, no common stocks are allowed to issue without par value. Its par value must either Rs. 10 or Rs. 100.

Common stocks have one important investment characteristics and are important speculative characteristic. Their investment value and average market price tend to increase regularly but persistently over the decades as their net worth builds through the reinvestment of undistributed earnings. However, most of the time common stocks are subjected to irrational and excessive price fluctuation in both directions as most people to speculate or gamble i.e. to give way to hope fear and greed.

Common stock holders are the owners of the corporation. As owners common stock holders have certain right, the most important are (i) the right to participate in profit distribution (ii) the right to vote etc. from the corporation viewpoint, common stock represents a fund raising device, from the investors view point stock ownership gives the stockholders an opportunity to share in

the profit when declared an dividend, an opportunity to make money an appreciation in the corporation (Bradley, 1995: 104).

So common stocks are more risky than both bond and preferred stock from the point of investment. Equity stock gives several rights to the stockholders. He/she has the right to vote, the right of dividend, right of being offered right shares, the right to bonus issue and certain tax benefit. Investment in common stock is highly liquid because common stock may be purchased and sold immediately. While the stockholders had the right of being the owner of the firm has liabilities is limited only to the extent of his investment. Due to high and more advantages common stock is more popular and attractive investment among investors.

2.5 Return on Common Stock

Return is the income received on an investment plus any change in market price, usually expressed as a percent of beginning price of the investment. The overall rate of return can be decomposed into two parts as capital appreciation and dividend. Capital appreciation is the difference between ending value and beginning value of an investment. Returns are defined as the dividend yields plus the capital gain or loss. The relationship between 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 period. 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 the historical data plus the analysis for the look for the economy and the outlook for the industry, the outlook for the firm in its industry and another factors.

For investors, return is considered as the main attraction to invest in a risky security as stock (equity share) accepting a varying degree of risk tolerance.

The return from holding an investment over some period says 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.

For common stock we can define one period (single period) return as:

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

Where,

R = Actual (Expected) Return

t = Particularly time period in the past (future)

D_t = Cash dividend at the end of time period t.

P_t = Stock's price at the time period t.

P_{t-1} = Stock's price at the time t-1

Above formula can be used to determine both actual one period return (when based on historical figure) as well as expected one period return when based on future expected dividends and prices. The term is the parenthesis in the number of the above equation represents the capital gain or loss during the period (Van Horne and Markowitz, 1997: 94).

Holding period return measures mentioned is useful with investment horizon of one year or less than one year. The viewed calculation is present value bases and this considers the time value of money.

Investment decisions are based on expectation about the future. The expected rate of return for any assets is the weighted average rate of return, using the probability of each rate of return as the weight. The expected rate of return is calculated by summing the produces of the rates and their respective probabilities (Francis, 2000: 11-12).

$$E(r) = \sum_{t=1}^{n} Pt.rt$$

Where,

E (r) = Expected rate of return

Pt = Probability of stock‘t’

rt = Rate of return of 1 stock

t = Event and perceived as possibilities

$\sum$ = Sign of summation

Other methods for expressing the expected rate of return on investment in common stock can be obtained by arithmetic mean of the past year return.

Symbolically,

$$E(R_j) = \frac{\sum Rt}{n}$$

Where,

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

n = Number of year the return is taken

$\sum$ = Sign of summation

2.6 Risk on Common Stock

Risk can be defined as the variability of possible return around the expected return of an investment. For some investment this variability can be quite small. Each investor has his or her own attitude about risk and how much he and she can tolerate. Since investment have different type of risk associated with them. The investors must determine which combination of alternative matches his or her particular risk tolerance. Risk is the product of all potential outcomes expressed with probability associated with each other and its distribution of such outcomes.

Risks and uncertainly are treated separately in financial analysis. The practice is to translate the uncertainty into a mathematical value, which represents the

best estimate of all uncertain values. In other words uncertainty is taken care of by calculating the expected value of all possible outcomes. But risk is treated differently. Although risk from uncertainty is its magnitude depends upon the degree of variability in uncertain cash flow and it is measured in terms of standards deviation.

Risk is a complicated subject and need to be properly analyzed. The relationship between risk and return is described by inventory's perceptions about risk and their demand for compensation. No, investor will like to invest in risky assets unless he is assured of adequate compensation for the assumption of risk. Therefore, it is investor required risk premium that establishes a link between risk and return in a market dominated by rational investor's higher risk will command by rational premium and the tradeoff between the two assumes a linear relationship between risk and risk premium.

Risk play central role in the analysis of investment. There are various types of risk which an investor might have face like interest rate risk, financial risk, business risk, management risk, market risk, currency risk, assets class risk etc. risk is very much likely to occur in any type of investment but proper analysis will be able to help us to minimize the risk up to some extent. Risk defined most generally is the probability of the occurrence of unfavorable outcomes. But risk has different meaning on different context. In our context two major development form the probability distribution has been used as initial measure of return and risk.

Risk defined most generally is the profitability of the occurrence of unfavorable outcomes. But risk has different meaning in different context. In our context two major development form the probability distribution has been used as initial measure of return and risk. There are the mean and the standard deviation of the probability distribution (Weston and Brigham, 2000: 93). Instead of measuring risk the probability of a number of different possible outcomes, the measure of risk should somehow estimate the extent to which the

actual outcomes are likely to diverse form the expected outcome. Standard deviation is a measure that does this since it is an estimate of the likely divergence of actual return from expected return (Sharpe, Alexander and Bailey, 1995: 105-107)

Risk is the unlooked for the unwanted event in the future; someone has said that risk was the sugar and salt of life. Risk is defined in Webster's Dictionary as a hazard, a peril, and exposure to the loss or injury. Thus for most risk refer to the change that some unfavorable event will occur. If you invest in speculative stocks, or really any stock you are taking a risk in the hope of making an appreciable return (Weston, Besley and Brigham, 2000: 182-183).

2.7 Range

The range (maximum return-minimum return) is known as one of the traditional way of measuring risk. It simply shows the difference between the best possible return and the worst possible return but does not provide information about the distribution of the rates of return between the extremes (Cheney and Moses, 1992: 8-12).

i.e. Range = Best possible rate of return - Worst possible rate of return

2.8 Standard Deviation

The standard deviation provides more information about the risk of assets. Its advantage is that the uncertainties of return can be summarized into a single, easily calculated number. The major disadvantage is that the standard deviation considers possible return above the expected value which is as risky as returns below the expected value. Standard deviation measured the dispersion of deviation or variation. In other word the conventional measure of the dispersion is the standard deviation (S.D.). The greater the S.D., the greater is the risk of the investment.

We have already discussed above that the risk is a difficult concept to grasp and a great deal of controversy has surrounded attempts to define and measure it to be most useful any measure of risk should have definite value. We need a measure of the lightness of the probability distribution. One such measure is the standard deviation, the symbol for which is (σ) pronounced sigma. The smaller the S.D., the tighter is the probability distribution and accordingly the lower the riskiness of the stock to calculate the S.D. we take the following step.

1. We calculate the expected rate of return,

Expected rate of return ($\overline{R}$) = $\sum_{t=1}^{n} R_i P_i$

Where,

R_i = Return for the i^{th} possibility

P_i = Probability of the that return occurring

N = Total no. of possibility

$\overline{R}$ = Expected rate of return

2. Deviation = $R_1 - R$

3. Variance = $\sigma^2 = \sum_{t=1}^{N} \left(R_i - \overline{R}\right)^2 P_i$

4. Finally we take the square root of the variance to obtain the standard deviation;

$$\sigma = \sqrt{\sum_{t=1}^{n} \left(R_i - \overline{R_i}\right)^2} \times P_I$$

Where,

$\overline{R_i}$ = expected rate of return

P_i = Probability

σ = Standard deviation

R_i = Return for i^{th} possibility

Operationally we generally first calculate distribution variance or the weighted average of square deviations of possible occurrence from the mean value of the

distribution, with the weight being the probability of occurrence. The square root of the figure will provide the standard deviation.

Standard deviation is the weighted average deviation from the expected value, and it gives an idea of how far above or below expected value and the actual value likely to be. It is the statistical tools for measuring risk. It measures the total risk of a security consisting both systematic and unsystematic risk. Standard deviation with lower value is acceptable.

A standard deviation can some time be misleading in comparing the risk or uncertainty surroundings alternatives if they differ in size. To adjust for the size or scale problem the standard deviation can be divided by the expected return to complete the coefficient of variance (C.V.).

Coefficient of Variance (C.V.) = $\frac{\sigma}{\overline{R}}$

Thus the coefficient of variance is a measure of relative dispersion (risk) a measure of risk per unit of expected return. The larger the CV the larger the relative risk of the investment (Van Horne and Markowitz, 2001: 94).

Coefficient of variance is the ratio of the standard deviation of a distribution to the mean of that distribution which is the measure of the relative risk.

$\overline{\text{Rj}}$= Expected return for security

n = Total number of different securities in the portfolio

While the portfolio expected return is a straight forward weighed average of returns on individual security, where a portfolio standard deviation isn't weighted average of the individual security standards deviation. To take a weighted average of individual security, standard deviation will ignore the relationship or correlated between the returns of two securities.

The standard deviation of probability distribution of possible portfolio return σ_p is

$$\sigma_p = \sqrt{\sum_{j=1}^{n}\sum_{k=1}^{n} W_j W_k COV_{jk}}$$

Where,

n = Total number of different securities in the portfolio

W_j = Proportion of total funds invested in security j

W_k = Proportion of total fund invested in security k

COV_{jk} = Covariance between the possible return of securities of j and k

The covariance of the possible return of two securities is a measure of the extent to which they are expected to very together rather than independently of each other. The covariance term in the above formula can be written as:

$COV_{jk} = P_{jk}\sigma_j\sigma_k$

Where,

P_{jk} = the correlation coefficient between possible return for securities j and k

σ_j = S.D. of the security j

σ_k = S.D. of the security k

2.9 Portfolio Management

Portfolio management is concerned with efficient management of portfolio investment in financial assets, including shares and debentures of companies. The management may be professionals, by others, or by individuals themselves. A portfolio of an individual or a corporate unit is the holding of securities and investment in financial assets. These holdings are the result of individual preferences and decision regarding risk and return. The process of portfolio management is closely and directly linked with process of decision making, the correctness of which cannot be ensured in all cases.

The basic problem of portfolio management is to establish an investment objectives or goal and then decide the best to reach the goal with the securities available. This has been stated as an attempt by the investor to obtain the maximum return and minimum risk. Portfolio management is the art of handling a pool of funds so that it not only preserves its original worth but also overtime appreciates in values and yield on adequate return consistent with the level of risk assumed (Cohen, Zinbarg and Zeikel, 1978: 591).

Investment in two or more than two assets is normally called portfolio. A portfolio is the combination of investment assets. Portfolio is the holding of securities and investment in financial assets like bond, stock etc. Portfolio management is related to the efficient portfolio investment in financial assets. Investor's rarely place their entire wealth into a single assets or investment rather they construct a portfolio or group of investments. Therefore it is need to extend analysis of risk and return to include portfolio a combination of two or more securities or assets in portfolio. It has following two types of objectives.

1. Primary objectives:
    - To minimize risk
    - To maximize return
2. Secondary objectives:

    - Regular returns
    - Stable income
    - Safety of investment
    - Tax benefit
    - Appreciation of capital

The expected return on the portfolio is simply a weighted average of the expected returns of the individual securities that they are included in the portfolio. The weights are equal securities (the weight must sum to 100%). The general formula for expected return of a portfolio ($\overline{R_p}$) is as follows:

$$\overline{R_p} = \sum_{j=1}^{n} W_j \times \overline{R_j}$$

Where,

W_j = proportion of total funds invested in security j

When j = k the coefficient is 1 as variable movement correlate perfectly with itself.

The correlation coefficient which is significant in portfolio construction is standardized statistical measure of the linear relationship between two variables. Its range from -1 (perfect negative correlation) to +1 (perfect positive correlation). Lesser the correlation higher is the reduction in portfolio risks (Ibid, 1996: 97). The positive correlation coefficient shows that the return from two securities generally moves in the same direction, while negative correlation coefficient shows that they move opposite direction and zero correlation coefficient shows that the returns from two securities are uncorrelated. They show no tendency to vary together in either a positive or negative in linear function.

2.10 Systematic Risk and Unsystematic Risk

Systematic and unsystematic risks are the terms frequently used in the portfolios context. Combining the securities that are not perfectly positively correlated helps to reduce the risk of portfolio to some extent.

Systematic risk has its source factors that affect all the marketable assets and thus cannot be diversified away. Systematic risk is due to the risk factor that affects the overall market such as changes in national economy, tax reform by the government or changes in the world energy situation. The sources of systematic risk are market pervasive. The measure of systematic risk permits an investor to evaluate an assets required rate of return relative to the systematic risk of the stock. Unsystematic risk is risk unique to a particular company or industry. It is independent of economic, political and other factor that affect all

securities in systematic manner. A wild cat risk may affect only one company a new competitor may being to produce essentially the same product.

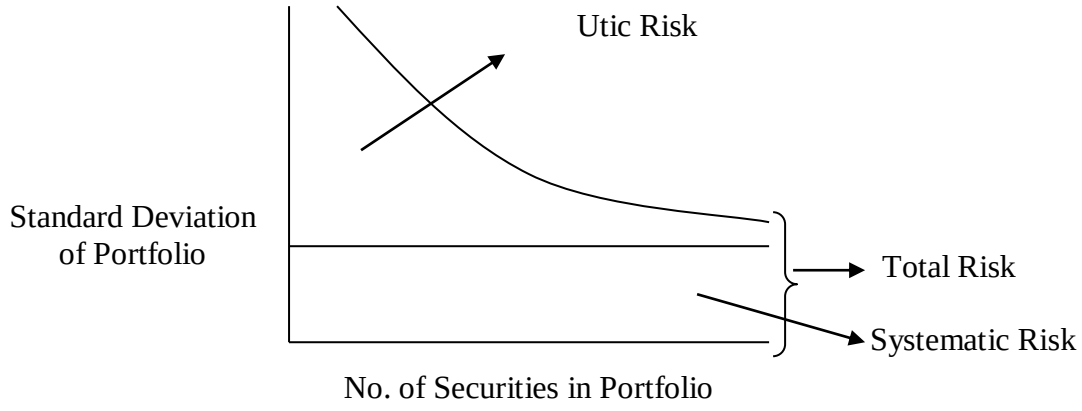
For most stocks, unsystematic risk accounts for between 60 to 70 percent of stocks total risk or standard deviation (Van Horne & Harry Markowitz, 2001: 91). This kind of risk can be reduced by diversification and even eliminated if diversification is efficient. Hence not all the risk involved in holding a stock is relevant since part of this risk can be diversified away. The relationship among systematic, unsystematic and total risk are shown below.

Total Risk = Systematic Risk + Unsystematic Risk

Where, Systematic Risk = $\sigma_j.\rho_{jm}$ and Unsystematic Risk = $\sigma_j.(1-\rho_{jm})$ here ρ_{jm} is the correlation coefficient between the return of given sock (J) and the return on market portfolio.

Figure-2.1

Systematic Risk and Unsystematic Risk



Source: Reilly & Brown, "Investment Analysis and Portfolio Management".

2.11 Capital Assets Pricing Model (CAPM)

The relationship between expected return and unavoidable risk and the valuation of securities that follows is the essence of the Capital Assets Pricing

Model (CAPM), this model was developed by William F. Sharpe and John Linter in the 1960's and it has had important implications for finance ever since. Based on the behavior of the risk averse investor there is implied an equilibrium relationship between risk and expected return for each security. In market equilibrium, a security will be expected to provide a return commensurate with its unfavorable risk. This is simply the risk of a security the greater the return that investors will except from the security.

CAPM is the model that describes the relationship between risk and expected return. In this model a security expected (required) return is the risk-free plus a premium based on the systematic risk of the security. This model is expressed as:

$R_j = R_f + \lfloor E(R_m) - R_f \rfloor \beta_j$

Where,

R_j = Required rate of return for stock j
R_f = Risk free rate
$E(R_m)$ = Expected return for market portfolio
β_j = An index of systematic risk of stock j (Beta coefficient)

Beta measures the sensitivity of a stock's return to change in the return on the market portfolio. The beta of portfolio is simply a weighted average of the individual stock betas in the portfolio (Van Horne, 1997: 100).

If beta is one (i.e. β=1) then the required return is simply the average return for all situation, that is the return on market portfolio, otherwise the higher the beta higher the risk premium and the total required return. However a relatively high beta does not guarantee a relatively high return. The actual return depends on the behavior of the market, which acts as a proxy or general economic factor.

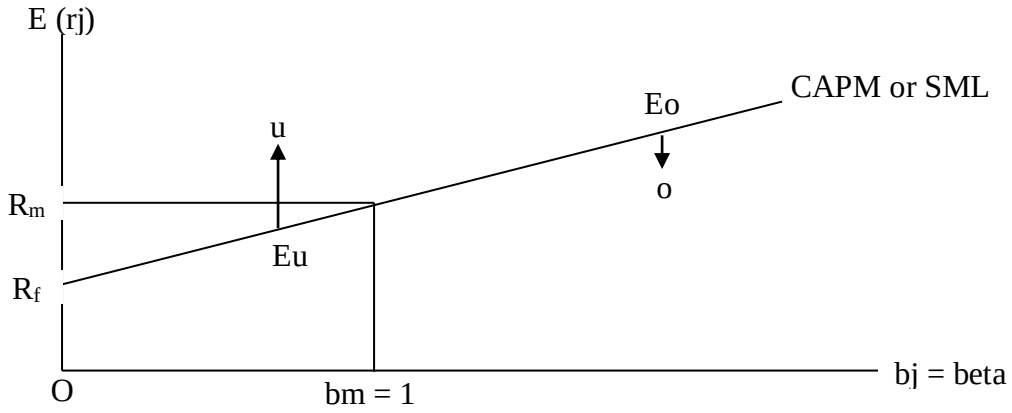
The major implication of the CAPM is that the expected return of an asset will be related to a measure of risk for that asset known as beta (β). The exact manner in which expected return and beta are related is specified by the CAPM. The model provides the intellectual basis for a number of the current practices in the investment industry (Sharpe, 2002: 261-262).

The capital asset pricing model states that the expected premium on each investment in proportional to its beta. This means that each investment should lie on the slopping security market line connecting treasury bills and market portfolio. In mid 1960s three economists William Sharpe, John Linter and Jack Treyor created the CAPM a theory which began a quest to identify the tendency portfolio. CAPM is the predominant model used for estimating equity risk and return. It is useful tools for the investment portfolio and for estimating expected rate of return. Comparison between the expected rate of return and required rate of return indicates whether the stock is under priced or overpriced. And when these two returns are equal then it is said to be market equilibrium i.e. all the stocks lies on the security market line (SML).

SML is the graphical representation of CAPM, which shows the relationship between risk and required rate of return. The SML clearly shows that returns are the increasing function, in fact a linearly increasing function or risk. Further it is only market risk that affects return. The investor receives no added return for bearing the diversifiable risk. If stocks are underpriced it lie above the SML and if they are overpriced it lie below SML. The following diagram shows the SML with overpriced and the underpriced stocks.

Figure-2.2

Capital Asset Pricing Model



Above figure depicts two assets u and o which are not in equilibrium on the CAPM. An asset u is undervalued and therefore a very desirable asset to own u's price will raise in the market as more investor purchase it. However as u price goes up its return fall. When u returns falls to the return to consistent with its beta on the SML, equilibrium is attained with o just opposite take place. Investor will attempt to sell o since it is overvalued. And therefore put downward pressure on o price. When the return on asset 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 (Ibid, 1996: 267-269).

Hence CAPM helps us to decide whether to purchase or sell the stock of the particular company. We decide by comparing required rate with the expected rate of return. The capital assets pricing model provides us a mean by which to estimate the required rate of return on a security. And on the basis of price and dividend data expected return can be calculated. With comparison of 2 return investors can analyze whether the stock is under priced or overpriced.

2.12 Reviews from Related Studies

So far focus is given in basic well-known books, which are academically accepted in most of the world. In this section reviewing procedure will slightly

twist as we review the journals, master's degree thesis and other independent studies related to the topic.

2.12.1 Reviews from International Context

In international context, several studies have been done in the field of risk & return analysis of common stock investment. Among them some major studies are reviewed as follows:

The journal of finance, published bimonthly by American finance association for many decades is taken into account. In its recent volume of august 1999, an article "Local return factors and turnover in emerging stock markets" by K. Great Rau Wenhorst has been reviewed here. There is growing empirical evidence that multiple factor are cross-sectional correlated with average returns in the united state measured over long time periods, small stocks earn higher average return than large stocks. (Bang, 1981). Fame French (1992, 1996) and Lakonishock, Shleifer and Vishny (1994) shows that value/stocks will high book-to-market (B/M), earning to price (E/P), on cash/flow to price (C/P) outperform stocks with poor prior performance (Jagdesh and Tima, 1993). The evidence that beta is also compensated for average return is weaker (Fame and French, 1992), Kothari, Shakken and Stoan 1995. The interpretation of the evidence is strongly debate. Some believe that the premiums are a compensation for pervasive risk factors; other attributes them to firm characteristics or inefficiency in the way market incorporate information into prices. Yet others average that the premiums may be biased by survivorship or data snooping.

This paper examines the sources of return variation in emerging stock market. From the perspective of collecting independent samples, emerging market countries and particularly interesting because of their relative isolation from the capital markets of other countries. Compared to developed markets, the correlation between most emerging markets and other stock markets has

historically been low (Harvey, 1995) and until recently many emerging countries restricted investment by foreign investors. Interestingly, Beakeart and Harvey (1995) found that despite the recent trend toward abolition of these restrictions and the substantial inflows of foreign capital, some emerging equity markets have actually become more segmented from world capital market. A large portion of the equity capital of emerging economies is held by local investors who are likely to evaluate their portfolios in the light of local economy and market condition (Beakeart and Harvey, 1997). (Rouwenhorst, 1999: 1439)

Robert utilized the CAPM assumption and additional that corporation can borrow and lend at risk-free interest rate. He has presented theoretical relationship of systematic risk, the firm's leverage, accounting beta, earning variability, dividend or payout and growth. Shortly these findings are as follows:

- Systematic risk of levered firm is equal to the systematic risk of the same firm without leverage.
- Between earning variability and market risk there is no direct relationship.
- There is no any theoretical relationship between size and growth of the firm and systematic risk and also theoretical basis for relationship of dividend payout and beta.
- To the according systematic risk is directly related.

This study shows that there is a theoretical relationship between systematic risk and firm's accounting beta and systematic function is not a function of earning variability, dividend policies and size and growth of firms (Bowman, 1979: 617-628).

In 20th century, Philip Zorin and William N. Geotzman have studies about global stock market. To estimate base is the main purpose of this study. About

the implication of this study, they mention "In a famous article Mehra and Prescott (1985) argue that standard general equilibrium models cannot explain the size of the risk premium as equities which average about 6% over the 1978/89 periods. They show 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 sparkled a flurry of theoretical research that explains alternatives performance structure; including dropping the expected utility assumption and introducing habit function.

One of the fundamental issues in finance is the factors that affect expected return of assets, the sensitivity of expected return to those factors and the reward for bearing this sensitivity. There is a long history of testing in this area and it is clearly one of the most investigated areas in finance. Almost in all of the examining, I am aware of involves using realized returns are therefore an unbiased relies on a belief that information surprises tend to cancel out over the period of a study and realized return are therefore an unbiased estimate of expected returns. However, I believe that there is sample evidence that this belief is misplaced. There are period's longer than 10 years during which stock market realized returns are on average less than the risk free rate (1973 to 1974). There are periods longer than 50 years in which risky long term bonds on average underperform the risk free rate (1972 to 1981). Having risky assets with an expected return above the risk fewer rates is an extremely weak condition and cannot be satisfied. In the recent past, the United States has had stock market returns of higher than 30 percent per year. While Asian markets have had negative returns (Edwin, 1999: 1100).

2.12.2 Review of other Independent Studies in Nepal

Very few independent studies can be found in the topics of finance. Specifically it is rare in the case of this research topic, 'risk and return' analysis. However, the available independent studies which are related to the Nepalese stock market and about shareholders democracy.

Radhe Shyam Pradhan carried out a study in the topic of "Stock Market Behavior on a Small Capital Market; A Case in Nepal" in 1993. The study was based on the data collected for seventeenth enterprises from 1986 through 1990 (Pradhan, 1993: 23-49).

One of the major objectives which are related to this study was "To assess the Stock market Behavior in Nepal."

- Dividend per share and market price per share was positively correlated.
- There are positive relationship between dividend payout and liquidity.
- Higher the earnings on stocks, larges the ratio of dividends per share to market price per share.

Another study was carried out by Khagendra Prasad Ojha (2000) in his mini research paper, "Financial Performance and Common Stock pricing" concludes, An investment in common stock of a corporate firm neither ensures annual return nor ensures the return of principle. Therefore, investment in commons stock is very sensitive on the ground of the risk. Dividend to commons stockholders is paid only if the firm makes an operating profit after tax and preference dividend. The company can return the principle in case of its liquidation only to extent of the residual assets after satisfying to all of its creditors and preferential shareholders. Besides this, investor have to sacrifice the return on their investment in common stock, which could be earned investing fund elsewhere in the next best opportunity.

Study is focused on the financial performance where financial activities involve decision regarding:

- Forecasting and planning of financial requirement.
- Investment decision.
- Financial decision.

Further, Ojha added that the stock price in neap is determined more by other factors rather than the financial performances of the concerned company (Ojha, 2000: 85-87).

Another study carried out by Manohar Krishna Shrestha (1999) expressed his view in relation with subject to certain extent with the topic "Shareholder's Democracy Annual General Meeting Feedback". Shrestha prefers to consider this book as an assemblage of opinions which he had express in different occasions of various annual general meeting. He has critically analyzed the situation of common stocks investors and the situation that is not improving till date.

The contents of the book have been divided into two parts. The first part includes views on the rights of the shareholders regarding how they can exercise them in democratic perspective. Whereas the second part consists of feedbacks and the issues rose by shareholders at different annual general meeting of the public limited companies and financial institutions.

Written has found the overall shareholders democracy in terms of the protection of their interest, is basically focused on the payment of satisfactory dividend and the maximization of shareholders wealth by appreciating the value of share they hold.

In many cases the exciting authorization mentality of management seems to have not considered the share holders in deciding the managerial plan and policies. Top level decision often by pass the interest of shareholders as the management lacks serious concern about the protection of shareholders rights and expectations. The annual general meeting has become a platform for shareholders to express their opinions and grievance in front of the management of board of directors. Many general meetings feedback reveal no serious response to the feelings of shareholders. Thus, it reflects unwillingness

of the management and board of directors to change their traditionally held activities towards shareholders (Ibid: 9).

Shrestha has expressed his deep concern to the government for not taking any initiative in formulating the separate act. Which protects the shareholders right despite the increase in population of shareholders in Nepal and questioned the need of separate act regarding the protection of shareholders right? (Shrestha, 1999: 12).

He has further quoted as writing company and other relating act relating to financial and industrial sector have provisioned rights of the shareholders as:

1) Voting rights
2) Participation in general meeting
3) Right of getting information
4) Electing as a board of director
5) Participation in the profit and loss of the company
6) Transferring shares
7) Proxy representation

The collective rights of shareholders are:

1) Amend the internal by laws
2) Authorize the sale of assets
3) Enter into merger
4) Enhance amount of authorized capital

As reviewed above Nepalese stock being in emerging state, study conducted previously in Nepal in relation with the subject was not specific issues but in broad manner.

2.12.3 Review of Thesis

Though risk and return is not a new for financial analyst, but there is acute shortage of the studies performed in this topic in Nepal. I have found some studies related to the topic have been conducted as a thesis for the partial fulfillment of Master's Degree in T.U. In this context, some of the thesis has been reviewed, which are as follows:

The study performs by Lila Nath Pandey (2010), in his thesis entitled. "A study on Risk and Return Analysis of Common Stock Investment" has concluded that without proper analysis of individual security, industry and overall market, it is almost impossible to beta beat the stock market. The main objectives of the study are to analyze risk and return of common stock investment, with special reference to six finance companies in Nepal. He says that investor's attitude, perception and risk handling capacity also plays a vital role in rational investment decision and diversification lowers the risk of portfolio. He further says that stock market is risky in short run hence it is necessary to prepare the investors for it. According to C.V. finance and insurance sector is best for investment whereas from the expected return point of view banking sector is best for investment.

Shankar Kumar Mishra (2009) in his thesis entitled, "Risk and Return on Common Stock Investment of Commercial Banks in Nepal", has tried calculated risk and return of the portfolio as well as common stock and has tried to suggest some ideas. He concluded that, the risk of an assets could be measured quantitatively using the standard deviation and coefficient of variance. The study is focused on the commons stock of listed commercial banks. No investors will like to invest in risk assets unless he is assured of adequate compensation for the acceptance of risk. From his analysis for risk point of view, banking sector is the best for the investment is common stock (Mishra, 2009).

Another study conducted by Gayatri Trital (2007), entitled "Risk and Return analysis of Common Stock Investment" concludes that, among all the securities common stock is known to be the most risky securities. Higher the risk, higher will be the return. Most of the investors are attracted to common stock security because of its higher expected return.

As for the investor, it is important to analyze each investment, comparing with the potential returns with the risk. On average the potential returns from an investment should compensate for the level of risk undertaken. If proper allocation of assets is performed, it can reduce risk and can even be eliminated if well diversified. Through the study conducted by Pramila Pandey did not focus on the diversification of risk through the proper allocation.

Stocks that drop dramatically when the market falls are those with high betas. The good news is that these same high beta stocks recover more quickly when the market changes from bean to bull. She has provided the following recommendation:

- Administration should be made further efficient to check the performance of individual companies. Flow of information should be more regular.
- Stocks market investment is a risky in the short term and investors need to be prepared for it (Trital, 2007).

Another study conducted by Mohan Khatiwada is also related to this topic. He has conducted a thesis on the topic of "A Study on Securities Investment in Nepal" in 1996. He conducted the study on securities investment by using four-year data from 1993-1996.

Among different objectives, the one "to analyze the stock market performance" is related to the study. In this aspect he has summarized the findings as interest rate so ascertained by financial institution for the year 1995 range from 12% to 12.75% per annum. As it is reviewed on background of commercial banks

deposits accepted on fixed term early 8% to 9% per annum interest rate in 1995.

Although interest rate fixed deposit is an immediate return generated through savings, the return on securities cannot be exactly predicted. Some of the companies have not even declared dividend for two/three years 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 has not stated the common stock return in any extent figure.

About market price movement of common stock, Khatiwada summarized that leaving some exceptional cases aside, almost all the companies experiences their market price going down by less than 50% in 1995. Even the banking group could not spare price giving down more specially; the year 1995 was a disheartening period for the stock price. It is because, almost all the company's share price during the year were down even in some case below the face value, why this deep declination in price was held? Khatiwada did not consider in this aspect (Khatiwada, 1996).

Another study performed by Buddha Raj Tamang in the year (2011) entitled "Risk and Return Analysis of commercial banks in Nepal" is also reviewed here. among different objectives his study, one is to analyze whether the common stock of commercial banks are correctly priced or not by analyzing the required rate of return using the CAPM and it also aims to measure systematic and unsystematic risk of the commercial banks. From his findings, Nepal Bangladesh Bank is placed as the higher return earner and Nepal Arab Bank as the lowest return earner where as unsystematic risk of Arab Bank is highest and that of Bank of Kathmandu is lowest. Correlation coefficient of Arab Bank shows that the return on bank goes down when market return goes up. Through the shares of banking sector are one of the heavily traded shares in Nepal none of the company's shares are correctly priced (Tamang, 2011).

Another study conducted by Yamnath Dahal (2008), under his thesis paper "Risk and Return on Common Stock Investment of Commercial Banks in Nepal" concludes that, In general, most people observe stock market investment as a black art that they know little about. Many people have unrealistically optimistic or pessimistic expectation about stock market investment or perhaps a fear of the unknowns. 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 investors cannot analyze the securities as well as market properly.

In addition; Dahal added that, proper analysis of individual security, industry and overall market is always needed. General knowledge about economic, political and technological trend will be advantageous. To win the market, shares should be holding when the market is rising and hold safer investment when it is falling.

Through the study conducted by the Dahal did not focus on the relationship between closing MPS and EPS and this study does not also focus on the view point of individual investors as well as the company (Dahal, 2008).

CHAPTER - III

RESEARCH METHODOLOGY

The main objective of this study is to analyze the risk and return of common stock investment of listed companies i.e. commercial banks. Thus this chapter is designed to meet the set objectives. The brief discussion of methodology followed in the study is given below. This chapter includes the brief description of research design, population and sample, source of data, data collection instruments and procedures and methods and tools used for analyzing the data.

3.1 Research Design

The present study is based on descriptive and analytical research design. Descriptive research design is used to describe the relationship between risk and return from tables, graphs, trend lines and figures with basic calculation of present collected data. Similarly analytical research design is used to analyze the realized return, expected return, standard deviation, coefficient of variation, correlation coefficient, beta coefficient and risk premium of sampled banks. Analytical research design evaluates the present data clearly. The study has been carried out the five years periods from 1st July 2006 to 1st 2011.

3.2 Population and Sample

All thirty one listed Nepalese commercial bank will considers as the total population out of them this study will be concern with five commercial banks as a convenience sample, those bank are Bank of Kathmandu Limited, Nepal Investment Bank Limited, Standard Chartered Bank Nepal Limited, NABIL Bank Limited and Nepal SBI Bank Limited.

Population Size =31
Sample Size = 5

3.2.1 Bank of Kathmandu Limited (BOKL)

Bank of Kathmandu Limited (referred to as 'BOK or 'the Bank' hereinafter) is a limited liability company domiciled in Nepal. Its registered office is at Kamalpokhari, Kathmandu, Nepal. The Bank is listed with Nepal Stock Exchange Ltd. and provides full commercial banking services (Class A) as licensed by Nepal Rastra Bank (NRB).

The accompanied financial statements have been approved for publication by the Board of Directors of the Bank in its meeting held on August 11, 2011. The Board of Directors acknowledges the responsibility of preparation of financial statements of the Bank.

The other information of the bank is as below:

Authorized Capital = Rs. 2000 Million
Issued Capital = Rs. 1359.48 Million
Paid up Capital = Rs. 1359.48 Million
Face Value Per Share = Rs. 100
Listed in NEPSE = 2054/04/02 B.S.
Corporate Office = Kamalpokhari, Kathmandu

3.2.2 Nepal Investment Bank Limited (NIBL)

Nepal Investment Bank Ltd. (NIBL), previously Nepal Indosuez Bank Ltd., was established in 1986 as a joint venture public limited company between Nepali and French partners as per the then Companies Act 1964. The French partner (holding 50% of the capital) was Credit Agricole Indosuez, a subsidiary of one of the largest banking groups in the world. When Credit Agricole Indosuez decided to divest, a group of companies comprising of bankers, professionals, industrialist and businessmen acquired 50% of the holdings of Credit Agricole Indosuez in Nepal Indosuez Bank in April 2002. The name of the Bank was then changed to Nepal Investment Bank Ltd. upon approval from the Bank's Annual General Meeting, Nepal Rastra Bank and Company Registrar's Office.

NIBL is a "A" class licensed institution licensed under the Bank and Financial Institution Act, 2006. The registered office of the Bank is located at Durbar Marg, Kathmandu. Its ordinary shares are listed in the Nepal Stock Exchange for public trading. The shareholding structure comprises of:

- A group of companies holding 50% of the Capital.
- Rastriya Banijya Bank holding 15% of the Capital.
- Rastriya Beema Sansthan holding 15% of the Capital.
- The general public holding 20% of the Capital.

The other information of the bank is as below:

Authorized Capital = Rs. 4000 Million
Issued Capital = Rs. 2409.10 Million
Paid up Capital = Rs. 2409.10 Million
Face Value Per Share = Rs. 100
Listed in NEPSE = 2042/08/05 B.S.
Corporate Office = Durbar Marg, Kathmandu

3.2.3 Standard Chartered Bank Limited (SCBNL)

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 being a subsidiary of Standard Chartered Bank, which is one of the leading international banks in the world.

The other information of the bank is as below:

Authorized Capital = Rs. 2000 Million
Issued Capital = Rs. 1610.17 Million
Paid up Capital = Rs. 1610.17 Million
Face Value Per Share = Rs. 100
Listed in NEPSE = 2045/03/20 B.S.
Corporate Office = Naya Baneshwar, Kathmandu

3.2.4 NABIL Bank Limited (NABIL)

Nabil Bank Limited (hereinafter referred to as "the Bank") is a joint venture public limited company, incorporated on 12th July 1984 as per the then Companies Act 1964 of Nepal, and domiciled in Nepal. It is a "Ka" class licensed institution licensed under the Bank and Financial Institutions Act, 2006.The registered office of the Bank is located at Nabil Centre, Durbar Marg, Kathmandu, Nepal. Its ordinary shares (Class C), institutional investor shares (Class B) and promoter shares (Class A) are listed on the Nepal Stock Exchange Limited (the sole stock exchange in Nepal) for public trading.

The other information of the bank is as below:

Authorized Capital = Rs. 2100 Million
Issued Capital = Rs. 2029.77 Million
Paid up Capital = Rs. 2029.77 Million
Face Value Per Share = Rs. 100
Listed in NEPSE = 2042/09/08 B.S.
Corporate Office = Durbar Marg, Kathmandu

3.2.5 Nepal SBI Bank Limited (NSBIL)

Nepal SBI Bank Limited is a limited liability public quoted company domiciled in Nepal. The registered office of the Bank is situated at Hattisar, Kathmandu, Nepal. Nepal SBI Bank Limited has become a foreign subsidiary of State Bank of India with effect from 14.06.2009. The principal activities of the Bank consist of the business of commercial banking and other financial services in Nepal. The Financial Statements for the year ended on 16th July 2011 (Ashadh 32, 2068) were authorized for issue by the BOD in its 315th meeting held on October 13, 2011.

The other information of the bank is as below:

Authorized Capital = Rs. 2000 Million
Issued Capital = Rs. 1869.30 Million
Paid up Capital = Rs. 1869.30 Million
Face Value Per Share = Rs. 100

Listed in NEPSE = 2051/10/03 B.S.

Corporate Office = Hattisar, Kathmandu

3.3 Data Collection Techniques

The problem of the study lies in the fact that to what extent the MPS of selected companies is correlated with various financial indicators like EPS, DPS etc. and what the degree of risk is not involves in the investment of common stock of the selected companies from the view points of investors. In order to achieve concrete answer to these questions it needs various information.

First of all the officials, web site www.nepalstock.com has been browsed in order to download the financial reports of the concerned companies and other relevant information's.

On the other hand in order to review different books and previous studies frequent visits have been made Post Graduate Campus Library, Biratnagar, Mahendra Multiple Campus Library, Dharan, in order to collect relevant documents.

Source of data collection & procedure is summarized below:

- Financial documents provided by the companies
- Trading report published by Nepal Stock Exchange Limited
- Related websites
- Materials published in papers and magazines
- Other related books, booklets and unpublished thesis

3.4 Data Analysis Tools

The collected data are analyzed by using various financial tools as well as statistical tools that are given and defined below: -

3.4.1 Market Price of Stock (MPS)

As we follow the market price of shares of companies we can get there types of prices high, low and closing. For the analysis we can take approaches either average price (i.e. high and low) or closing price. Here in closing price is taken as the market price of the stock.

3.4.2 Dividend Per Share (DPS)

Dividend is that portion of earning which pays to its shareholder. As we have consider the total dividend paid to shareholders. Dividend per share is calculated by using the following model.

DPS = Cash Div. + Stock Div.
In case of Stock Dividend,
Total Dividend Amount = Cash Div. + % of Stock Div. × Next Year's MPS
Where,
MPS = Market Price Per Share

3.4.3 NEPSE Index (L_t)

NEPSE index is the market index of Nepal Stock Exchange. It is used for the calculation of expected return on market. Calculation of return on market, closing indeed of the particular year is considered.

3.4.4 Return on Market (R_m)

It is the percentage increase in NEPSE index. To calculation of return on market we can use following relation.

$$R_m = \frac{L_t - L_{t-1}}{L_{t-1}}$$

Where,

R_m = Market Return.

L_t = NEPSE Index at Time Period t.

L_{t-1} = NEPSE Index at Time Period t-1.

3.4.5 Return on Common Stock Investment (R_j)

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

Symbolically,

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

Where,

R = Actual rate of return on common stock at time t.

P_t = Price of Stock at a Time Period t.

P_{t-1} = Price of Stock at a time Period t-1.

D_t = Cash Dividend Received at a time t.

3.4.6 Expected Return on Common Stock ($\bar{R}j$)

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

Symbolically,

$$\bar{R}j = \frac{\sum Rj}{N}$$

Where,

$\bar{R}j$ = Expected rate of return on stock.

$\sum$ = Sign of Summation.

R_j = Realized Rate of Return on Stock j.

N = Number of Years.

3.4.7 Standard Deviation (σ)

It is a statistical measure of the distribution of return around its mean. It is the square root of the variance of the returns S.D. is the measure of the total risk of the assets i.e. it means the dispersion of returns around the mean return. S.D. can be calculated by using following formula,

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

Where,

σ_j = Standard Deviation of Return on Stock j.

3.4.8 Coefficient of Variation (C.V.): Unitary Risk Measure

The risk we calculated using standard deviation is the total risk on investment. If we needed to calculate risk per unit of expected return, we can use of coefficient of variation. The formula to calculate coefficient of variation is as follows:

$$CV_j = \frac{\sigma_j}{R_j} \times 100\%$$

CV_j = Coefficient of Variation on Stock j.

σ_j = Standard Deviation on Stock j.

R_j = Expected Rate of Return on Stock j.

Coefficient of variation is the unitary risk measure. It gives the result regarding the unit of risk to bear for earning 1 unit of return.

3.4.9 Beta Co-efficient (β)

The standard deviation is a measure of the total risk of the asset, i.e. it measures the dispersion of return around the mean return. Earlier it was suggested that rational investors should expect higher returns at higher level of investment risk. Does it mean that the higher the standard deviation of asset returns the higher the required return? The CAPM suggests that the total risk as measures by standard deviation contain two parts, diversifiable and non-diversifiable risk and that total risk is equal to the sum of its parts (Cheney & Moses, 2002: 63).

Total Risk = Unsystematic Risk + Systematic Risk

Logically the systematic risk is the covariance between the return of an individual asset or portfolio and the returns of the market portfolio. The measure of systematic risk is represents by beta and can be calculated by following formula.

Symbolically,

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

Where,

β_j = Beta co-efficient of Stock j.

Cov (R_j, R_m) = Covariance between Return on Stock j.

$\sigma^2 m$ = Variance of Market Return.

$$\text{Cov}(R_j.R_m) = \frac{\sum_{i=1}^{n}(R_j - \overline{R_j})(R_m - \overline{R_m})}{n-1}$$

The beta coefficient is a measure of non-diversifiable or systematic risk. An assets or a portfolio with a beta greater than 1 is considered to be aggressive (more risk than the market). An asset or portfolio with a beta less than 1 is considered to be defensive (less risky than the market).

3.4.10 Correlation Co-efficient

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

$$P_{ij} = \frac{Cov_{ij}}{\sigma_i \sigma_j}$$

Where, P_{ij} = Correlation Co-efficient for Securities i and j.

Cov_{ij} = Co-variance between Securities i and j.

$\sigma_i \sigma_j$ = Standard Deviation of Returns for Securities i and j.

3.4.11 Portfolio Risk and Portfolio Return

A portfolio is a collection of investment securities. Portfolio theory deals with the selection of optimal portfolios, i.e. portfolios that provide the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return. Calculating and analyzing portfolio risk is not straight forward as calculating portfolios expected return. We have to go through a long process for its calculation any analysis.

Portfolio Risk (σ_p)

It is the measure of combined standard deviation of stocks held in the portfolio, with reference to individual stocks corresponding to correlation contribution. The formula for the calculation of portfolio risk for two assets case is given by:

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B Cov(A,B)}$$

Where,

σ^2_p = Standard Deviation of Portfolio A and B

σ^2_A = Variance of assets A, i.e. risk of assets A

σ^2_B= Variance of assets A, i.e. risk of assets A

W_A = Weight of assets A

W_B = Weight of assets B

Portfolio Return ($\overline{R}_P$)

While the portfolio expected return is straight forward weight average of return on the individual securities, the portfolio standard deviation is not the weighted average of individual security's standard deviation. To take a weighted average of individual security standard deviations would be to ignore the relationship, or correlation however as no effect on the portfolio expected return. Correlation between securities returns complicates our calculation of portfolio standard deviation by foreign us to calculate the covariance between returns for every possible pair wise combination of securities in the portfolio. But this dark could of mathematical complications contains a silver lining correlation between securities provides for the possibilities of eliminating some without reducing potential returns (Van Horne, 1997: 96).

Portfolio is the combination of two or more securities or asset and portfolio return is simply a weighted average of individual stock returns. The return on the portfolio, in case of only two assets portfolio is given by:

$$\overline{R}_P = W_A \overline{R}_A + W_B \overline{R}_B$$

Where,

$\overline{R}_P$ = Expected return on portfolio of stock A and B.

W_A = weighted of investment on stock A.

W_B = weighted of investment on stock B.

$W_A + W_B = 1$ or 100% always.

Risk Minimizing Portfolio:

It is the proportion of stock that minimizes the possible (unsystematic) risk.

Symbolically,

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

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.

Cov (R_A. R_B) = Covariance of returns between stock A & B.

3.4.12 Capital Assets Pricing Model (CAPM)

CAPM is the model, which gives the required rate of return of common stock. Comparison of required rate of return and expected rate of return gives the result whether the stock is overpriced or under-price. For the analysis risk free rate of return is needed i.e. RF. Here for the study the return on the Treasury bill issued by Nepal Rastra Bank is taken as risk free return. NRB issue the T.B. on each treasury of 91 and 364 days. On each issue the T.B. has different rates set up as the bidders bid for it. Here as suggested by the Treasury bill section of NRB the rate of the interest of T.B. is taken, which is approximately 2.71%. The CAPM equation is written as follows:

$$\sum(R_J) = R_{f+} (R_m - R_f)\,\beta_J$$

Where,

$\sum(R_J)$ = Expected return on assets

R_f = Risk free rate of return

R_m = Market return

β_J = coefficient of beta of stock j

3.4.13 Testing Hypothesis

Following hypothesis is set in this study paper

Step (1): Setting of Hypothesis

- **Null Hypothesis (H_0):** $\mu = \mu_0$ i.e. there is no significance difference between the expected return of common stock of listed commercial banks & overall market return.
- **Alternative Hypothesis (H_1):** $\mu \neq \mu_0$ i.e. there is significance difference between the expected return of common stock of listed commercial banks & overall market return.

Step (2): Calculation of H_0 Test Statistic

$$t_{cal} = \frac{\overline{X} - \mu}{\frac{S}{\sqrt{n}}}$$

Where,

t_{cal} = Calculated Value of 't'

$\overline{X}$ = Arithmetic Mean of Sample Statistic

μ = Arithmetic Mean of Population Parameter

S = Sample Standard Deviation

n = Sample Size

Step (3): Level of Significance

Fix the level of significance $\alpha = 5\%$ unless or otherwise stated and specify whether the alternative hypothesis is one tailed or two tailed test.

Step (4): Degree of Freedom (d.f.) = n-1

Step (5): Tabulated or Critical Value of 't' (i.e. t_{tab})

The tabulated or critical value of t at α% level of significance for one tailed or two tailed test at (n-1) degree of freedom from student's t-distribution table.

Step (6): Decision

If calculated value of t (i.e. t_{cal}) is less or equal to tabulated value of t (i.e. t_{tab}), the null hypothesis (H_0) is accepted and vice-versa.

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

This chapter deals with the analysis and finding of the collected data. The collected data are tabulated, analyzed, interpreted and presented to meet the objective of the research. All the calculations are shown in the appendices where the method of calculation is as mentioned in the research and methodology chapter. The first section of this chapter provides the picture about the risk and return characteristic of common stock of individual bank. The second section consists of a comparative analysis of risk and return of the individual bank. The third section analyses the risk and return relationship of individual stock and different sector with that of market. The fourth section measures the systematic and unsystematic risk of the individual bank. The fifth section examines whether the shares of commercial banks are correctly priced and the sixth sections is focused to construct an optimal portfolio. The last section highlights the empirical findings of the analysis.

4.1 Analysis of Individual Commercial Banks

As the study has taken a special reference to listed commercial banks, common stock of listed commercial banks is analyzed separately. There are thirty one commercial banks in operation till now. But only twenty- five banks are listed in NEPSE. Among them the study has focused on the five commercial banks. Although data are coverage for last five years, each bank is introduced and their common stocks risk and return are analyzed here.

4.1.1 Bank of Kathmandu Limited (BOKL)

MPS, Dividend and EPS of common stock of BOKL are shown in the Table-4.1 and Year, Closing MPS & EPS movement of common stock of BOKL are shown in the Figure-4.1.

Table-4.1

MPS, Dividend and EPS of the C.S. of BOKL

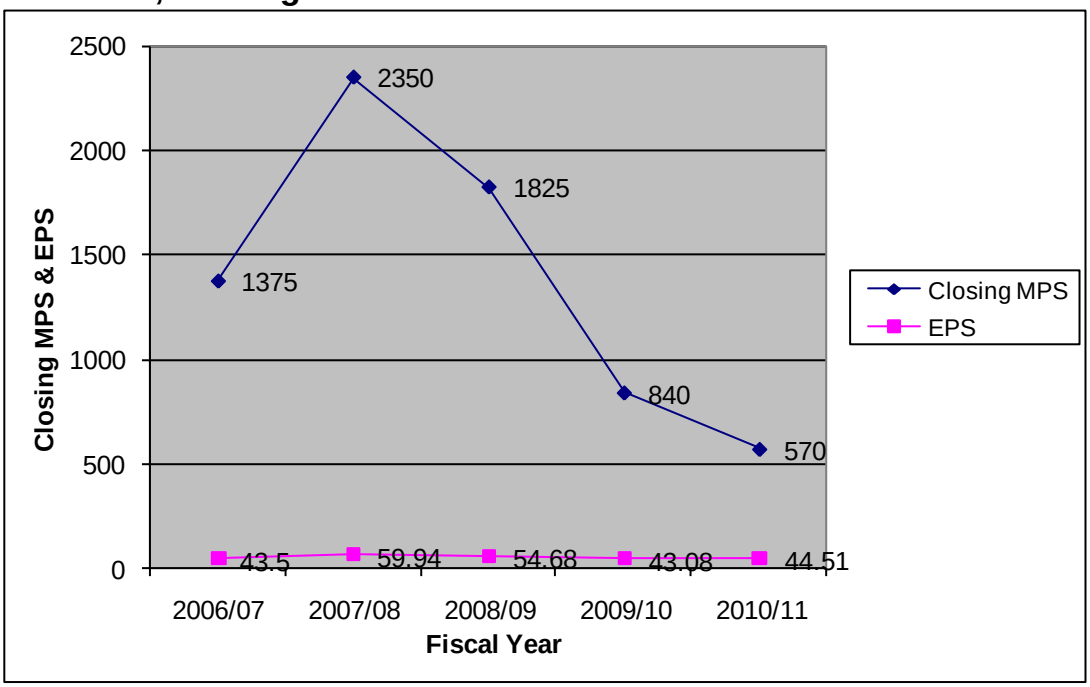
(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)
2006/07	1375	20	0	20	43.50
2007/08	2350	2.11	40	732.11	59.94
2008/09	1825	7.37	40	343.37	54.68
2009/10	840	15	15	100.50	43.08
2010/11	570	16.75	18	129.79	44.51

Source: Annual Report of BOKL F/Y 2011/12, Appendix-I.

Figure-4.1

Year, Closing MPS & EPS movement of the C.S. of BOKL



According to the above Table-4.1 and Figure-4.1, we see that Closing MPS of BOKL is highest in the F/Y 2007/08 (i.e. Rs. 2350) and lowest in the F/Y 2010/11 (i.e. Rs. 570). Closing MPS of BOKL is in increasing trend from the F/Y 2006/07 to F/Y 2007/08 and then decreasing trend from the F/Y 2007/08 to F/Y 2010/11. BOKL is paying Cash DPS every year and paying Stock

Dividend from the F/Y 2007/08 to F/Y 2010/11. BOKL is paid highest Total Dividend in the F/Y 2007/08 (i.e. Rs. 732.11) and lowest in the F/Y 2006/07 (i.e. Rs. 20). EPS of BOKL is highest in the F/Y 2007/08 (i.e. Rs. 59.94) and lowest in the F/Y 2009/10 (i.e. Rs. 43.08). EPS of BOKL is in increasing trend from the F/Y 2006/07 to F/Y 2007/08, decreasing trend from the F/Y 2007/08 to F/Y 2009/10 and then decreasing trend from the F/Y 2009/10 to F/Y 2010/11.

Realized Return (R), Expected Return ($\bar{R}$), Standard Deviation (σ) and Coefficient of Variation (C.V.) of the Common Stock of BOKL: The Year-end price (i.e. closing MPS) and dividend amounts are used to calculate realized rate of return for each year. Table-4.2 shows the calculation of yearly-realized return, expected return, standard deviation and co-efficient of variation of the common stock of BOKL.

Table-4.2

Realized Return, Expected Return, S.D. and C.V. of the C.S. of BOKL

(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Total Dividend (Rs.)	R = $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$(R-\bar{R})$	$(R-\bar{R})^2$
2006/07	1375	20	0.6412	0.4104	0.1684
2007/08	2350	732.11	1.2415	1.0107	1.0215
2008/09	1825	343.37	-0.0773	-0.3081	0.0949
2009/10	840	100.50	-0.4847	-0.7155	0.5119
2010/11	570	129.79	-0.1669	-0.3977	0.1582
Total			**1.1538**		**1.9549**

We have,

Expected Return ($\bar{R}$) = $\frac{\sum R}{n} = \frac{1.1538}{5} = 0.2308$

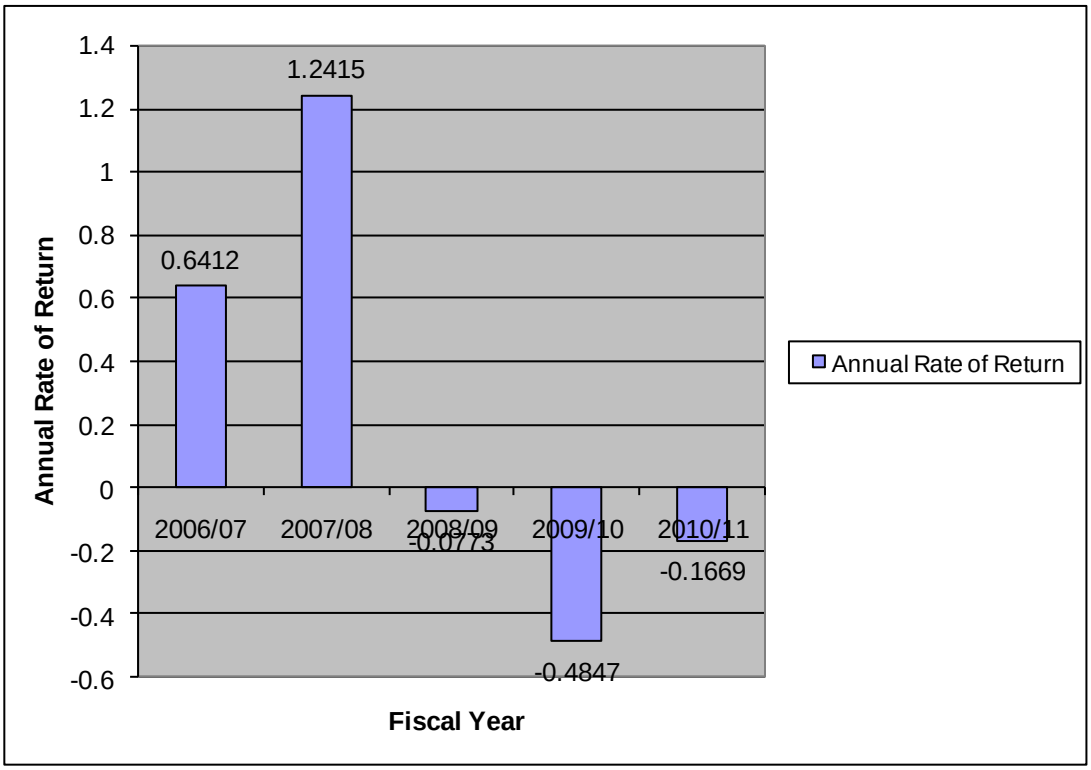
Standard Deviation (σ) = $\sqrt{\frac{\sum (R-\bar{R})^2}{n-1}} = \sqrt{\frac{1.9549}{5-1}} = 0.6991$

Coefficient of Variation (C.V.) = $\frac{\sigma}{R} = \frac{0.6991}{0.2308} = 3.0290$

The Expected Return of BOKL is 0.2308 with Total Risk (measured by S.D.) of 0.6991. The C.V. of BOKL is 3.0290 which indicate that the investor needs to sacrifice 3.0290 unit of risk for per unit return.

Figure-4.2

Year-wise Annual Rate of Return of the C.S. of BOKL



The Figure-4.2 shows that the Annual Rate of Return of C.S. of BOKL in several years. The Annual Rate of Return is maximum on F/Y 2007/08 i.e. 1.2415 which shows highest return profitable while the Annual Rate of Return is negative in the F/Y 2008/09, F/Y 2009/10 and F/Y 2010/11 i.e. -0.0773, -0.4847 and -0.1669 respectively.

4.1.2 Nepal Investment Bank Limited (NIBL)

MPS, Dividend and EPS of common stock of NIBL are shown in the Table-4.3 and Year, Closing MPS & EPS movement of common stock of NIBL are shown in the Figure-4.3.

Table-4.3

MPS, Dividend and EPS of the C.S. of NIBL

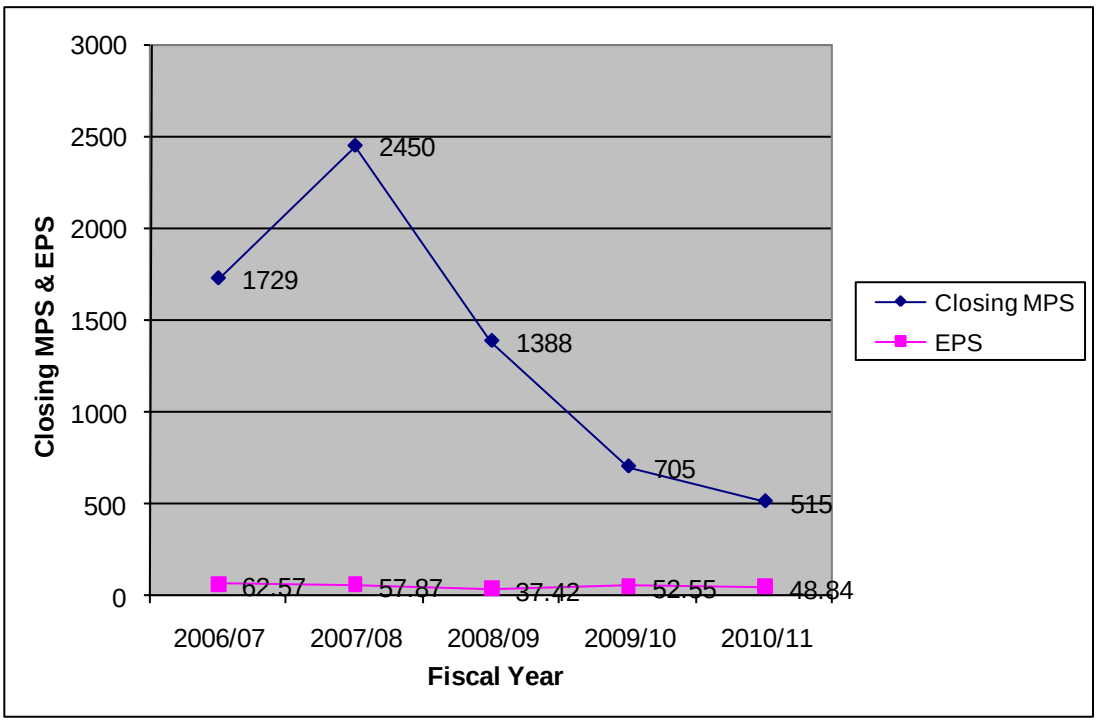
(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)
2006/07	1729	5	25	617.5	62.57
2007/08	2450	7.5	33.33	470.12	57.87
2008/09	1388	20	0	20	37.42
2009/10	705	25	0	25	52.55
2010/11	515	25	25	152.75	48.84

Source: Annual Report of NIBL F/Y 2009/10 & F/Y 2011/12, Appendix-II.

Figure-4.3

Year, Closing MPS & EPS movement of the C.S. of NIBL



According to the above Table-4.3 and Figure-4.3 shows that, Closing MPS of NIBL is highest in the F/Y 2007/08 (i.e. Rs. 2450) and lowest in the F/Y 2010/11 (i.e. Rs. 515). Closing MPS of NIBL is in increasing trend from the F/Y 2006/07 to F/Y 2007/08 and then decreasing trend from the F/Y 2007/08 to F/Y 2010/11. NIBL is paying Cash DPS every year and paying Stock

Dividend in the F/Y 2006/07, F/Y 2007/08 and F/Y 2010/11. NIBL is paid highest Total Dividend in the F/Y 2006/07 (i.e. Rs. 617.50) and lowest in the F/Y 2008/09 (i.e. Rs. 20). EPS of NIBL is highest in the F/Y 2006/07 (i.e. Rs. 62.57) and lowest in the F/Y 2008/09 (i.e. Rs. 37.42). EPS of NIBL is in decreasing trend from the F/Y 2006/07 to F/Y 2008/09, increasing trend from the F/Y 2008/09 to F/Y 2009/10 and then decreasing trend from the F/Y 2009/10 to F/Y 2010/11.

Realized Return (R), Expected Return ($\bar{R}$), Standard Deviation (σ) and Coefficient of Variation (C.V.) of the Common Stock of NIBL: The Year-end price (i.e. closing MPS) and dividend amounts are used to calculate realized rate of return for each year. Table-4.4 shows the calculation of yearly-realized return, expected return, standard deviation and co-efficient of variation of the common stock of NIBL.

Table-4.4

Realized Return, Expected Return, S.D. and C.V. of the C.S. of NIBL

(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Total Dividend (Rs.)	R = $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$(R-\bar{R})$	$(R-\bar{R})^2$
2006/07	1729	617.5	0.8623	0.7425	0.5513
2007/08	2450	470.12	0.6889	0.5691	0.3239
2008/09	1388	20	-0.4253	-0.5451	0.2971
2009/10	705	25	-0.4741	-0.5939	0.3527
2010/11	515	152.75	-0.0528	-0.1726	0.0298
Total			**0.5990**		**0.1198**

We have,

Expected Return ($\bar{R}$) = $\frac{\sum R}{n} = \frac{0.5990}{5} = 0.1198$

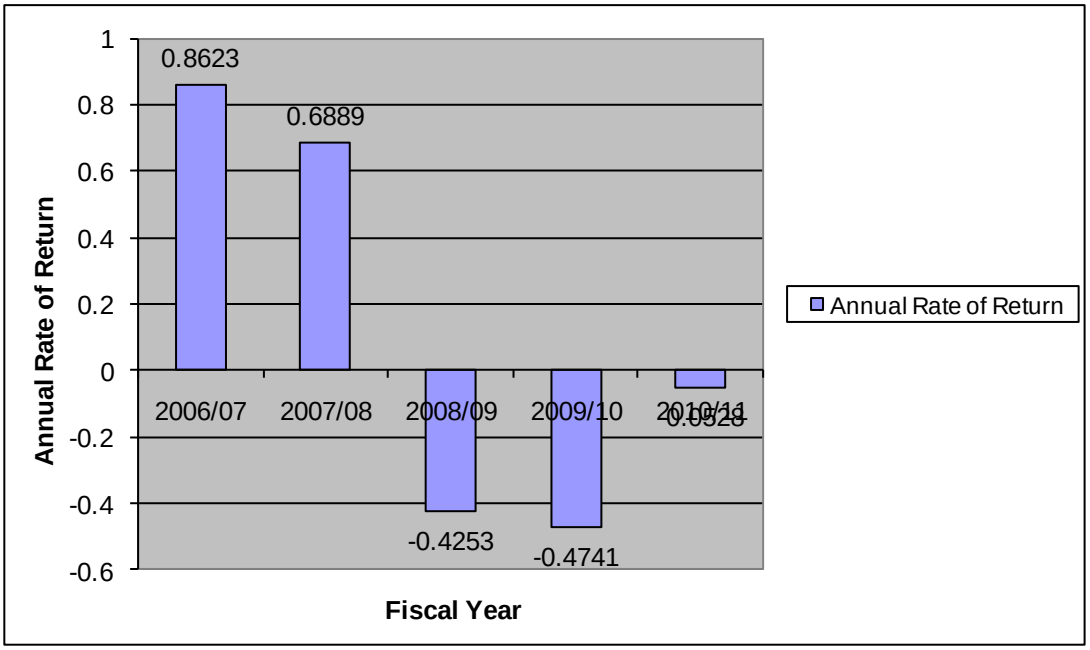
Standard Deviation (σ) = $\sqrt{\frac{\sum(R-\bar{R})^2}{n-1}} = \sqrt{\frac{1.5548}{5-1}} = 0.6235$

Coefficient of Variation (C.V.) = $\frac{\sigma}{\bar{R}} = \frac{0.6235}{0.1198} = 5.2045$

The Expected Return of NIBL is 0.1198 with Total Risk (measured by S.D.) of 0.6235. The C.V. of NIBL is 5.2045 which indicate that the investor needs to sacrifice 5.2045 unit of risk for per unit return.

Figure-4.4

Year-wise Annual Rate of Return of the C.S. of NIBL



The Figure-4.4 shows that the Annual Rate of Return of C.S. of NIBL in several years. The Annual Rate of Return is maximum on F/Y 2006/07 i.e. 0.8623 which shows highest return profitable while the Annual Rate of Return is negative in the F/Y 2008/09, F/Y 2009/10 and F/Y 2010/11 i.e. -0.4253, -0.4741 and -0.0528 respectively.

4.1.3 Standard Chartered Bank Nepal Limited (SCBNL)

MPS, Dividend and EPS of common stock of SCBNL are shown in the Table-4.5 and Year, Closing MPS & EPS movement of common stock of SCBNL are shown in the Figure-4.5.

Table-4.5

MPS, Dividend and EPS of the C.S. of SCBNL

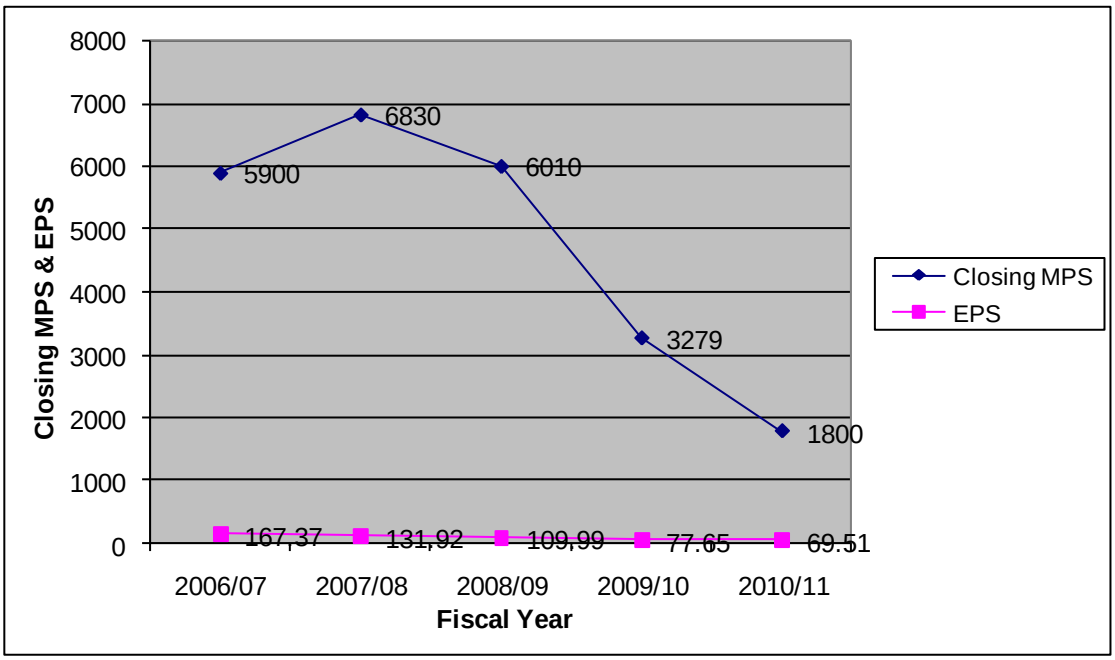
(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)
2006/07	5900	80	50	3495	167.37
2007/08	6830	80	50	3085	131.92
2008/09	6010	50	50	1689.50	109.99
2009/10	3279	55	15	325	77.65
2010/11	1800	50	0	50	69.51

Source: Annual Report of SCBNL F/Y 2009/10 & F/Y 2011/12, Appendix-III.

Figure-4.5

Year, Closing MPS & EPS movement of the C.S. of SCBNL



According to the above Table-4.5 and Figure-4.5, we see that Closing MPS of SCBNL is highest in the F/Y 2007/08 (i.e. Rs. 6830) and lowest in the F/Y 2010/11 (i.e. Rs. 1800). Closing MPS of SCBNL is in increasing trend from the F/Y 2006/07 to F/Y 2007/08 and then decreasing trend from the F/Y 2007/08 to F/Y 2010/11. SCBNL is paying Cash DPS every year and paying Stock Dividend from the F/Y 2006/07 to F/Y 2009/10. SCBNL is paid highest Total

Dividend in the F/Y 2006/07 (i.e. Rs. 3495) and lowest in the F/Y 2010/11 (i.e. Rs. 50). EPS of SCBNL is highest in the F/Y 2006/07 (i.e. Rs. 167.37) and lowest in the F/Y 2010/11 (i.e. Rs. 69.51). EPS of SCBNL is in decreasing trend from the F/Y 2006/07 to F/Y 2010/11 which is a bad sign for the bank and its investors.

Realized Return (R), Expected Return ($\bar{R}$), Standard Deviation (σ) and Coefficient of Variation (C.V.) of the Common Stock of SCBNL: The Year-end price (i.e. closing MPS) and dividend amounts are used to calculate realized rate of return for each year. Table-4.6 shows the calculation of yearly-realized return, expected return, standard deviation and co-efficient of variation of the common stock of SCBNL.

Table-4.6

Realized Return, Expected Return, S.D. and C.V. of the C.S. of SCBNL

(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Total Dividend (Rs.)	R = $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	(R–$\bar{R}$)	(R–$\bar{R}$)^2
2006/07	5900	3495	1.4887	1.1966	1.4319
2007/08	6830	3085	0.6805	0.3884	0.1509
2008/09	6010	1689.50	0.1273	-0.1648	0.0272
2009/10	3279	325	-0.4003	-0.6924	0.4794
2010/11	1800	50	-0.4358	-0.7279	0.5298
Total			**1.4604**		**2.6192**

We have,

Expected Return ($\bar{R}$) = $\frac{\sum R}{n} = \frac{1.4604}{5} = 0.2921$

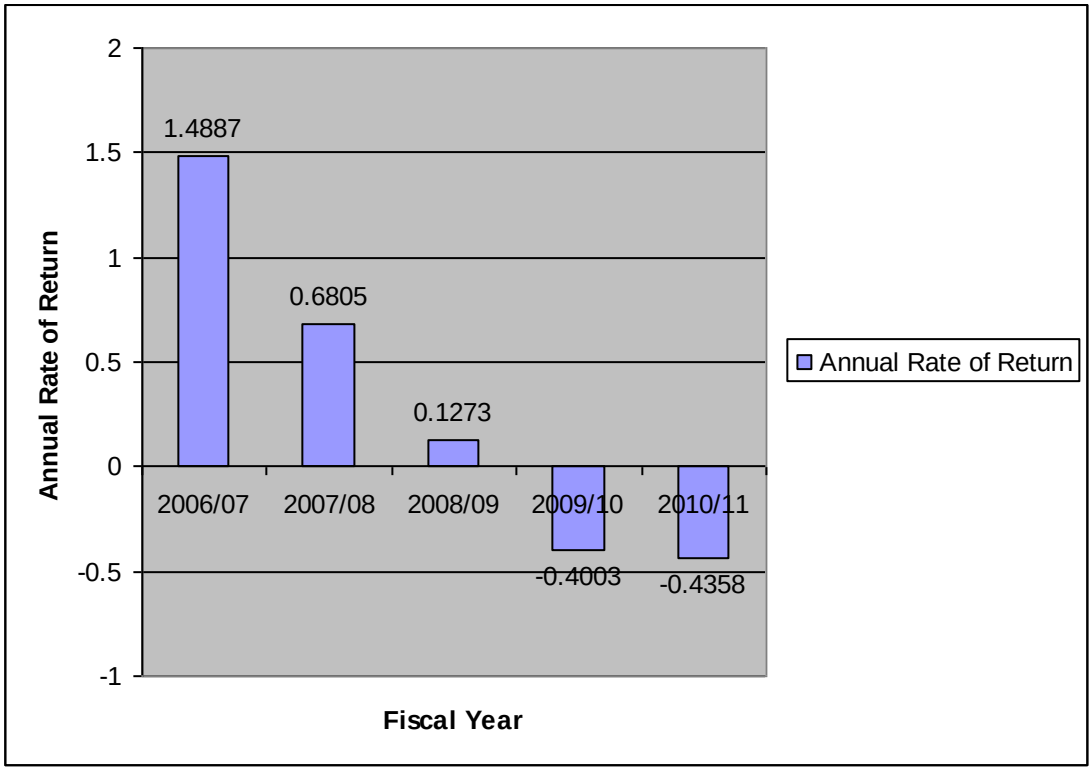
Standard Deviation (σ) = $\sqrt{\frac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\frac{2.6192}{5-1}} = 0.8092$

Coefficient of Variation (C.V.) = $\frac{\sigma}{\bar{R}} = \frac{0.8092}{0.2921} = 2.7703$

The Expected Return of SCBNL is 0.2921 with Total Risk (measured by S.D.) of 0.8092. The C.V. of SCBNL is 2.7703 which indicate that the investor needs to sacrifice 2.7703 unit of risk for per unit return.

Figure-4.6

Year-wise Annual Rate of Return of the C.S. of SCBNL



The Figure-4.6 shows that the Annual Rate of Return of C.S. of SCBNL in several years. The Annual Rate of Return is maximum on F/Y 2006/07 i.e. 1.4887 which shows highest return profitable while the Annual Rate of Return is negative in the F/Y 2009/10 and F/Y 2010/11 i.e. -0.4003 and -0.4358 respectively.

4.1.4 NABIL Bank Limited (NABIL)

MPS, Dividend and EPS of common stock of NABIL are shown in the Table-4.7 and Year, Closing MPS & EPS movement of common stock of NABIL are shown in the Figure-4.7.

Table-4.7

MPS, Dividend and EPS of the C.S. of NABIL

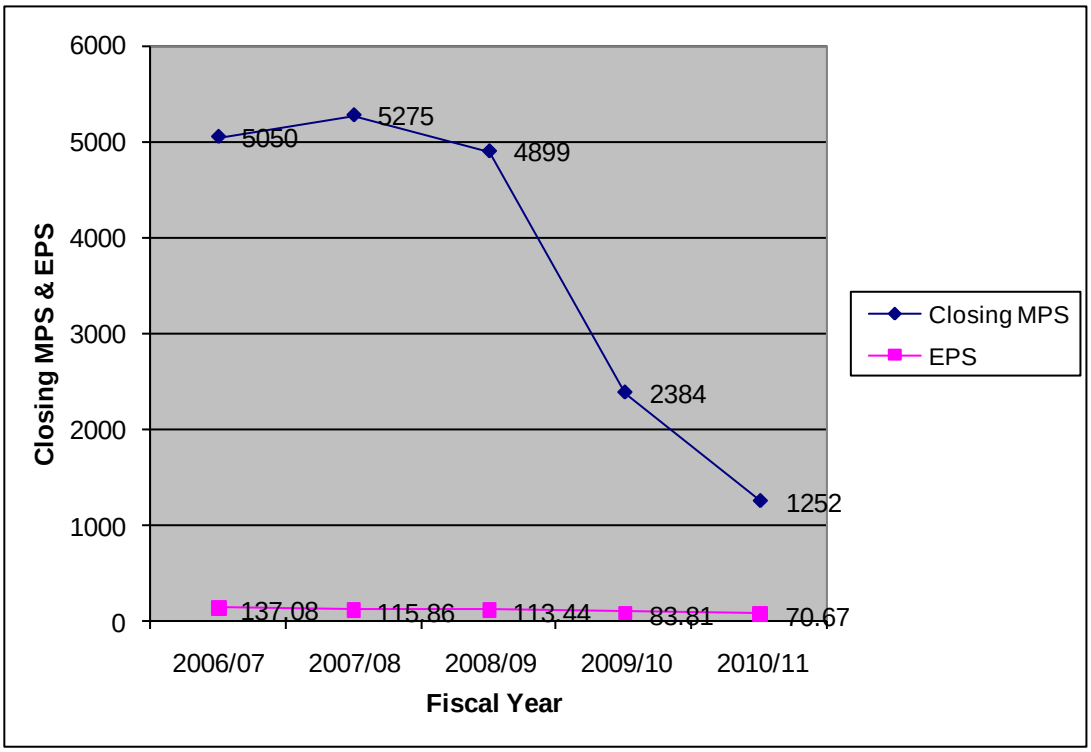
(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)
2006/07	5050	100	40	2210	137.08
2007/08	5275	60	40	2019.60	115.86
2008/09	4899	35	50	1227	113.44
2009/10	2384	30	40	530.80	83.81
2010/11	1252	30	0	30	70.67

Source: Annual Report of NABIL F/Y 2011/12, Appendix-IV.

Figure-4.7

Year, Closing MPS & EPS movement of the C.S. of NABIL



According to the above Table-4.7 and Figure-4.7 shows that, Closing MPS of NABIL is highest in the F/Y 2007/08 (i.e. Rs. 5275) and lowest in the F/Y 2010/11 (i.e. Rs. 1252). Closing MPS of NABIL is in increasing trend from the F/Y 2006/07 to F/Y 2007/08 and then decreasing trend from the F/Y 2007/08

to F/Y 2010/11. NABIL is paying Cash DPS every year and paying Stock Dividend from the F/Y 2006/07 to F/Y 2009/10. NABIL is paid highest Total Dividend in the F/Y 2006/07 (i.e. Rs. 2210) and lowest in the F/Y 2010/11 (i.e. Rs. 30). EPS of NABIL is highest in the F/Y 2006/07 (i.e. Rs. 137.08) and lowest in the F/Y 2010/11 (i.e. Rs. 70.67). EPS of NABIL is in decreasing trend from the F/Y 2006/07 to F/Y 2010/11 which is a bad sign for the bank and its investors.

Realized Return (R), Expected Return ($\bar{R}$), Standard Deviation (σ) and Coefficient of Variation (C.V.) of the Common Stock of NABIL: The Year-end price (i.e. closing MPS) and dividend amounts are used to calculate realized rate of return for each year. Table-4.8 shows the calculation of yearly-realized return, expected return, standard deviation and co-efficient of variation of the common stock of NABIL.

Table-4.8

Realized Return, Expected Return, S.D. and C.V. of the C.S. of NABIL

(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Total Dividend (Rs.)	R = $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2006/07	5050	2210	2.2411	1.8452	3.4048
2007/08	5275	2019.60	0.4445	0.0486	0.0024
2008/09	4899	1227	0.1613	-0.2346	0.0550
2009/10	2384	530.80	-0.4050	-0.8009	0.6414
2010/11	1252	30	-0.4622	-0.8581	0.7363
Total			**1.9797**		**4.8399**

We have,

Expected Return ($\bar{R}$) = $\frac{\sum R}{n} = \frac{1.9797}{5} = 0.3959$

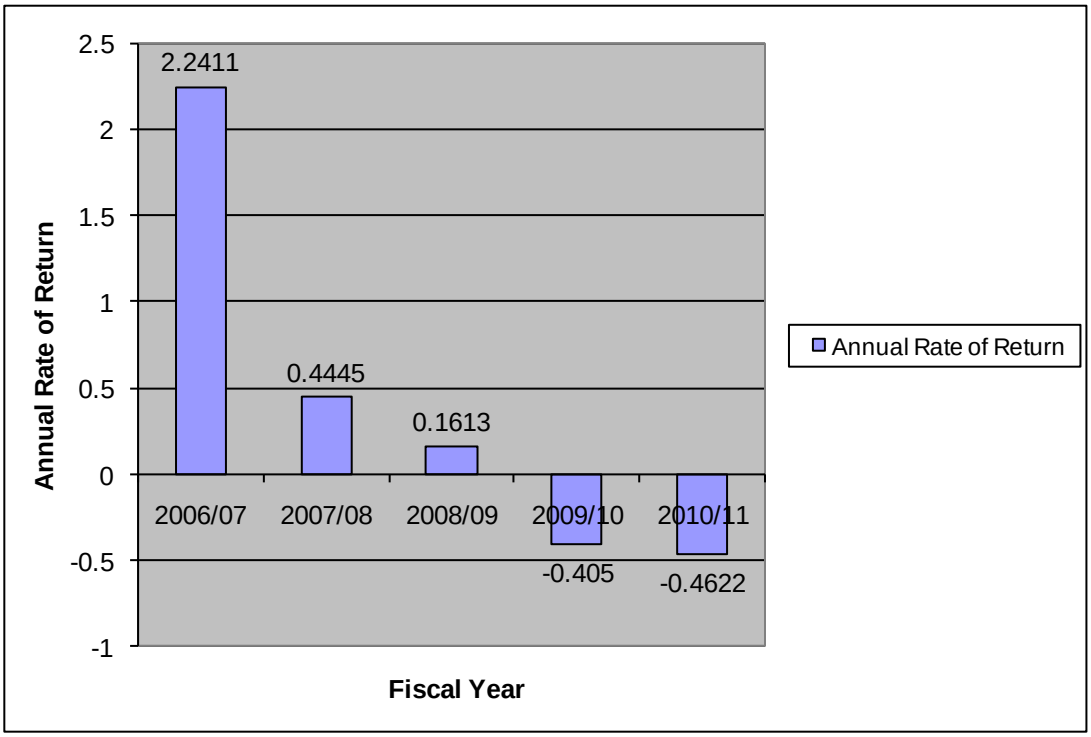
Standard Deviation (σ) = $\sqrt{\frac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\frac{4.8399}{5-1}} = 1.10$

Coefficient of Variation (C.V.) = $\frac{\sigma}{\bar{R}} = \frac{1.10}{0.3959} = 2.7785$

The Expected Return of NABIL is 0.3959 with Total Risk (measured by S.D.) of 1.10. The C.V. of NABIL is 2.7785 which indicate that the investor needs to sacrifice 2.7785 unit of risk for per unit return.

Figure-4.8

Year-wise Annual Rate of Return of the C.S. of NABIL



The Figure-4.8 shows that the Annual Rate of Return of C.S. of NABIL in several years. The Annual Rate of Return is maximum on F/Y 2006/07 i.e. 2.2411 which shows highest return profitable while the Annual Rate of Return is negative in the F/Y 2009/10 and F/Y 2010/11 i.e. -0.4050 and -0.4622 respectively.

4.1.5 Nepal State Bank of India Limited (NSBIL)

MPS, Dividend and EPS of common stock of NSBIL are shown in the Table-4.9 and Year, Closing MPS & EPS movement of common stock of NSBIL are shown in the Figure-4.9.

Table-4.9

MPS, Dividend and EPS of the C.S. of NSBIL

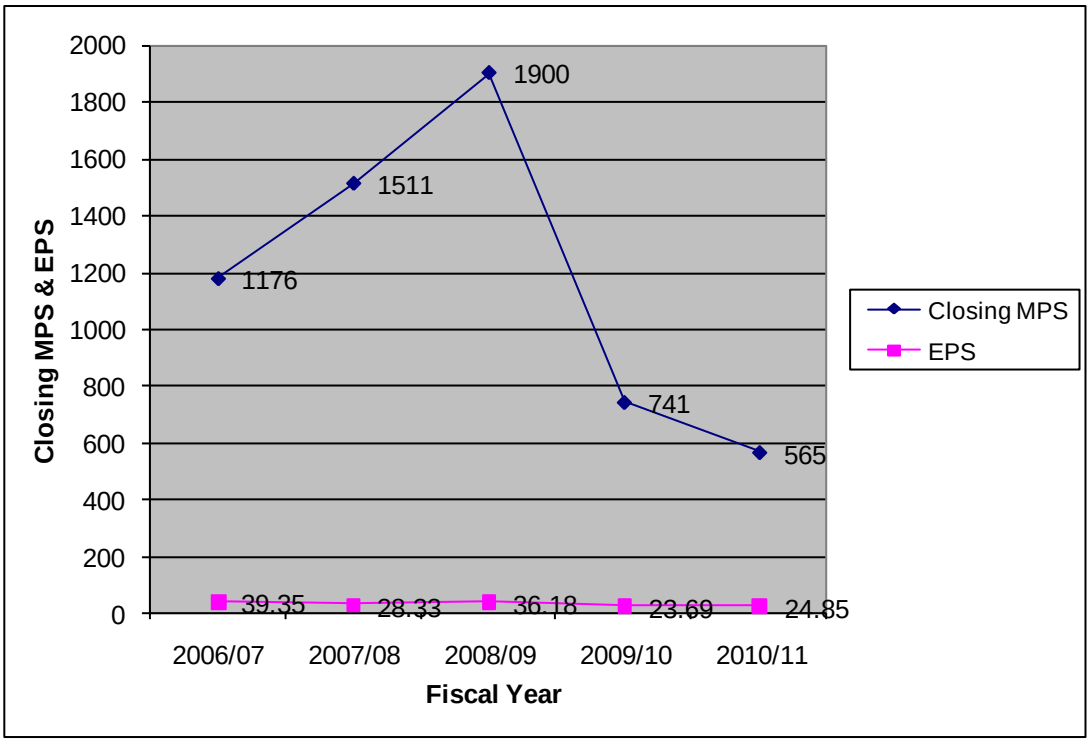
(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)
2006/07	1176	12.59	35	541.44	39.35
2007/08	1511	0	0	0	28.33
2008/09	1900	2.11	40	298.51	36.18
2009/10	741	5	12.5	75.63	23.69
2010/11	565	5	12.5	84.38	24.85

Source: Annual Report of NSBIL F/Y 2008/09 & F/Y 2011/12, Appendix-V.

Figure-4.9

Year, Closing MPS & EPS movement of the C.S. of NSBIL



According to the above Table-4.9 and Figure-4.9, we see that Closing MPS of NSBIL is highest in the F/Y 2008/09 (i.e. Rs. 1900) and lowest in the F/Y 2010/11 (i.e. Rs. 565). Closing MPS of NSBIL is in increasing trend from the F/Y 2006/07 to F/Y 2008/09 and then decreasing trend from the F/Y 2008/09

to F/Y 2010/11. NSBIL is paying Cash DPS and Stock Dividend in the F/Y 2006/07, F/Y 2008/09, F/Y 2009/10 and F/Y 2010/11. NSBIL is paid highest Total Dividend in the F/Y 2006/07 (i.e. Rs. 541.44) and lowest in the F/Y 2007/08 (i.e. Rs. 00). EPS of NSBIL is highest in the F/Y 2006/07 (i.e. Rs. 39.35) and lowest in the F/Y 2009/10 (i.e. Rs. 23.69). EPS of NSBIL is in decreasing trend from the F/Y 2006/07 to F/Y 2007/08, increasing trend from the F/Y 2007/08 to F/Y 2008/09, decreasing trend from the F/Y 2008/09 to F/Y 2009/10 and then increasing trend from the F/Y 2009/10 to F/Y 2010/11.

Realized Return (R), Expected Return ($\bar{R}$), Standard Deviation (σ) and Coefficient of Variation (C.V.) of the Common Stock of NSBIL: The Year-end price (i.e. closing MPS) and dividend amounts are used to calculate realized rate of return for each year. Table-4.10 shows the calculation of yearly-realized return, expected return, standard deviation and co-efficient of variation of the common stock of NSBIL.

Table-4.10

Realized Return, Expected Return, S.D. and C.V. of the C.S. of NSBIL

(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Closing MPS (Rs.)	Total Dividend (Rs.)	R = $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	(R–$\bar{R}$)	(R–$\bar{R}$)^2
2006/07	1176	541.44	1.8063	1.4358	2.0615
2007/08	1511	0	0.2849	-0.0856	0.0073
2008/09	1900	298.51	0.4550	0.0845	0.0071
2009/10	741	75.63	-0.5702	-0.9407	0.8849
2010/11	565	84.38	-0.1236	-0.4941	0.2441
Total			**1.8524**		**3.2049**

We have,

Expected Return ($\bar{R}$) = $\frac{\sum R}{n} = \frac{1.8524}{5} = 0.3705$

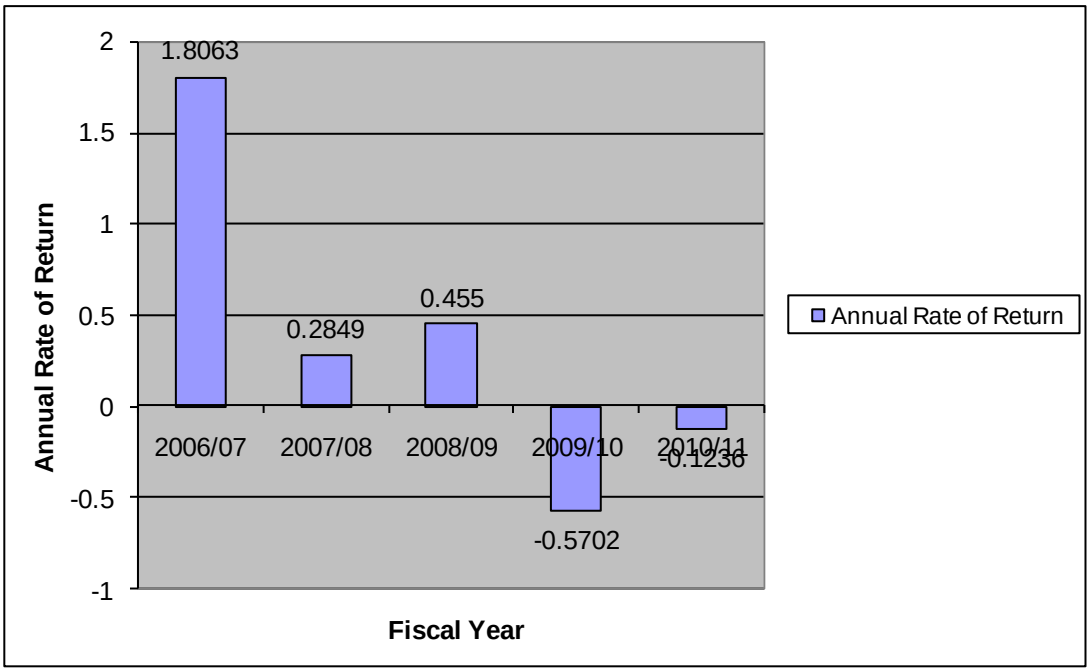
Standard Deviation (σ) = $\sqrt{\frac{\sum(R-\bar{R})^2}{n-1}} = \sqrt{\frac{3.2049}{5-1}} = 0.8951$

Coefficient of variation (C.V.) = $\frac{\sigma}{\bar{R}} = \frac{0.8951}{0.3705} = 2.4159$

The Expected Return of NSBIL is 0.3705 with Total Risk (measured by S.D.) of 0.8951. The C.V. of NSBIL is 2.4159 which indicate that the investor needs to sacrifice 2.4159 unit of risk for per unit return.

Figure-4.10

Year-wise Annual Rate of Return of the C.S. of NSBIL



The Figure-4.10 shows that the Annual Rate of Return of C.S. of NSBIL in several years. The Annual Rate of Return is maximum on F/Y 2006/07 i.e. 1.8063 which shows highest return profitable while the Annual Rate of Return is negative in the F/Y 2009/10 and F/Y 2010/11 i.e. -0.5702 and -0.1236 respectively.

4.2 Inter Bank Comparisons

A comparative analysis of expected return, variance, standard deviation and the coefficient of the variation of the selected commercial banks for the year 2005/06 to 2010/11 is performed here. The comparative analysis is tabulated in the Table-4.11.

Table-4.11

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

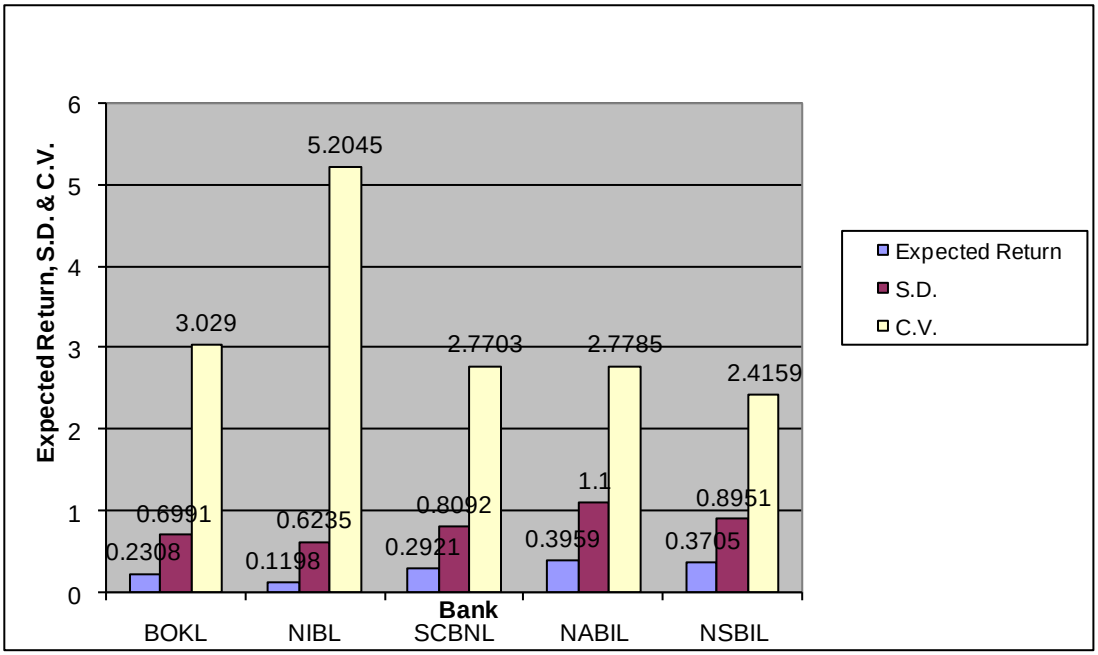
Bank	Expected Return ($\bar{R}$)	Standard Deviation (σ)	Coefficient of Variation (C.V.)	Remarks		
				Return	Risk	C.V.
BOKL	0.2308	0.6991	3.0290	-	-	-
NIBL	0.1198	0.6235	5.2045	Lowest	Lowest	Highest
SCBNL	0.2921	0.8092	2.7703	-	-	-
NABIL	0.3959	1.10	2.7785	Highest	Highest	-
NSBIL	0.3705	0.8951	2.4159	-	-	Lowest

Source: Table-4.2, Table-4.4, Table-4.6, Table-4.8 and Table-4.10.

Table-4.11 Implies that the Investors can get the highest return by investing in common stock of NABIL. To take an investment decision on a single common stock (security), standard deviation **(σ)** & co-efficient of variation (C.V.) is the most appropriate measure. Lower S.D. reveals lower risk. The S.D. is lower of NIBL in comparison to other banks. C.V. measures the risk per unit of the return. Lower the C.V. lower is the relative risk. Similarly, NSBIL is preferable because of low C.V. in comparison to other banks. Thus, the investors are suggested to invest in the stock of NSBIL. To make the comparison easily understandable Figure-4.11 is presented below.

Figure-4.11

Expected Return, S.D. and C.V. of each Commercial Bank



To take an investment decision on single common stock (security), co-efficient of variance (C.V.) is the most appropriate basis. Since it measures risk per unit return of a stock. So standard deviation and return are included in it. On the basis of C.V. NSBIL common stock is the best security for investment because of its minimum co-efficient of variation as mentioned in Table-4.11.

4.3 Market Capitalization

On the basis of market capitalization at Mid July 2010 to Mid July 2011, size of each bank is presented in Table-4.12. Market capitalization is the total market value at specific time period of the company, industry and market as a whole. SCBNL has highest market capitalization & BOKL has lowest market capitalization among listed bank at 2010/11.

Table-4.12

Market Capitalization of Listed Banks at Mid July 2010 to Mid July 2011

Bank	Market Capitalization (in millions)	Percentage (%)
BOKL	4813.07	9.44
NIBL	12396.40	24.30
SCBNL	16775.40	32.89
NABIL	12091.15	23.70
NSBIL	4935.16	9.67
Total	**51011.18**	**100**

Source: Annual Report (Mid July 2010 to Mid July 2011) of NEPSE .

On the basis of market capitalization of selected listed commercial banks, we can clearly see that SCBNL is the largest bank and BOKL is the smallest bank. SCBNL covers 32.89% of total market whereas BOKL covers only 9.44% of total market.

Figure-4.12

Comparative Proportion of Market Capitalization of Listed Commercial Banks at F/Y 2010/11

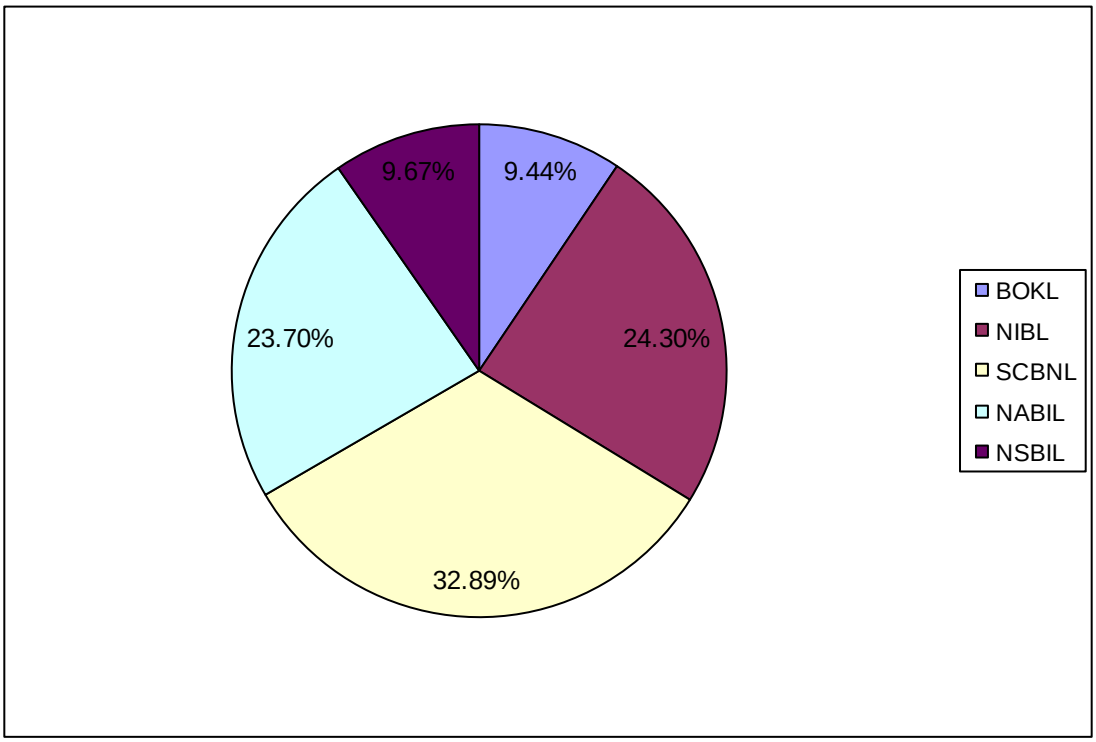


Figure-4.12 shows the share of each bank in the market. SCBNL is in the highest position by occupying 32.89 % of share in the market and BOKL is in the lowest position by occupying 9.44 % of share in the market among others.

4.4 Comparison with Market

4.4.1 Market Risk and Return Analysis

As we know, there is only one stock exchange in Nepal on market risk and return. The programme has been initiated to reform capital converted securities. Stock Exchange Center, Nepal 1993 A.D. has been working as a non-profit organization operating under securities exchange act, 1993. Overall market movement of the country is represented by market index or NEPSE index. Market returns, its S.D. & C.V. are shown in the Table-4.13 and NEPSE index movement is shown in the Figure-4.13.

Table-4.13

Market Return, S.D. and C.V. of Market Index or NEPSE Index

(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	NEPSE Index	$R_m = \frac{(NI_t - NI_{t-1})}{NI_{t-1}}$	$(R_m - \overline{R_m})$	$(R_m - \overline{R_m})^2$
2005/06	386.83	-	-	-
2006/07	683.95	0.7681	0.6978	0.4869
2007/08	963.36	0.4085	0.3382	0.1144
2008/09	749.10	-0.2224	-0.2927	0.0857
2009/10	477.73	-0.3623	-0.4326	0.1871
2010/11	362.85	-0.2405	-0.3108	0.0966
Total		**0.3514**		**0.9707**

Source: Annual Report of NEPSE.

We have,

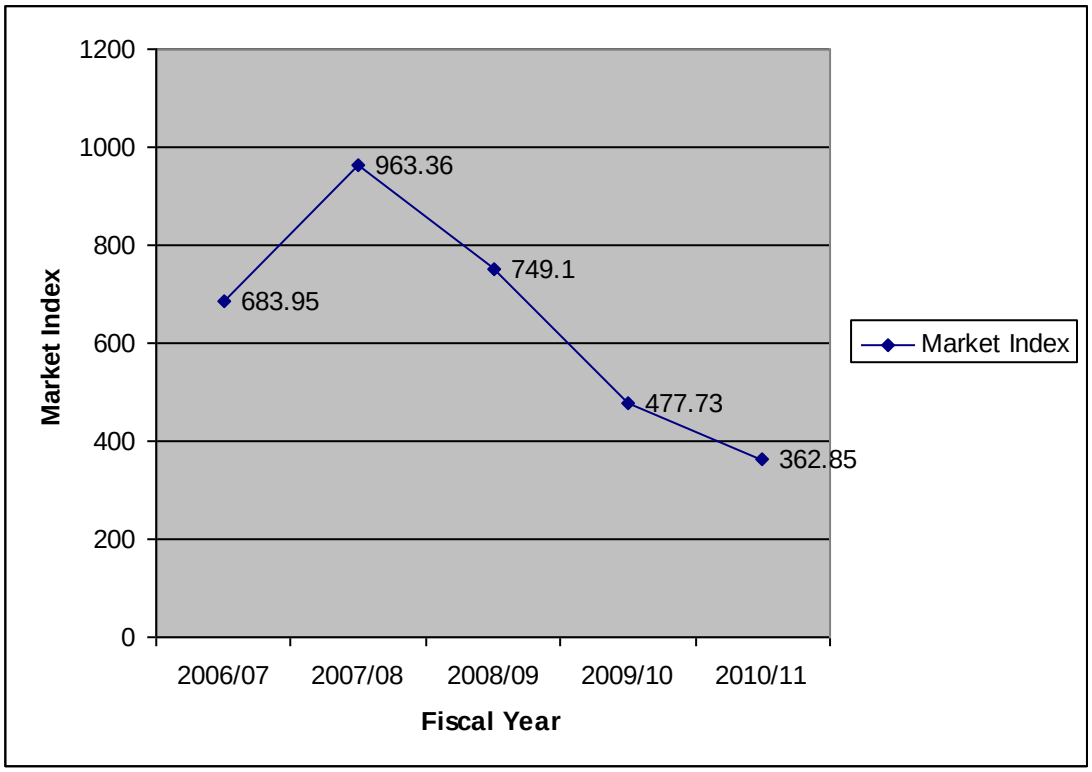
Expected Return ($\overline{R_m}$) = $\frac{\sum R_m}{n} = \frac{0.3514}{5} = 0.0703$

Standard Deviation (σ_m) = $\sqrt{\frac{\sum (R_m - \overline{R_m})^2}{n-1}} = \sqrt{\frac{0.9707}{5-1}} = 0.4926$

Coefficient of Variation (C.V.) = $\frac{\sigma_m}{\overline{R}_m} = \frac{0.4926}{0.0703} = 7.0071$

Figure-4.13

Market Index or NEPSE Index Movement



From the above diagram, it is clear the movement of NEPSE index is in increasing trend from the F/Y 2006/07 to F/Y 2007/08 and then decreasing trend from the F/Y 2007/08 to F/Y 2010/11. The highest NEPSE index is in the F/Y 2007/08 and lowest NEPSE index is in the F/Y 2010/11.

4.4.2 Market Sensitivity Analysis of each Bank

Market sensitivity is explained by its beta coefficient. Higher the beta coefficient, greater the sensitivity and higher the relation to the market movement and percentage of risk that is correlated with market is said to be systematic portion of risk. As the market, which guides the portion of risk changes it is out of control. Thus, beta is systematic risk, which can't be eliminated through the way of diversification.

Here, calculation of beta co-efficient of the common stock of BOKL has been shown in the Table-4.14.

Table-4.14

Beta Co-efficient of the C.S. of BOKL

(For the F/Y 2006/07 to F/Y 2010/11)

Fiscal Year	Return (R_j)	($R_j - \bar{R}_j$)	Return on Market (R_m)	($R_m - \bar{R}_m$)	($R_j - \bar{R}_j$) ($R_m - \bar{R}_m$)
2006/07	0.6412	0.4104	0.7681	0.6978	0.2864
2007/08	1.2415	1.0107	0.4085	0.3382	0.3418
2008/09	-0.0773	-0.3081	-0.2224	-0.2927	0.0902
2009/10	-0.4847	-0.7155	-0.3623	-0.4326	0.3095
2010/11	-0.1669	-0.3977	-0.2405	-0.3108	0.1236
Total					**1.1515**

Source: Table-4.2 & Table-4.13.

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum(R_j - \bar{R}_j)(R_m - \bar{R}m)}{n-1} = \frac{1.1515}{5-1} = 0.2879$$

Again,

$$\beta_m = \frac{\text{Cov}(R_j, R_m)}{\sigma^2 m} = \frac{0.2879}{(0.4926)^2} = 1.1865$$

Where,

n = No. of observation

σ^2_m = Variance of market return

R_j = Return on stock of BOKL

R_m = Return on Market

Since beta co-efficient of BOKL is 1.1865, which is more than 1, which shows that BOKL is volatile and aggressive investor can purchase this type of investment. From the side of investment, it is risky investment. Other banks betas are calculated in **Appendix** *from **VII** to **X***.

Table-4.15

Beta Co-efficient of Each Bank

S.N.	Commercial Bank	Beta Co-efficient (B_i)	Remarks
1	BOKL	1.1865	Least aggressive
2	NIBL	1.2165	-
3	SCBNL	1.5870	-
4	NABIL	2.0461	Most aggressive
5	NSBIL	1.5545	-

Source: Table-4.14 & Appendix VII to X.

According to the above Table-4.15 shows that, all five commercial banks beta co-efficient is higher than the beta co-efficient of market 1. Among them NABIL has higher beta co-efficient and BOKL has lower beta co-efficient. Since all bank security are aggressive type securities.

4.4.3 Required Rate of Return (R_i), Expected Rate of Return ($\overline{R}$) and Price Evaluation Analysis

The composition of required rate of return and expected rate of return gives the result, whether the stock is underpriced or overpriced. If the required rate of

return is less than expected rate of return, the stock is said to be under priced and investors tend to buy this type of stock and vice-versa. And if the required rate of return is more than expected rate of return the stock is overpriced and investors tends to sold this type of stock. For the analysis, the risk-free rate of return is needed, which is taken from the interest rate of Treasury bill issued by Nepal Rastra Bank. Hence,

Risk-free rate of return (R_f) = 2.71% = 0.0271

Market rate of return ($\overline{R}_m$) = 7.03 % = 0.0703

Table-4.16

Required Rate of Return, Expected Rate of Return and Price Evaluation

Banks	**R_f**	$\overline{R}_m$	**β_m**	**$R_i = R_f + (\overline{R}_m - R_f)\ \beta_m$**	$\overline{R}$	**Price Evaluation**
BOKL	0.0271	0.0703	1.1865	0.0784	0.2308	Underpriced
NIBL	0.0271	0.0703	1.2165	0.0797	0.1198	Underpriced
SCBNL	0.0271	0.0703	1.5870	0.0957	0.2921	Underpriced
NABIL	0.0271	0.0703	2.0461	0.1155	0.3959	Underpriced
NSBIL	0.0271	0.0703	1.5545	0.0943	0.3705	Underpriced

Source: NRB, Table-4.2, 4.4, 4.6, 4.8, 4.10, 4.13 & Appendix VI to X.

In the above Table-4.16, we get the expected rate of return is higher than the required rate of return of the bank, so all the commercial banks stock are underpriced. It shows that all the banks have stock with good investment opportunity and all the stocks in the demand. Their stock's value will be increased in the near future providing the investors higher return. Since all the stocks are underpriced, investor can gain profit from buying those stocks. These stocks are recommended to buy.

4.5 Portfolio Analysis

The portfolio theory was proposed by Harry M. Markowitz which gives the concept of diversification of risk by investing total funds in more than a single asset or single stock. Markowitz diversification helps the investors to attain a higher level of expected utility than with any other risk reduction technique. In a very simple way we can understand it as not keeping all the eggs in a single basket. By diversifying total fund in different securities the risk of individual security can be reduced without loosing considerable return. The main objective of portfolio is reduction of unsystematic risk, from which investors can take more benefit by making efficient portfolio. Therefore, a brief analysis of risk and return is extended in portfolio context. The portfolio expected return is a straight forward weighted average of returns on the individual securities. The weights are equal to the proportions of the total fund invested in each security. The weights must sum to 100%.

4.6 Analysis of Risk Diversification

The analysis is based on two assets portfolio and the tools for analysis are presented in the third chapter (Research Methodology). Here, the portfolio of the common stock of BOKL, NIBL, SCBNL, NABIL and NSBIL is analyzed below in the Table.

Table-4.17

Calculation of Covariance, Correlation, Portfolio Return and Portfolio Risk between the stocks of BOKL and NIBL

(For the F/Y 2006/07 to F/Y 2010/11)

F/Y	$(R_{BOKL} - \overline{R}_{BOKL})$	$(R_{NIBL} - \overline{R}_{NIBL})$	$(R_{BOKL} - \overline{R}_{BOKL})(R_{NIBL} - \overline{R}_{NIBL})$
2006/07	0.4104	0.7425	0.3047
2007/08	1.0107	0.5691	0.5752
2008/09	-0.3081	-0.5451	0.1679
2009/10	-0.7155	-0.5939	0.4249
2010/11	-0.3977	-0.1726	0.0686
Total			**1.5413**

Source: Table-4.2 & Table-4.4.

We have,

$$\text{Cov. } (R_{BOKL}, R_{NIBL}) = \frac{\sum\left(R_{BOKL} - \bar{R}_{BOKL}\right)\left(R_{NIBL} - \bar{R}_{NIBL}\right)}{n-1} = \frac{1.5413}{5-1} = 0.3853$$

$$\rho_{BOKL,\ NIBL} = \frac{Cov.(R_{BOKL}, R_{NIBL})}{\sigma_{BOKL}.\sigma_{NIBL}} = \frac{0.3853}{0.6991 \times 0.6235} = 0.8839$$

Optimal portfolio weight or proportion of stock of BOKL & NIBL will be:

$$W_{BOKL} = \frac{\sigma^2{}_{NIBL} - Cov(R_{BOKL}.R_{NIBL})}{\sigma^2{}_{BOKL} + \sigma^2{}_{NIBL} - 2Cov(R_{BOKL}, R_{NIBL})}$$

$$= \frac{0.6235^2 - 0.3853}{0.6991^2 + 0.6235^2 - 2 \times 0.3853}$$

$$= 0.0323 \text{ or } 3.23\%$$

$$\therefore W_{NIBL} = 1 - W_{BOKL}$$

$$= 1\text{-}0.0323$$

$$= 0.9677 \text{ or } 96.77\%$$

Expected return on portfolio will be:

$$\bar{R}_P = W_{BOKL}.\bar{R}_{BOKL} + W_{NIBL}.\bar{R}_{NIBL}$$

$$= 0.0323 \times 0.2308 + 0.9677 \times 0.1198$$

$$= 0.1234 \text{ or } 12.34\%$$

Portfolio risk is given as:

$$\sigma_P = \sqrt{W^2{}_{BOKL}.\sigma^2{}_{BOKL} + W^2{}_{NIBL}.\sigma^2{}_{NIBL} + 2W_{BOKL}.W_{NIBL}.Cov(R_{BOKL}.R_{NIBL})}$$

$$\sqrt{(0.0323)^2 \times (0.6991)^2 + (0.9677)^2 \times (0.6235)^2 + 2 \times 0.0323 \times 0.9677 \times 0.3853}$$

$$= 0.6234 \text{ or } 62.34\%$$

Where,

R_{BOKL} = Annual Return of the C.S. of BOKL

$\bar{R}_{BOKL}$ = Expected return of the C.S. of BOKL

R_{NIBL} = Annual Return of the C.S.of NIBL

$\bar{R}_{NIBL}$ = Expected return of the C.S. of NIBL

Cov. ($R_{BOKL,}$ R_{NIBL}) = Covariance of return between C.S. of BOKL & NIBL

σ^2_{BOKL} = Variance of the C.S. of BOKL

σ^2_{NIBL} = Variance of the C.S. of NIBL

$\rho_{BOKL, NIBL}$ = Correlation between stocks of BOKL & NIBL

W_{BOKL} = Weight or Proportion of the C.S. of BOKL

W_{NIBL} = Weight or Proportion of the C.S. of NIBL

$\overline{R}_P$ = Expected return on portfolio of stock BOKL & NIBL

δ_P = Standard deviation of portfolio return of stock BOKL & NIBL

Table-4.18

Calculation of Covariance, Correlation, Portfolio Return and Portfolio Risk between the stocks of BOKL and SCBNL

(For the F/Y 2006/07 to F/Y 2010/11)

F/Y	$(R_{BOKL} - \overline{R}_{BOKL})$	$(R_{SCBNL} - \overline{R}_{SCBNL})$	$(R_{BOKL} - \overline{R}_{BOKL})(R_{SCBNL} - \overline{R}_{SCBNL})$
2006/07	0.4104	1.1966	0.4911
2007/08	1.0107	0.3884	0.3926
2008/09	-0.3081	-0.1648	0.0508
2009/10	-0.7155	-0.6924	0.4954
2010/11	-0.3977	-0.7279	0.2895
Total			**1.7194**

Source: Table-4.2 & Table-4.6.

We have,

$$\text{Cov. } (R_{BOKL}, R_{SCBNL}) = \frac{\sum (R_{BOKL} - \overline{R}_{BOKL})(R_{SCBNL} - \overline{R}_{SCBNL})}{n-1} = \frac{1.7194}{5-1} = 0.4299$$

$$\rho_{BOKL, SCBNL} = \frac{Cov.(R_{BOKL}, R_{SCBNL})}{\sigma_{BOKL}.\sigma_{SCBNL}} = \frac{0.4299}{0.6991 \times 0.8092} = 0.7599$$

Optimal portfolio weight or proportion of stock of BOKL & SCBNL will be:

$$W_{BOKL} = \frac{\sigma^2_{SCBNL} - Cov(R_{BOKL}.R_{SCBNL})}{\sigma^2_{BOKL} + \sigma^2_{SCBNL} - 2Cov(R_{BOKL}, R_{SCBNL})}$$

$$= \frac{0.8092^2 - 0.4299}{0.6991^2 + 0.8092^2 - 2 \times 0.4299}$$

= 0.7926 or 79.26%

$\therefore W_{SCBNL} = 1 - W_{BOKL}$

= 1-0.7926

= 0.2074 or 20.74%

Expected return on portfolio will be:

$\bar{R}_P = W_{BOKL}.\bar{R}_{BOKL} + W_{SCBNL}.\bar{R}_{SCBNL}$

$= 0.7926 \times 0.2308 + 0.2074 \times 0.2921$

= 0.2435 or 24.35%

Portfolio risk is given as:

$$\sigma_P = \sqrt{W^2_{BOKL}.\sigma^2_{BOKL} + W^2_{SCBNL}.\sigma^2_{SCBNL} + 2W_{BOKL}.W_{SCBNL}.Cov(R_{BOKL}.R_{SCBNL})}$$

$$\sqrt{(0.7926)^2 \times (0.6991)^2 + (0.2074)^2 \times (0.8092)^2 + 2 \times 0.7926 \times 0.2074 \times 0.4299}$$

= 0.6903 or 69.03%

Where,

R_{BOKL} = Annual Return of the C.S. of BOKL

$\bar{R}_{BOKL}$ = Expected return of the C.S. of BOKL

R_{SCBNL} = Annual Return of the C.S.of SCBNL

$\bar{R}_{SCBNL}$ = Expected return of the C.S. of SCBNL

Cov. ($R_{BOKL,}$ R_{SCBNL}) = Covariance of return between C.S. of BOKL & SCBNL

σ^2_{BOKL} = Variance of the C.S. of BOKL

σ^2_{SCBNL} = Variance of the C.S. of SCBNL

$\rho_{BOKL,\ SCBNL}$= Correlation between stocks of BOKL & SCBNL

W_{BOKL} = Weight or Proportion of the C.S. of BOKL

W_{SCBNL} = Weight or Proportion of the C.S. of SCBNL

$\bar{R}_P$ = Expected return on portfolio of stock BOKL & SCBNL

δ_P = Standard deviation of portfolio return of stock BOKL & SCBNL

Table-4.19

Calculation of Covariance, Correlation, Portfolio Return and Portfolio Risk between the stocks of BOKL and NABIL

(For the F/Y 2006/07 to F/Y 2010/11)

F/Y	$(R_{BOKL} - \bar{R}_{BOKL})$	$(R_{NABIL} - \bar{R}_{NABIL})$	$(R_{BOKL} - \bar{R}_{BOKL})(R_{NABIL} - \bar{R}_{NABIL})$
2006/07	0.4104	1.8452	0.7573
2007/08	1.0107	0.0486	0.0491
2008/09	-0.3081	-0.2346	0.0723
2009/10	-0.7155	-0.8009	0.5730
2010/11	-0.3977	-0.8581	0.3413
Total			**1.7930**

Source: Table-4.2 & Table-4.8.

We have,

$$\text{Cov. } (R_{BOKL}, R_{NABIL}) = \frac{\sum (R_{BOKL} - \bar{R}_{BOKL})(R_{NABIL} - \bar{R}_{NABIL})}{n-1} = \frac{1.7930}{5-1} = 0.4483$$

$$\rho_{BOKL, NABIL} = \frac{Cov.(R_{BOKL}, R_{NABIL})}{\sigma_{BOKL}.\sigma_{NABIL}} = \frac{0.4483}{0.6991 \times 1.10} = 0.5830$$

Optimal portfolio weight or proportion of stock of BOKL & NABIL will be:

$$W_{BOKL} = \frac{\sigma^2_{NABIL} - Cov(R_{BOKL}.R_{NABIL})}{\sigma^2_{BOKL} + \sigma^2_{NABIL} - 2Cov(R_{BOKL}, R_{NABIL})}$$

$$= \frac{1.10^2 - 0.4483}{0.6991^2 + 1.10^2 - 2 \times 0.4483}$$

$$= 0.9496 \text{ or } 94.96\%$$

$$\therefore W_{NABIL} = 1 - W_{BOKL}$$

$$= 1 - 0.9496$$

$$= 0.0504 \text{ or } 5.04\%$$

Expected return on portfolio will be:

$$\bar{R}_P = W_{BOKL}.\bar{R}_{BOKL} + W_{NABIL}.\bar{R}_{NABIL}$$

$$= 0.9496 \times 0.2308 + 0.0504 \times 0.3959$$

$$= 0.2391 \text{ or } 23.91\%$$

Portfolio risk is given as:

$$\sigma_P = \sqrt{W^2{}_{BOKL}.\sigma^2{}_{BOKL} + W^2{}_{NABIL}.\sigma^2{}_{NABIL} + 2W_{BOKL}.W_{NABIL}.Cov(R_{BOKL}.R_{NABIL})}$$

$$\sqrt{(0.9496)^2 \times (0.6991)^2 + (0.0504)^2 \times (1.10)^2 + 2 \times 0.9496 \times 0.0504 \times 0.4483}$$

= 0.6976 or 69.76%

Where,

R_{BOKL} = Annual Return of the C.S. of BOKL

$\bar{R}_{BOKL}$ = Expected return of the C.S. of BOKL

R_{NABIL} = Annual Return of the C.S.of NABIL

S $\bar{R}_{NABIL}$ = Expected return of the C.S. of NABIL

Cov. ($R_{BOKL,}$ R_{NABIL}) = Covariance of return between C.S. of BOKL & NABIL

$\sigma^2{}_{BOKL}$ = Variance of the C.S. of BOKL

$\sigma^2{}_{NABIL}$ = Variance of the C.S. of NABIL

$\rho_{BOKL, NABIL}$ = Correlation between stocks of BOKL & NABIL

W_{BOKL} = Weight or Proportion of the C.S. of BOKL

W_{NABIL} = Weight or Proportion of the C.S. of NABIL

$\bar{R}_P$ = Expected return on portfolio of stock BOKL & NABIL

δ_P = Standard deviation of portfolio return of stock BOKL & NABIL

Table-4.20

Calculation of Covariance, Correlation, Portfolio Return and Portfolio Risk between the stocks of BOKL and NSBIL

(For the F/Y 2006/07 to F/Y 2010/11)

F/Y	$(R_{BOKL} - \bar{R}_{BOKL})$	$(R_{NSBIL} - \bar{R}_{NSBIL})$	$(R_{BOKL} - \bar{R}_{BOKL})(R_{NSBIL} - \bar{R}_{NSBIL})$
2006/07	0.4104	1.4358	0.5893
2007/08	1.0107	-0.0856	-0.0865
2008/09	-0.3081	0.0845	-0.0260
2009/10	-0.7155	-0.9407	0.6731
2010/11	-0.3977	-0.4941	0.1965
Total			**1.3464**

Source: Table-4.2 & Table-4.10.

We have,

$$\text{Cov. } (R_{BOKL}, R_{NSBIL}) = \frac{\sum\left(R_{BOKL} - \bar{R}_{BOKL}\right)\left(R_{NSBIL} - \bar{R}_{NSBIL}\right)}{n-1} = \frac{1.3464}{5-1} = 0.3366$$

$$\rho_{BOKL,\ NSBIL} = \frac{Cov.(R_{BOKL}, R_{NSBIL})}{\sigma_{BOKL}.\sigma_{NSBIL}} = \frac{0.3366}{0.6991 \times 0.8951} = 0.5379$$

Optimal portfolio weight or proportion of stock of BOKL & NSBIL will be:

$$W_{BOKL} = \frac{\sigma^2{}_{NSBIL} - Cov(R_{BOKL}.R_{NSBIL})}{\sigma^2{}_{BOKL} + \sigma^2{}_{NSBIL} - 2Cov(R_{BOKL}, R_{NSBIL})}$$

$$= \frac{0.8951^2 - 0.3366}{0.6991^2 + 0.8951^2 - 2 \times 0.3366}$$

= 0.7533 or 75.33%

$\therefore W_{NSBIL}$ = 1– W_{BOKL}

= 1-0.7533

= 0.2467 or 24.67%

Expected return on portfolio will be:

$\bar{R}_P = W_{BOKL}.\bar{R}_{BOKL} + W_{NSBIL}.\bar{R}_{NSBIL}$

$= 0.7533 \times 0.2308 + 0.2467 \times 0.3705$

= 0.2653 or 26.53%

Portfolio risk is given as:

$$\sigma_P = \sqrt{W^2{}_{BOKL}.\sigma^2{}_{BOKL} + W^2{}_{NSBIL}.\sigma^2{}_{NSBIL} + 2W_{BOKL}.W_{NSBIL}.Cov(R_{BOKL}.R_{NSBIL})}$$

$$\sqrt{(0.7533)^2 \times (0.6991)^2 + (0.2467)^2 \times (0.8951)^2 + 2 \times 0.7533 \times 0.2467 \times 0.3366}$$

= 0.6717 or 67.17%

Where,

R_{BOKL} = Annual Return of the C.S. of BOKL

$\bar{R}_{BOKL}$ = Expected return of the C.S. of BOKL

R_{NSBIL} = Annual Return of the C.S.of NSBIL

$\bar{R}_{NSBIL}$ = Expected return of the C.S. of NSBIL

Cov. ($R_{BOKL,}$ R_{NSBIL}) = Covariance of return between C.S. of BOKL & NSBIL

σ^2_{BOKL} = Variance of the C.S. of BOKL

σ^2_{NSBIL} = Variance of the C.S. of NSBIL

$\rho_{BOKL, NSBIL}$= Correlation between stocks of BOKL & NSBIL

W_{BOKL} = Weight or Proportion of the C.S. of BOKL

W_{NSBIL} = Weight or Proportion of the C.S. of NSBIL

$\overline{R}_P$ = Expected return on portfolio of stock BOKL & NSBIL

δ_P = Standard deviation of portfolio return of stock BOKL & NSBIL

4.7 Comparison of Risk & Return on the basis of Isolation and Portfolio

Table-4.21
Portfolio Risk & Return of BOKL and NIBL

Banks	In Isolation			In Portfolio			Cov.	Corr.
	Return	S.D.	C.V.	Return	S.D.	C.V.		
BOKL	0.2308	0.6991	3.0290					
				0.1234	0.6234	5.0519	0.3853	0.8839
NIBL	0.1198	0.6235	5.2045					

Source: Table-4.2, Table-4.4 & Table-4.17.

From the above Table-4.21 shows that the Risk & Return of BOKL and NIBL are 0.6991 and 0.6235, 0.2308 and 0.1198 respectively in Isolation. The Portfolio Risk & Return of BOKL and NIBL are 0.6234 & 0.1234 respectively. So, both banks BOKL and NIBL Risk & Return are in greater position in Isolation than Portfolio. So, this set of BOKL and NIBL Portfolio is not beneficial for investment.

Table-4.22
Portfolio Risk & Return of BOKL and SCBNL

Banks	In Isolation			In Portfolio			Cov.	Corr.
	Return	S.D.	C.V.	Return	S.D.	C.V.		
BOKL	0.2308	0.6991	3.0290					
				0.2435	0.6903	2.8349	0.4299	0.7599
SCBNL	0.2921	0.8092	2.7703					

Source: Table-4.2, Table-4.6 & Table-4.18.

From the above Table-4.22 shows that the Risk & Return of BOKL and SCBNL are 0.6991 and 0.8092, 0.2308 and 0.2921 respectively in Isolation. The Portfolio Risk & Return of BOKL and SCBNL are 0.6903 & 0.2435 respectively. So, both banks BOKL and SCBNL Risk & Return are in greater position in Isolation than Portfolio. So, this set of BOKL and SCBNL Portfolio is not beneficial for investment.

Table-4.23
Portfolio Risk & Return of BOKL and NABIL

Banks	In Isolation			In Portfolio			Cov.	Corr.
	Return	S.D.	C.V.	Return	S.D.	C.V.		
BOKL	0.2308	0.6991	3.0290					
				0.2391	0.6976	2.9176	0.4483	0.5830
NABIL	0.3959	1.10	2.7785					

Source: Table-4.2, Table-4.8 & Table-4.19.

From the above Table-4.23 shows that the Risk & Return of BOKL and NABIL are 0.6991 and 1.10, 0.2308 and 0.3959 respectively in Isolation. The Portfolio Risk & Return of BOKL and NABIL are 0.6976 & 0.2391 respectively. So, both banks BOKL and NABIL Risk & Return are in greater position in Isolation than Portfolio. So, this set of BOKL and NABIL Portfolio is not beneficial for investment.

Table-4.24
Portfolio Risk & Return of BOKL and NSBIL

Banks	In Isolation			In Portfolio			Cov.	Corr.
	Return	S.D.	C.V.	Return	S.D.	C.V.		
BOKL	0.2308	0.6991	3.0290					
				0.2653	0.6717	2.5319	0.3366	0.5379
NSBIL	0.3705	0.8951	2.4159					

Source: Table-4.2, Table-4.10 & Table-4.20.

From the above Table-4.24 shows that the Risk & Return of BOKL and NSBIL are 0.6991 and 0.8951, 0.2308 and 0.3705 respectively in Isolation. The Portfolio Risk & Return of BOKL and NSBIL are 0.6717 & 0.2653 respectively. So, both banks BOKL and NSBIL Risk & Return are in greater position in Isolation than Portfolio. So, this set of BOKL and NSBIL Portfolio is not beneficial for investment.

Table-4.25
Comparative Analysis of Portfolio Risk and Return of different Commercial Banks

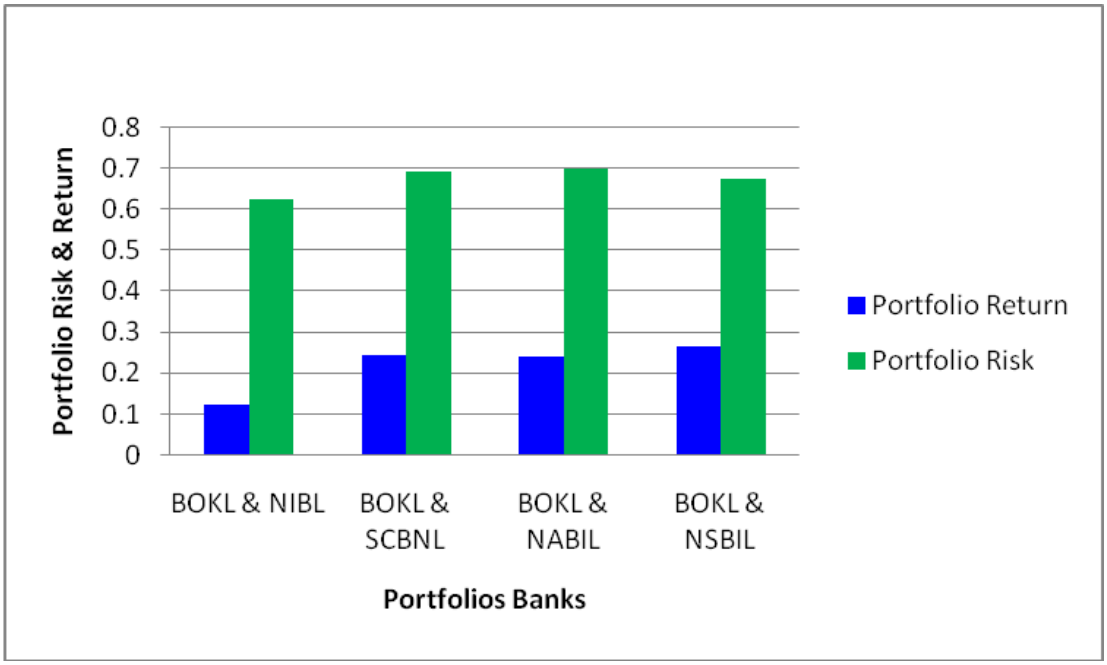
Portfolios Banks	Portfolio Return	Portfolio Risk	C.V.	Covariance	Correlation	Remarks
BOKL & NIBL	0.1234	0.6234	5.0519	0.3853	0.8839	Lowest Risk
BOKL & SCBNL	0.2435	0.6903	2.8349	0.4299	0.7599	-
BOKL & NABIL	0.2391	0.6976	2.9176	0.4483	0.5830	-
BOKL & NSBIL	0.2653	0.6717	2.5319	0.3366	0.5379	Highest Return

Source: Table-4.17, Table-4.18, Table-4.19 & Table-4.20.

From the above Table-4.25 shows that portfolio risk & return between selected listed commercial banks portfolio of BOKL & NIBL has lowest risk (i.e. 0.6234), portfolio of BOKL & NSBIL has highest return (i.e. 0.2653) and lowest c.v. (i.e. 2.5319). Investors can earn highest return and lowest c.v. by holding optimal portfolio of BOKL & NSBIL.

Figure-4.14

Portfolio Risk and Return



From the above Figure-4.14, we can clearly see the portfolio risk and return. The lowest portfolio risk & return is in portfolio BOKL & NIBL and the highest portfolio risk and return is in portfolio BOKL & NSBIL.

4.8 Segregation of Risk

The total risk involved in holding a stock into two part i.e. systematic risk and unsystematic risk. Total risk for an individual security can be measured by standard deviation or variance of rate of return.

The systematic risk, i.e. caused by whole system can't be diversified, where as unsystematic risk i.e. due to internal factors can be diversified. So it is known as avoidable risk.

Diversifiable risk can be diversified at no cost, so investors should know that the portion of systematic risk. By segregating risk, investors know what extent of particular stock can be diversified by holding an optimal portfolio.

Calculation of systematic and unsystematic risk and thesis proportion of stock of each commercial bank are as follows:

4.8.1 Segregation of Risk of BOKL Stock

Total Risk measured by variance (σ^2) has segregation into Systematic Risk and Unsystematic Risk.

Variance of the C.S. of BOKL = Total Risk of the C.S. of BOKL

Here,

$\sigma^2_{BOKL} = \beta^2_{BOKL}.\sigma^2_M + Var(e)$

or, $(0.6991)^2 = (1.1865)^2 \times (0.4926)^2 + Var(e)$

or, $0.4887 = 0.3416 + Var(e)$

or, $Var(e) = 0.4887 - 0.3416$

$\therefore$ $Var(e) = 0.1471$

$\therefore$ Total Risk (σ^2_{BOKL}) = 0.4887

(a) Systematic Risk ($\beta^2_{BOKL}.\sigma^2_M$) = 0.3416

$\therefore$ Proportion of Systematic Risk = $\frac{\text{Systematic Risk}}{\text{Total Risk}} = \frac{\beta^2_{BOKL}.\sigma^2_M}{\sigma^2_{BOKL}}$

$= \frac{0.3416}{0.4887} = 0.6990$ or 69.90%

(b) Unsystematic Risk = Var(e) = 0.1471

$\therefore$ Proportion Unsystematic Risk = $\frac{\text{Unsystematic Risk}}{\text{Total Risk}} = \frac{Var(e)}{\sigma^2_{BOKL}}$

$= \frac{0.1471}{0.4887} = 0.3010$ or 30.10%

Here, the Total Risk of BOKL stock consists of 69.90% Systematic Risk and 30.10% Unsystematic Risk.

4.8.2 Segregation of Risk of NIBL Stock

Total Risk measured by variance (σ^2) has segregation into Systematic Risk and Unsystematic Risk.

Variance of the C.S. of NIBL = Total Risk of the C.S. of NIBL

Here,

$\sigma^2_{NIBL} = \beta^2_{NIBL}.\sigma^2_M + Var(e)$

or, $(0.6235)^2 = (1.2165)^2 \times (0.4926)^2 + \text{Var(e)}$

or, $0.3888 = 0.3591 + \text{Var(e)}$

or, $\text{Var(e)} = 0.3888 - 0.3591$

$\therefore$ Var(e) = 0.0297

$\therefore$ Total Risk (σ^2_{NIBL}) = 0.3888

(a) Systematic Risk ($\beta^2_{NIBL}.\sigma^2_M$) = 0.3591

$\therefore$ Proportion of Systematic Risk = $\frac{\text{Systematic Risk}}{\text{Total Risk}} = \frac{\beta^2_{NIBL}.\sigma^2_M}{\sigma^2_{NIBL}}$

$= \frac{0.3591}{0.3888} = 0.9237$ or 92.37%

(b) Unsystematic Risk = Var(e) = 0.0297

$\therefore$ Proportion Unsystematic Risk = $\frac{\text{Unsystematic Risk}}{\text{Total Risk}} = \frac{Var(e)}{\sigma^2_{NIBL}}$

$= \frac{0.0297}{0.3888} = 0.0763$ or 7.63%

Here, the Total Risk of NIBL stock consists of 92.37% Systematic Risk and 7.63% Unsystematic Risk.

4.8.3 Segregation of Risk of SCBNL Stock

Total Risk measured by variance (σ^2) has segregation into Systematic Risk and Unsystematic Risk.

Variance of the C.S. of SCBNL = Total Risk of the C.S. of SCBNL

Here,

$\sigma^2_{SCBNL} = \beta^2_{SCBNL}.\sigma^2_M + Var(e)$

or, $(0.8092)^2 = (1.5870)^2 \times (0.4926)^2 + \text{Var(e)}$

or, $0.6548 = 0.6111 + \text{Var(e)}$

or, $\text{Var(e)} = 0.6548 - 0.6111$

$\therefore$ Var(e) = 0.0437

$\therefore$ Total risk (σ^2_{SCBNL}) = 0.6548

(a) Systematic Risk ($\beta^2_{SCBNL}.\sigma^2_M$) = 0.6111

$\therefore$ Proportion of Systematic Risk = $\frac{\text{Systematic Risk}}{\text{Total Risk}} = \frac{\beta^2_{SCBNL}.\sigma^2_M}{\sigma^2_{SCBNL}}$

$= \frac{0.6111}{0.6548} = 0.9333$ or 93.33%

(b) Unsystematic Risk = Var(e) = 0.0437

$\therefore$Proportion Unsystematic Risk = $\frac{\text{Unsystematic Risk}}{\text{Total Risk}} = \frac{Var(e)}{\sigma^2_{SCBNL}}$

$= \frac{0.0437}{0.6548} = 0.0667$ or 6.67%

Here, the Total Risk of SCBNL stock consists of 93.33% Systematic Risk and 6.67% Unsystematic Risk.

4.8.4 Segregation of Risk of NABIL Stock

Total Risk measured by variance (σ^2) has segregation into Systematic Risk and Unsystematic Risk.

Variance of the C.S. of NABIL = Total Risk of the C.S. of NABIL

Here,

$\sigma^2_{NABIL} = \beta^2_{NABIL}.\sigma^2_M + Var(e)$

or, $(1.10)^2 = (2.0461)^2 \times (0.4926)^2$+Var(e)

or, 1.21 = 1.0159+Var(e)

or, Var(e) = 1.21-1.0159

$\therefore$ Var(e) = 0.1941

$\therefore$ Total Risk (σ^2_{NABIL}) = 1.21

(a) Systematic Risk ($\beta^2_{NABIL}.\sigma^2_M$) = 1.0159

$\therefore$ Proportion of Systematic Risk = $\frac{\text{Systematic Risk}}{\text{Total Risk}} = \frac{\beta^2_{NABIL}.\sigma^2_M}{\sigma^2_{NABIL}}$

$= \frac{1.0159}{1.21} = 0.8396$ or 83.96%

(b) Unsystematic Risk = Var(e) = 0.1941

$$\therefore \text{Proportion Unsystematic Risk} = \frac{\text{Unsystematic Risk}}{\text{Total Risk}} = \frac{Var(e)}{\sigma^2_{NABIL}}$$

$$= \frac{0.1941}{1.21} = 0.1604 \text{ or } 16.04\%$$

Here, the Total Risk of NABIL stock consists of 83.96% Systematic Risk and 16.04% Unsystematic Risk.

4.8.5 Segregation of Risk of NSBIL Stock

Total Risk measured by variance (σ^2) has segregation into Systematic Risk and Unsystematic Risk.

Variance of the C.S. of NSBIL = Total Risk of the C.S. of NSBIL

Here,

$\sigma^2_{NSBIL} = \beta^2_{NSBIL}.\sigma^2_M + Var(e)$

or, $(0.8951)^2 = (1.5545)^2 \times (0.4926)^2 + \text{Var(e)}$

or, 0.8012 = 0.5864+Var(e)

or, Var(e) = 0.8012-0.5864

$\therefore$ Var(e) = 0.2148

$\therefore$ Total Risk (σ^2_{NSBIL}) = 0.8012

(a) Systematic Risk ($\beta^2_{NSBIL}.\sigma^2_M$) = 0.5864

$$\therefore \text{Proportion of Systematic Risk} = \frac{\text{Systematic Risk}}{\text{Total Risk}} = \frac{\beta^2_{BOKL}.\sigma^2_M}{\sigma^2_{NSBIL}}$$

$$= \frac{0.5864}{0.8012} = 0.7319 \text{ or } 73.19\%$$

(b) Unsystematic Risk = Var(e) = 0.2148

$$\therefore \text{Proportion Unsystematic Risk} = \frac{\text{Unsystematic Risk}}{\text{Total Risk}} = \frac{Var(e)}{\sigma^2_{NSBIL}}$$

$$= \frac{0.2148}{0.8012} = 0.2681 \text{ or } 26.81\%$$

Here, the Total Risk of NSBIL stock consists of 73.19% Systematic Risk and 26.81% Unsystematic Risk.

Table-4.26
Summary of Total Risk of Sampled Stocks

S.N.	Commercial Banks	Total Risk	Systematic Risk (S.R.)	Proportion of S.R. (%)	Unsystematic Risk (U.S.R.)	Proportion of U.S.R. (%)
1	BOKL	0.4887	0.3416	69.90	0.1471	30.10
2	NIBL	0.3888	0.3591	92.37	0.0297	7.63
3	SCBNL	0.6548	0.6111	93.33	0.0437	6.67
4	NABIL	1.21	1.0159	83.96	0.1941	16.04
5	NSBIL	0.8012	0.5864	73.19	0.2148	26.81

From the above Table-4.26, the segregation of total risk into systematic risk and unsystematic risk are summarized. The stock of SCBNL has highest proportion of systematic risk (i.e. 93.33%) among all others sample stocks. Whereas BOKL has lowest proportion of systematic risk (i.e. 69.90%). It shows that while constructing a portfolio to minimize the risk BOKL stock is favorable for investment because the investors can minimized the proportion of risk.

4.9 Testing of Hypothesis

This hypothesis is based on the test of significance of difference between sample mean and population mean. For this case, expected return of listed commercial banks is taken to calculate overall expected return of all components.

Table-4.27

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

Banks	**Return (R)**	**$(R-\bar{R})$**	**$(R-\bar{R})^2$**
BOKL	0.2308	-0.0510	0.0026
NIBL	0.1198	-0.1620	0.0262
SCBNL	0.2921	0.0103	0.0001
NABIL	0.3959	0.1141	0.0130
NSBIL	0.3705	0.0887	0.0079
Total	**1.4091**		**0.0498**

Source: Table-4.2, Table-4.4, Table-4.6, Table-4.8 & Table-4.10.

We have,

Expected Return ($\bar{R}$) = $\frac{\sum R}{n} = \frac{1.4091}{5} = 0.2818$

Standard Deviation (σ) = $\sqrt{\frac{\sum (R-\bar{R})^2}{n-1}} = \sqrt{\frac{0.0498}{5-1}} = 0.1116$

Coefficient of Variation (C.V.) = $\frac{\sigma}{\bar{R}} = \frac{0.1116}{0.2818} = 0.3960$

Step (1): Setting of Hypothesis

Null Hypothesis (H_0): $\mu = \mu_0$ i.e. there is no significance difference between the expected return of common stock of listed commercial banks & overall market return.

Alternative Hypothesis (H_1): $\mu \neq \mu_0$ i.e. there is significance difference between the expected return of common stock of listed commercial banks & overall market return.

Step (2): Calculation of H_0 Test Statistic

$$t_{cal} = \frac{\overline{X} - \mu}{\frac{S}{\sqrt{n}}} = \frac{0.2818 - 0.0703}{\frac{0.1116}{\sqrt{5}}} = 4.2377$$

Where,

t_{cal} = Calculated Value of 't'

$\overline{X}$ = Arithmetic Mean of Sample Statistic = 0.2818

μ = Arithmetic Mean of Population Parameter = 0.0703

S = Sample Standard Deviation = 01116

n = Sample Size = 5

Step (3): Let Level of Significance (α) = 5%

Step (4): Degree of Freedom (d.f.) = n-1 = 5-1 = 4

Step (5): Tabulated or Critical Value of 't' (i.e. t_{tab})

The tabulated value of t at 5% level of significance for two tailed test at 4 degree of freedom from student's t-distribution table is 2.776.

i.e. $t_{tab} = 2.776$

Step (6): Decision

Since the calculated value of t (i.e. $t_{cal} = 4.2377$) is greater than the tabulated value (i.e. $t_{tab} = 2.776$). So, null hypothesis (H_0) is rejected. It means alternative hypothesis (H_1) is accepted. Therefore, it can reasonably be conclude that there is significance difference between the expected return of common stock of listed commercial banks & overall market return.

4.10 Major Findings of the Study

This study enables investors to keep the returns they can expect and the risk they may take into better perspective. We know that Nepalese stock market is in effect of openness and liberalization in national economy. But Nepalese individual investors cannot analyze the securities as well as market properly because of the lack of information and poor knowledge about the analysis of securities for investment.

- The return is the income received on a stock investment, which is usually expressed in percentage. Expected return on common stock of NABIL is maximum i.e. 39.59%. Similarly expected return on C.S. of NSBIL is 37.05%, SCBNL is 29.21%, BOKL is 23.08% and NIBL is 11.98%.
- Risk is the variability of returns which is measured in terms of standard deviation. On the basis of S.D., common stock of NABIL is most risky since it has high S.D. and common stock of NIBL is least risky with its lowest S.D. On the others hand, we know that C.V. is more rational basis of investment decision which measures the risk per unit of return. On the basis of C.V., common stock of NSBIL is the best among all other banks. NSBIL has 2.4159 unit of risk per 1 unit of return. By observing all the factors of risk and return, stock of NSBIL may be considered better investment as it has medium risk and medium return. Thus, the investors are suggested to invest in the stock of NSBIL.
- SCBNL is in the highest position i.e. 32.89% (Rs.16775.40 millions) and BOKL is in lowest position i.e. 9.44% (Rs.4813.07 millions) according to their interbank market capitalization comparison.
- Standard deviation is only the measured of unsystematic risk, which is not defined by the market. Another major aspect of the risk is systematic risk, which is defined by the market and measured by beta coefficient (β). Beta coefficient explains the sensitivity or volatility of the stock with market. Higher the beta, greater the volatility. In this context, common stock of NABIL is most volatile (i.e. β = 2.0461) and common stock of BOKL is

least volatile (i.e. β = 1.1865). The bank's stock having the beta more than beta coefficient of market i.e. more than 1 is aggressive type of common stock and less than 1 is defensive type of common stock. We find that all banks have aggressive type of common stock.

- One of the main significance of beta is in capital asset pricing model (CAPM). CAPM is the model that describes the relationship between risk and required rate of return. Where risk free rate plus a premium based on the systematic risk of the security is required rate of return of that stock. Comparison between expected rate of return and required rate of return, identifying whether the stock is overpriced or underpriced. This study shows that most of the stocks of commercial banks, which are analyzed, are underpriced. This means that their stock value will be increased in near future. All the stocks are in demand so; investors can buy the common stock of any bank.
- From the two assets portfolio, portfolio return for the stock of BOKL & NSBIL is found to be the highest as compared to the other stocks of bank (i.e. 26.53%). Whereas the stock of BOKL & NIBL is found to have the lowest return this is only 12.34%. So, the investors are suggested to buy the stock of BOKL & NSBIL considering the return factor only.
- From the portfolio risk, we can conclude that the higher risk generates the higher return, which can be seen from the stock BOKL & NSBIL, i.e. when risk is 67.17%, which is also low. If the investors are not ready to take risk, then they are advice to buy the stock of BOKL & NSBIL as the risk is low i.e. 67.17% and return is also high i.e. 26.53%.
- Systematic risk cannot be diversified through creation of portfolio. It is occurred due to market factor. Unsystematic risk can be diversified through creation of portfolio. It is occurred due to internal management factor. This study shows that BOKL has high proportion of unsystematic risk i.e. 30.10% which can be minimized from internal management. Whereas SCBNL has proportion of systematic risk i.e. 93.33%. This cannot be minimized from internal management.

- Most of the investors invest only keeping the return in the mind but they are unable to calculate the risk factor of the security. Most of the Nepalese private investors invest in single securities. Some of the investors use their fund in two or more securities. But it is found that they don't make any analysis of portfolio before selecting security. They invest their fund in different securities on the basis of expectation and assumption of individual securities rather than analysis of the effect of portfolio. It seems that they don't have knowledge of the risk diversification by using portfolio of their investment.

CHAPTER - V
SUMMARY, CONCLUSION AND RECOMMENDATION

The present study has been carried out with the objectives of analyzing the risk and return of the selected companies. Accordingly, relevant literature was reviewed and the study was carried out following a suitable methodology. A brief explanation of all procedures and effects has been summed up in this chapter along with conclusions drawn and suggestion, recommended.

5.1 Summary

Risk and return is getting considerable attention in financial management. The central focus of finance is tradeoff between risk and return, and its major part, stock market has greatest glamour, not only for the professional or institutional investors but also for the individual or private investors. Development in the field of finance has led to the application of many new concepts and models to deal with various issues related to financial management.

The relationship between risk and return is described by investor's perception about risk and their demand for compensation. No investors will like to invest in risky assets unless he/she is assured of adequate compensation for the acceptance of risk. Hence, risk plays a central role in the analysis of investment. Investors often ask about an investment and like to know if the risk will command higher premium and trade-off between the two assumes a linear relationship between risk and premium.

It can be said that the rate of return on investment is many factors that include the real cost of money inflation risk, maturity risk, default risk etc. The investors offers more capital or higher rate of return, whereas users of capital always show their readiness to use more capital at lower rate.

Common stock is the most risky security and lifeblood of stock market because of higher expected return, an investment in common stock of a corporate firm

neither ensured an annual return nor ensures the return of principal. Therefore, investment in the common stock is very sensitive on the ground of risk. Dividends to common stock holders are paid only if the firm makes an operating profit after tax and preference dividend of the residual as after satisfying to all creditors and preferential shareholders. Common stock has attracted more investors in Nepal, Rush in the primary market during the primary issue is one of the example. Private common stock holders are the passive owners of the company. But private investors play a vital role in economic development of the nation by mobilizing the dispersed capital in different form in the society.

The main objectives of the study are to analyze the risk and return in common stock investment of Nepalese stock market. The study is focused on the common stock of listed commercial banks in Nepal. Hence, listed commercial banks are taken as reference to analyze the risk and return in common stock investment. While analyzing the risk and return, brief review of related studies has been performed. Scientific methods are used in data analysis. Tables, graphs and diagrams are used which present the data and results more clearly. Both quantitative and qualitative analyses have performed by using statistical tools and financial tools. Secondary data are collected from NEPSE, NRB, SEBO/N, website and other related banks, other subjective types of information are collected through financial executives of companies and officials of NRB, SEBO/N and NEPSE. Findings of analysis and conclusions are described below.

5.2 Conclusions

The conclusions which emerge from this study are drawn as follows:

- During the calculation period, NABIL has the highest expected return i.e. 39.59% and NIBL has the lowest expected return i.e. 11.98%. So only

looking to return we can get highest return from investment in common stock of NABIL.

- When total risk is considered at the same time, NABIL has the highest total risk i.e. 110% and NIBL has the lowest total risk i.e.62.35%.
- Coefficient of variation (C.V.) is one of the rational basis to make investment decision in common stock, closing stock of NSBIL is the best invest able security of the sample bank due to its lowest C.V. i.e. 2.4159 and closing stock of NIBL has the high risky because of its high C.V. i.e. 5.2045.
- Beta coefficient of NABIL has the highest i.e. 2.0461 and BOKL has the lowest i.e. 1.1865. It shows that BOKL has the least risky and NABIL is top most one among the selected banks.
- According to CAPM approach, NABIL has the highest required rate of return and BOKL has the lowest one. All the banks' common stocks are underpriced. So, all the banks' common stocks are attractive for investment.
- Investors need to diversify their fund to reduce risk; proper construction of portfolio will reduce considerable potential loss which can be defined in terms of risk. From the calculation the portfolio return between BOKL & NSBIL is high return of 26.53% with the standard deviation of 67.17%.
- Correlation coefficient between banks and banks is positive, which indicates that there is high degree of positive correlation between them therefore the investors should try to formulate portfolio with other trading & manufacturing firms.
- While considering the systematic risk of commercial banks, SCBNL has the highest proportion of systematic risk i.e. 93.33% which cannot be minimized from the internal management. On the other hand BOKL has the high proportion of unsystematic risk i.e. 30.10% which can be minimized from the internal management.
- The result of hypothesis test shows that there is significance difference between the expected return of common stock of listed commercial banks & overall market return.

5.3 Recommendations and Suggestions

Mainly this study is focused on individual investors. Others related components of stock market are also taken into account to some extent. The following recommendations and suggestions are prescribed on the basis of data analysis and major findings of this research.

- 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 in the decision based on the risk and return. It is highly preferable to use C.V. to reach to ideal investment alternatives.
- Comparison between the listed commercial bank, NSBIL is the best bank among other banks. Therefore, the investors can get the appropriate return in medium risk for investment.
- Investors need to diversify their fund to reduce risk. Proper construction of portfolio will reduce considerable potential loss, which can be defined in terms of risk. Return for the stock of BOKL & NSBIL is found to the highest as compared to other stocks of banks. So, construction of portfolio between the common stock of BOKL & NSBIL is recommended for investment.
- From the analysis of portfolio risk and portfolio return, aggressive investors are suggested to buy the common stock of BOKL & NSBIL as the risk factor is low and return factor for those stocks are also high. Investors are suggested to buy the stock of BOKL & NSBIL as risk is also low and return is also high.
- Investment in common stock is a very risky job as there is no guarantee of the return than which is expected. On the other hand, there is also a heavy chance of loss. The stock market is undoubtedly risky in the starting term and investor needs to be prepared for it. The investors should try and work out their attitude towards the riskiness of various investment strategies.
- Administration should be made further efficient to check the performance of individual company's flow of information and it should be more regular.

- Investment clubs are a good way to exchange investment ideas in Nepalese context. There are not such types of club for collective investment i.e. mutual of worth so far for those people with little investment. In addition, it allows investors with limited resources to obtain reasonable diversification so sharing experience, ideas and taking expert can be greater help.
- Risk and return analysis is completely untouched area in Nepalese context. It is strongly suggested that further study can be conducted on this topic and research can includes maximum number of samples.
- Analysis of personal risk attitude, needs and requirement will be helpful before making an investment decision in stock market. Investors should make several discussions with stockbroker before reaching at the decision. Investors should not invest only on imagination and rumors.

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APPENDIX

Appendix-I

Calculation of Total Dividend of BOKL

Total Dividend (Rs.) = Cash Dividend + % of Stock Dividend × Next Year's MPS	
2006/07	= Rs. 20 + 0% × Rs. 2350 = Rs. 20
2007/08	= Rs. 2.11 + 40% × Rs. 1825 = Rs. 732.11
2008/09	= Rs. 7.37 + 40% × Rs. 840 = Rs. 343.37
2009/10	= Rs. 15 + 15% × Rs. 570 = Rs. 100.50
2010/11	= Rs. 16.75 + 18% × Rs. 628 = Rs. 129.79

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Closing MPS	850	1375	2350	1825	840	570	628
Cash Dividend	18	20	2.11	7.37	15	16.75	21.32
Stock Dividend	30	0	40	40	15	18	5

Source: Annual Report of BOKL F/Y 2011/12.

Appendix-II

Calculation of Total Dividend of NIBL

Total Dividend (Rs.) = Cash Dividend + % of Stock Dividend × Next Year's MPS	
2006/07	= Rs. 5 + 25% × Rs. 2450 = Rs. 617.5
2007/08	= Rs. 7.5 + 33.33% × Rs. 1388 = Rs. 470.12
2008/09	= Rs. 20 + 0% × Rs. 705 = Rs. 20
2009/10	= Rs. 25 + 0% × Rs. 515 = Rs. 25
2010/11	= Rs. 25 + 25% × Rs. 511 = Rs. 152.75

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Closing MPS	1260	1729	2450	1388	705	515	511
Cash Dividend	20	5	7.5	20	25	25	5
Stock Dividend	35.46	25	33.33	0	0	25	25

Source: Annual Report of NIBL F/Y 2009/10 & F/Y 2011/12.

Appendix-III

Calculation of Total Dividend of SCBNL

Total Dividend (Rs.) = Cash Dividend + % of Stock Dividend × Next Year's MPS						
2006/07	= Rs. 80	+	50%	×	Rs. 6830	= Rs. 3495
2007/08	= Rs. 80	+	50%	×	Rs. 6010	= Rs. 3085
2008/09	= Rs. 50	+	50%	×	Rs. 3279	= Rs. 1689.50
2009/10	= Rs. 55	+	15%	×	Rs. 1800	= Rs. 325
2010/11	= Rs. 50	+	0%	×	Rs. 1799	= Rs. 50

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Closing MPS	3775	5900	6830	6010	3279	1800	1799
Cash Dividend	130	80	80	50	55	50	45
Stock Dividend	10	50	50	50	15	0	15

Source: Annual Report of SCBNL F/Y 2009/10 & F/Y 2011/12.

Appendix-IV

Calculation of Total Dividend of NABIL

Total Dividend (Rs.) = Cash Dividend + % of Stock Dividend × Next Year's MPS						
2006/07	= Rs. 100	+	40%	×	Rs. 5275	= Rs. 2210
2007/08	= Rs. 60	+	40%	×	Rs. 4899	= Rs. 2019.60
2008/09	= Rs. 35	+	50%	×	Rs. 2384	= Rs. 1227
2009/10	= Rs. 30	+	40%	×	Rs. 1252	= Rs. 530.80
2010/11	= Rs. 30	+	0%	×	Rs. 1355	= Rs. 30

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Closing MPS	2240	5050	5275	4899	2384	1252	1355
Cash Dividend	85	100	60	35	30	30	40
Stock Dividend	0	40	40	50	40	0	20

Source: Annual Report of NABIL F/Y 2011/12.

Appendix-V

Calculation of Total Dividend of NSBIL

Total Dividend (Rs.) = Cash Dividend + % of Stock Dividend × Next Year's MPS							
2006/07	= Rs. 12.59	+	35%	×	Rs. 1511	=	Rs. 541.44
2007/08	= Rs. 0	+	0%	×	Rs. 1900	=	Rs. 0
2008/09	= Rs. 2.11	+	40%	×	Rs. 741	=	Rs. 298.51
2009/10	= Rs. 5	+	12.5%	×	Rs. 565	=	Rs. 75.63
2010/11	= Rs. 5	+	12.5%	×	Rs. 635	=	Rs. 84.38

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Closing MPS	612	1176	1511	1900	741	565	635
Cash Dividend	5	12.59	0	2.11	5	5	5
Stock Dividend	0	35	0	40	12.5	12.5	12.5

Source: Annual Report of NSBIL F/Y 2008/09 & F/Y 2011/12.

Appendix-VI

Calculation of Beta Co-efficient of the C.S. of BOKL

Fiscal Year	**Return (R_j)**	**($R_j - \bar{R}_j$)**	**Return on Market (R_m)**	**($R_m - \bar{R}_m$)**	**($R_j - \bar{R}_j$) ($R_m - \bar{R}_m$)**
2006/07	0.6412	0.4104	0.7681	0.6978	0.2864
2007/08	1.2415	1.0107	0.4085	0.3382	0.3418
2008/09	-0.0773	-0.3081	-0.2224	-0.2927	0.0902
2009/10	-0.4847	-0.7155	-0.3623	-0.4326	0.3095
2010/11	-0.1669	-0.3977	-0.2405	-0.3108	0.1236
Total					**1.1515**

Source: Table-4.2 & Table-4.13.

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{1.1515}{5-1} = 0.2879$$

Again,

$$\beta_m = \frac{Cov(R_j, R_m)}{\sigma^2 m} = \frac{0.2879}{(0.4926)^2} = 1.1865$$

Where,

n = No. of observation

σ^2_m = Variance of market return

R_j = Return on stock of BOKL

R_m = Return on Market

Appendix-VII

Calculation of Beta Co-efficient of the C.S. of NIBL

Fiscal Year	**Return (R_j)**	**(R_j- $\overline{R}_j$)**	**Return on Market (R_m)**	**(R_m- $\overline{R}_m$)**	**(R_j- $\overline{R}_j$) (R_m- $\overline{R}_m$)**
2006/07	0.8623	0.7425	0.7681	0.6978	0.5181
2007/08	0.6889	0.5691	0.4085	0.3382	0.1925
2008/09	-0.4253	-0.5451	-0.2224	-0.2927	0.1596
2009/10	-0.4741	-0.5939	-0.3623	-0.4326	0.2569
2010/11	-0.0528	-0.1726	-0.2405	-0.3108	0.0536
Total					**1.1807**

Source: Table-4.4 & Table-4.13.

We have,

$$Cov(R_j, R_m) = \frac{\sum(R_j - \overline{R}_j)(R_m - \overline{R}m)}{n-1} = \frac{1.1807}{5-1} = 0.2952$$

Again,

$$\beta_m = \frac{Cov(R_j, R_m)}{\sigma^2 m} = \frac{0.2952}{(0.4926)^2} = 1.2165$$

Where,

n = No. of observation

σ^2_m = Variance of market return

R_j = Return on stock of NIBL

R_m = Return on Market

Appendix-VIII

Calculation of Beta Co-efficient of the C.S. of SCBNL

Fiscal Year	Return (R_j)	($R_j - \bar{R}_j$)	Return on Market (R_m)	($R_m - \bar{R}_m$)	($R_j - \bar{R}_j$) ($R_m - \bar{R}_m$)
2006/07	1.4887	1.1966	0.7681	0.6978	0.8350
2007/08	0.6805	0.3884	0.4085	0.3382	0.1314
2008/09	0.1273	-0.1648	-0.2224	-0.2927	0.0482
2009/10	-0.4003	-0.6924	-0.3623	-0.4326	0.2995
2010/11	-0.4358	-0.7279	-0.2405	-0.3108	0.2262
Total					**1.5403**

Source: Table-4.6 & Table-4.13.

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{1.5403}{5-1} = 0.3851$$

Again,

$$\beta_m = \frac{\text{Cov}(R_j, R_m)}{\sigma^2_m} = \frac{0.3851}{(0.4926)^2} = 1.5870$$

Where,

n = No. of observation

σ^2_m = Variance of market return

R_j = Return on stock of SCBNL

R_m = Return on Market

Appendix-IX

Calculation of Beta Co-efficient of the C.S. of NABIL

Fiscal Year	Return (R_j)	($R_j - \bar{R}_j$)	Return on Market (R_m)	($R_m - \bar{R}_m$)	($R_j - \bar{R}_j$) ($R_m - \bar{R}_m$)
2006/07	2.2411	1.8452	0.7681	0.6978	1.2876
2007/08	0.4445	0.0486	0.4085	0.3382	0.0164
2008/09	0.1613	-0.2346	-0.2224	-0.2927	0.0687
2009/10	-0.4050	-0.8009	-0.3623	-0.4326	0.3465
2010/11	-0.4622	-0.8581	-0.2405	-0.3108	0.2667
Total					**1.9859**

Source: Table-4.8 & Table-4.13.

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{1.9859}{5-1} = 0.4965$$

Again,

$$\beta_m = \frac{\text{Cov}(R_j, R_m)}{\sigma^2_m} = \frac{0.4965}{(0.4926)^2} = 2.0461$$

Where,

n = No. of observation

σ^2_m = Variance of market return

R_j = Return on stock of NABIL

R_m = Return on Market

Appendix-X

Calculation of Beta Co-efficient of the C.S. of NSBIL

Fiscal Year	Return (R_j)	($R_j - \bar{R}_j$)	Return on Market (R_m)	($R_m - \bar{R}_m$)	($R_j - \bar{R}_j$) ($R_m - \bar{R}_m$)
2006/07	1.8063	1.4358	0.7681	0.6978	1.0019
2007/08	0.2849	-0.0856	0.4085	0.3382	-0.0289
2008/09	0.4550	0.0845	-0.2224	-0.2927	-0.0247
2009/10	-0.5702	-0.9407	-0.3623	-0.4326	0.4069
2010/11	-0.1236	-0.4941	-0.2405	-0.3108	0.1536
Total					**1.5088**

Source: Table-4.10 & Table-4.13.

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{1.5088}{5-1} = 0.3772$$

Again,

$$\beta_m = \frac{\text{Cov}(R_j, R_m)}{\sigma^2_m} = \frac{0.3772}{(0.4926)^2} = 1.5545$$

Where,

n = No. of observation

σ^2_m = Variance of market return

R_j = Return on stock of NSBIL

R_m = Return on Market