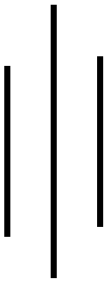
RISK AND RETURN ANALYSIS, ITS IMPACT ON PROFITABILITY

OF

COMMERCIAL BANKS IN NEPAL

(With special reference to NABIL Bank Ltd., Standard Chartered Bank Nepal Ltd. and Everest Bank Ltd.)



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A Thesis Submitted to:

Office of the Dean

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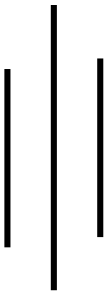

In Partial Fulfillment of the Requirement for the Degree of Master's of Business Studies (M.B.S)

Kathmandu, Nepal

March, 2013

RECOMMENDATION

This is to certify that the thesis

Submitted by

Bikrant Lamichhane

Entitled

RISK AND RETURN ANALYSIS, ITS IMPACT ON PROFITABILITY OF COMMERCIAL BANKS IN NEPAL

(With special reference to NABIL Bank Ltd., Standard Chartered Bank Nepal Ltd. and Everest Bank Ltd.)

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

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

VIVA - VOCE SHEET

We have conducted the viva- voce examination of the Thesis

Submitted by:

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And found the thesis to be the original work of the student written in accordance with the prescribed format. We recommend the Thesis to be accepted as partial fulfillment of the requirement for Master's Degree of Business Studies (MBS).

Viva - Voce Committee

Head Of Research Department **…**

Member (Thesis Supervisor) **…**

Member (External Expert) **…**

Date…

DECLARATION

I hereby, declare that the work reported in this thesis entitled **"RISK & RETURN ANALYSIS, ITS IMPACT ON PROFITABILITY OF COMMERCIAL BANKS IN NEPAL (With special reference to NABIL Bank Ltd., Standard Chartered Bank Nepal Ltd. and Everest Bank Ltd.) "** 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 Masters of Business Studies (MBS) under the supervision of Associate Professor Achyut Raj Bhattrai, Lecturer of Shanker Dev Campus, Putalisadak, Kathmandu.

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List of Abbreviations

A.D.:	Anno Domini
ABBS:	Any Branch Banking System
AM:	Arithmetic Mean
ATM:	Automatic Teller Machine
B.S.:	Bikram Sambat
BVPS:	Book Value per Share
C.V:	Coefficient of Variance
CAPM:	capital asset pricing model
CML:	Capital Market Line
CPI:	consumer price index
DPS:	Dividend per Share
EBL:	Everest Bank Limited
EPS:	Earning Per Share
F.Y:	Fiscal Year
JVBs:	Joint Venture Banks
Ktm.:	Kathmandu
LC:	Letter of Credit
Ltd.:	Limited
Misc.:	Miscellaneous
MPS:	Market per Share
NEPSE:	Nepal Stock Exchange
NPAT:	Net Profit after Taxes
NRB:	Nepal Rastra Bank
Pvt.:	Private
ROA:	Return on Assets
ROE:	Return on Shareholder’s Equity
S.D:	Standard Deviation
SCBNL:	Standard Charted Bank Nepal Limited
SML:	Security market line
TU:	Tribhuvan University
UK:	United Kingdom

CHAPTER – I

INTRODUCTION

1.1 Background of the Study

In Nepal, industrial development was started since 1936 with the establishment of council of industry in that year. Nepal launched its first economic planning in 1956. Thus, the planned effort for industrialization was started since 1956. Nepal has completed nine economic plans. However, the condition of industries and entrepreneurship is not as expected despite this entrepreneurship has been growing gradually after the economic liberalization 1990. Various enterprises so far privatized are doing well, some of them are closed and still some of them are in difficult verge. Main investment related problems as indicated by a study carried out by Ministry of Finance are “scarcity of funds, absence of big investors, skilled manpower and under-developed capital market etc.” Thus, to accelerate or to upgrade the level of overall company performance, the investors and other constituents must know about investment environment, process, evaluating methods and techniques and other implications by which funds flow to the needy company and in turn fund providers get return out of the profit earned by the company.

Risk refers to the chance that some unfavorable event will occur. Investment risk is the likelihood of earning a less return than expected. Greater the chance of low or negative return, the riskier the investment is said to be. Risk measures the variability of returns.

Return, on the other hand, is the income received from an investment which is mainly of two types: one is dividend received and the other is income earned by appreciation of investment. Both type of income is unpredictable and actual and expected return may vary due to the various factors.

Risk and return are the tools which help us at every step of following investment process:-

1) Set investment policy,
2) Perform security analysis,
3) Construct a portfolio,
4) Revise the portfolio,
5) Evaluate the portfolio

While setting investment policy is must state objectives precisely in terms of both risk and return. We must evaluate various securities in terms of the same dimensions. And the investor will choose his\her optimal portfolio from the set of portfolios that: -

1) Offer maximum expected return for varying level of risk
2) Offer minimum risk for varying level of expected return.

The set of portfolio meeting these two conditions is known as the efficient frontier from which an investor may find or construct his portfolio. In nutshell, we cannot assume investment without these dimensions i.e. risk and return.

Most of the Nepalese investors invest in single security. "Though some of the investors invest in two or more, it is found that they don't make any analysis of portfolio before selection of such securities to invest. *(Gurung, 1999:60)* They invest their funds in different securities on the basis of expectations and assumptions of individual security rather than analysis of effect of portfolio. So we must make them well acquainted with these tools along with their practical implications on investment decisions and evaluation.

Generally, investors are risk averse. They are always seeking higher return for more risk as risk premium. So the primary problem in investment is to identify the security which has low risk and high return. However, return cannot increase substantially; risk can be reduced by diversification of funds in different stocks making a portfolio. Well diversification can eliminate the unsystematic risk which is not explained by general market movement. Systematic risk which is associated with change in return on the market as a whole cannot be avoided by diversification.

These risk and return dimensions are obviously an important concept in investment and hence, to be provided to the investors to motivate them to invest rationally.

1.2. Brief Introduction of Selected Banks

1.2.1 An Introduction of Nabil Bank

Nabil Bank ltd, the first foreign joint venture bank of Nepal, started in 12th July 1984 [29th Ashad 2041]. Dubai Bank Ltd. was the initial joint venture partner with 50% equity investment. The share owned by Dubai Bank ltd. was transferred to Emirates Bank International ltd. Dubai sold its entire 50% equity holding to National Bank Ltd. Bangladesh. Nabil was incorporated with the objective of extending international standard modern banking services to various sector of the society. Pursuing its

objectives, Nabil provides a full range of commercial banking services through its 19 points of representation across the kingdom and over 170 reputed correspondent banks across the globe.

Nabil, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business.

Operation of the bank including day-to-day operations and risk management are managed by highly qualified and experienced management team. Bank is fully equipped with modern technology which includes ATM's, credit cards, state-of-art, and world renowned software from Infosis Technologies System, Bangalore, India, Internet Banking system and Tele Banking system.

Present Capital Structure of NABIL

Share Capital & Reserves:	**Amount in NRs.**
Authorized Capital	500,000,000
Issued equity capital	491,654,400
Paid up equity Capital	491,654,400

Source: Annual Report of NABIL Bank Ltd.,

Share Holding Pattern [In Percent]

1.	NB (International) Limited	50%
2.	NIDC	10%
3.	Rastriya Bema Sansthan	9.66%
4.	Nepal Stock Exchange	0.34%
5.	General Public	30%
Total		100%

Source: Annual Report of NABIL Bank Ltd.,

1.2.2 An Introduction of Standard Chartered Bank Nepal Limited

Standard Chartered Bank Nepal Limited (earlier known as Nepal Grindlays Bank ltd.) came into existence in 2043(1987) as a joint venture between ANZ Grindlays and Nepal Bank Ltd. After acquiring of the Grindlays operation in the region by standard chartered in July 2001, it has become a subsidiary of Standard Chartered London, which holds 75% of shareholdings in the company with remaining 25% held by the public shareholders.

The bank has successfully completed 25yrs of its operation in Nepal in January 2012. The global network of Standard Chartered Group gives the Bank a unique opportunity to provide truly international banking in Nepal. With 15 points of representation and 16 ATMs across the kingdom and with around 350 local staffs, SCBNL is in a position to serve its customers through a large domestic network.

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

Present Capital Structure of SCBNL

Share Capital & Reserves	**Amount in NRs.**
Authorized Capital	1,000,000,000
Issued equity capital	500,000,000
Paid up equity Capital	413,254,800

Source: Annual Report of SCBNL.

Share Holding Pattern [In Percent]

Standard chartered Gridley's bank Australia	50%
Standard Chartered Gridley's bank UK	25%
General Public	25%
Total	100%

Source: Annual Report of SCBNL.

1.2.3 An Introduction of Everest Bank Limited (EBL)

Everest Bank Limited was established in 1992 AD, under the company Act. It is also a foreign joint venture bank and the foreign partner was United Bank of India Ltd. and was managed from the very beginning till Nov. 1996.

Everest Bank Limited started its Operation in 1994 with a view and objectives of extending professionalized and efficient banking services to various segments of the society. The bank is providing customer friendly services through a network of branches. This bank was established as a joint venture bank with Punjab National Bank with 20% share holding. The Punjab National Bank is one of the largest nationalized banks in India having 112 years of banking history. Punjab National Bank is a technology driven bank serving over 35 billion customers through a network of over 4500 branches spread all over the country with a total business of around INR 2178.74 billion. Everest Bank has recognized the value of offerings a complete range of services and has pioneered in extending various customer friendly products such as home loan, education loan, EBL flexi loan, EBL property plus (future lease rental), Home equity loan, vehicles loan, Loan against share, loan against life insurance policy and loan for professional.

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

Present Capital structure of Everest Bank Limited

Share Capital & Reserves	**Amount in NRs.**
Authorized Capital	1,00,00,00,000
Issued Capital	72,98,00,000
Paid up capital	51,80,00,000

Source: Annual Report of Everest Bank Ltd.,

Share Holding Pattern [In Percent]

Subscription	% Holding
Promoter share holders	50 %
Punjab National bank	20 %
General public	30 %
Total	100 %

Source: Annual Report of Everest Bank Ltd.,

1.3 Statement of the Problem

A commercial bank is essentially a dealer in money. It is a financial institution, which receives deposits from public and invests it to business and enterprises against approved securities at certain rates of interest. Higher the investment on loans and advances higher will be the profit. Since investment is the major source of earning, the bank should invest as much as possible on loans and advances. But there are two major problems in front of economy, first to mobilize the greatest amount of saving for the development of the country and second, the collected saving have to be channelized in the productive sector in a planned way. The objective of domestic resource mobilization is essentially to finance development expenditure. Therefore, it is a great concern to our community to accumulate idle resource of the country and utilize them into productive uses and involve in development activities. On the one hand there is capital shortage in the country. It means, the financial resources required for various development opportunities, are not sufficient. As a result commercial banks are not making effort to attract the saving. But on the other hand the real problem is concerned with the utilization of collected resources. Such resources are sometimes looked up and not forwarded to desired sector of the country.

Security market and other institutional set up are yet to work towards providing knowledge and skills to the investors. Investors' attitude and perception plays a vital role in rational decision making which is influenced by the knowledge and access to the data required for analysis. Most of the investors including University graduates; post graduates are least familiar with the financial activities. They don't have any idea about risk and return.

There are no sources to get exact information about the future regarding risk and return on investment in Nepal. It is difficult to have perfect analysis. Even some intellectuals, scholars, University graduates and post graduates in business

administration could not perfectly analyze the risk and return of stock and stock market. There is no organization which can give such information about risk and return. Government policy is also less encouraging to create proper investment environment. Hence, all the responsible sectors have to contribute to increase the alternatives of investment, to make the investors aware of investment and to provide proper information about the market. They do know which security is less risky and more profitable without knowledge of risk and return the investors are not able to make portfolio for investment.

In this study, following issues are to be dealt for the purpose of this study:-

1. How should investors decide to invest based on risk and return?
2. What are the comparative (year-wise) risk and return trend / position of commercial bank?
3. Would portfolio construction within NABIL, SCBNL and EBL be profitable?
4. Whether return is higher than risk or not?
5. To what extent there is systematic risk in relation to total risk?
6. What sort of relationship exists between return and various financial variables for NABIL, SCBNL and EBL?
7. What is the profitability position of NABIL, SCBNL and EBL?

1.4 Objectives of the Study

The main objective of the study is to analyze the risk and return trend / position of the NABIL, SCBNL and EBL. The specific objectives of the study are as follow:-

1. To see comparative (year-wise) risk and return position of NABIL, SCBNL and EBL.
2. To see portfolio risks and return of NABIL, SCBNL and EBL and possible diversification in other sectors.
3. To see systematic and unsystematic risk.
4. To see risk and return and investment opportunities in Commercial banking sectors.
5. To determine relationship of risk and return with various financial variables along with their degree and significance.

6. To see the market sensitivity of stock.
7. To provide suggestions, some practical ideas and recommendations based on the analysis of the data.

1.5 Significance of the Study

Risk and return are crucial factors in every organization influencing investment decisions and process. The main focus of the study is on the analysis of risk and return, which will enable al the related persons to guide the investment related activities. So this study might serve to be crucial information for the respective institution taken as sample.

The main significance of the study is as follow:-

1. This study might be a device to provide ways to select the investment that will provide maximum future return at an acceptable level of risk of NABIL, SCBNL and EBL.
2. This study tries to indicate and analyze the risk and return trend of NABIL, SCBNL and EBL over last five years. So this study will be more beneficial to make the plan, policies and programs of NABIL, SCBNL and EBL.
3. From this research, the investor might have the clear conception over their investment. They will be able to distinct over the right investment. Thus, the decision for investment might be in right place at right time. And also helpful for further investment in different products that can be made through milk by the NABIL, SCBNL and EBL.
4. This study will be helpful or beneficial to interested management, academicians, students and practitioners.

1.6 Limitation of the Study

This study will explain and analyze the subject matter with the help of well known or already established analytical methods and techniques. Therefore, as a conclusion oriented research, it doesn't concern with fundamental and decision oriented research. Considering the above matters, following are the limitations of the study:-

1. This study is only concerned with the NABIL, SCBNL and EBL and based on the annual reports.

2. This study only concerns with the risk and return position of NABIL, SCBNL and EBL.
3. This study is mainly based on published secondary data.
4. Information will be collected from the NABIL, SCBNL and EBL staff and booklets published by the corporation.
5. This study will cover the time period of five years.
6. The accuracy of this study depends upon the data available from the management of NABIL, SCBNL and EBL and other sources.

1.7 Organization of the Study

Simple research methodology will be followed and the study consists of four different components.

The first part consists of introduction, statement of the problems, and objective of the study, scope of the study and limitation of the study.

The second part consists of review of literature. Review of related material like thesis, browser booklets, journals, magazines etc will be done

The third part consists of research design, sample size, source of data, and method of analysis under research methodology.

The fourth part consists the collected data will be tabulated and analyzed by using various financial, mathematical and statistical tools under data presentation and analysis.

The fifth part consists of the summary conclusions and recommendations derived on the basis of study

CHAPTER - II

REVIEW OF LITERATURE

Review of Literature is the chapter where a researcher reviews the books, journals, magazines or any other studies related to his/her field of the study. Research is a continuous process, it never ends. The procedures and the findings may change but the research continues. So for analyzing the data and to find something new, a researcher must review and know if there are any studies ahead or not. The purpose of reviewing the literature is to develop some expertise in one's area, to see what new contributions can be made, and to receive some ideas for developing a research design. Thus, the previous studies cannot be ignored because they provide the foundation to the present study.

The main objective of this chapter is to present the basic concept on risk and return provided by different renowned writers through different books. Various independent studies, articles, journals are incorporated here in this chapter. Reviewing all these will definitely provide us background to research work, guidelines to deal with prospective problems requiring study and inspiration to search for solutions to research problems. Thus, topics from basic academic courses books and different studies published in magazines, thesis of seniors and journals related to the study are reviewed below.

2.1 Conceptual/Theoretical Framework

Analyzing risk and returns shows the relation or tradeoff between risk and return on any kind of investment. Investment, risk and return are the financial terms, which are heavily associated with each other. Investment simply means sacrificing current funds for future cash inflows. Here the future cash inflows are the "returns". The future is uncertain and uncertainty obviously points out "risk".

Risk and return are the most important concept in finance. In fact they are foundation of the modern finance theory.

2.1.1 Investment

In layman's senses, there is always a return if here is investment. This return may be favorable as well as unfavorable from the investor's point of view.

The term investment is conceptualized as income, savings or other collected fund. The term investment covers a wide range of activities. It is commonly fact that an investment is only possible where there are adequate savings. If all the incomes and savings are consumed to solve the problem of hand to mouth and to the other basic needs, then there is no existence of investment. Therefore, both saving and investment are interrelated.

A distinction is often made between investment and savings. Saving is defined as forgone consumption; investment is restricted to "real" investment of the sort that increases national output in the future.

Investment is concerned with the management of an investor's wealth, which are the sum of current income and the present value of all future income. Funds to be invested come from assets already owned borrowed money and savings or foregone consumption. By foregoing today and investing the savings, investors expert to enhance their future consumption possibilities i.e. they are invested to increase wealth. Investors also seek to manage their wealth effectively obtaining the most from it, while protecting it from inflation, taxes and factors.

- Economic investment – That is an economist's definition of investment,
- Investment in a more general or extended sense, which is used by "the man of street" and
- The sense in which we are going to be very much interested, namely financial investment.

The problem of investor is to select the funds whose objectives and degree of risk taking most closely match with the one's own situation that will accomplish for him what he would wish to do for himself if he could diversify and manage his own holdings. (William and Alexander 1995:1)

Investment is the use of money to earn income or profit. The term also refers to the expenditure of funds for capital goods such as factories, farm equipment livestock and machinery. Many people invest part of their income for future financial gain. Other makes investments to protect the purchasing power of their savings against rising prices. (William and Alexander 1995:2)

Investment promotes economic growth and contributes to a nation's wealth. When people deposit money in a saving account in a bank, the bank may invest by lending the funds of various business companies. These firms in return may invest the money in new factories and equipments to increase their production. In addition borrowing from the banks, most companies issue stocks and bonds that they sell to investors to

raise capital needed for business expansion. Government also issues bonds to obtain funds to invest in such projects as the construction of dams, roads and schools. All such investment by individuals, business and government involves a present sacrifice of income to get an expected future benefits. As a result, investment raises a nation's standard of living.

In general sense, investment means sacrificing current funds for future returns, bearing certain risk. Investment in broadest sense means the sacrifice of dollars for future dollars. Two different attributes are generally involved time and risk. The sacrifice takes place in present and is certain. The reward comes later, if at all and the magnitude is generally uncertain. In some cases the element of time predominates (for e.g. government bonds). In other cases risk is the dominant attribute (for e.g. call options on common stock). In yet others, both time and risk are important (for e.g., shares on common stocks). In the study, investment conceptualizes the use of income; saving on other collected fund. The term investment covers a wide range of activities. It is a commonly known fact that an investment is possible only when there is adequate savings. Therefore, both savings and investment are interrelated. (William and Alexander 1995:110)

2.1.2 Meaning of Risk

If there is only one outcome or event, it is a case of certainty. If there are more than single outcomes, it is a case of uncertainty. So, if there are more than a single outcomes with probability assigned, it is called risk in general sense. But in the sense of investment, the deviation or variance of the actual return from expected rate of return is termed as risk.

Risk is defined as the possibility of meeting danger or suffering harm or loss. Risk in terms of investment means unexpected and unwanted outcomes, which are harmful for the business. In investment there is a chance of suffering loss it is the risk. Risk can also be defined as the chance that some unfavorable event will occur.

Risk is defined in Webster's as a hazard a peril; exposure to loss or injury. Thus, risk refers to the chance that some unfavorable event will occur. If you engaged in sky diving, you are taking a chance with your life-sky diving is risky. If you bet on the horses, you are risking your money. If you invest in speculative stock (or really any stocks), you are taking a risk in the hope of making an appreciable return. The greater the chance of loss or negative returns, the riskier the investment (Weston & Brigham 1992:113)

"In the most basic sense, risk is the chance of financial loss. Assets having greater chances of loss are viewed as more risky than those with lesser chances of loss. More formally, the term risk is used interchangeably with uncertainty to refer to the variability of returns associated with a given assets." (Gitman 2001:160)

2.1.2.1 Types of Risk

The risk is the total risk that arises in the business. Any type of business, whether that may be of large or small scale suffers risk because investment is a part of economics and the economical cycle changes frequently. When the market is bullish there is low risk and when it starts declining i.e. bearish there may be high risk. So the total risk can be categorized into two broad categories on the basis of its causes. To put another way, depending upon whether the risk is diversifiable or not, we can partition the total risk into two components namely:

- Systematic Risk
- Unsystematic Risk

Systematic Risk:

Systematic risk is that portion of total risk which is caused due to external factors. Since the external factors are beyond the control of the particular firm, such risk can't be diversified away. For this reason, the systematic risk is rightly termed as "undiversifiable risk". For bearing (assuming) systematic risk, an investor demands an additional risk premium. Therefore, it is also termed as "reward able risk".

The impact of systematic risk is not specific to the firm only but it has the overall impact in the entire market. That's why systematic risk is also called as "market specific risk".

That security whose correlation coefficient of returns with market is perfectly positive (+1) has no unsystematic risk i.e. total risk is the systematic risk in such case.

Unsystematic Risk:

Unsystematic risk is that portion of the total risk which is caused due to the factors internal to the firm. So, it is diversifiable since the internal factors are under the control of a firm. Hence, unsystematic risk is often called "diversifiable risk".

Such risk is specific to a particular firm. Therefore, it is also called as "firm specific risk". No additional risk premium is required for bearing the unsystematic risk since it

is to be diversified away. So, unsystematic risk is sometime also known as “non-reward able risk”. (Hampton 1996:340-341)

2.1.2.2 Components of Risk

There are two components of risk. They are as follow:

a) Business Risk:-

This is defined as the chance that the firm will not have ability to compete successfully with the assets that it purchases. As an example, the firm may not acquire a machine that may not operate properly, that may not produce saleable products, or that may face other operating or market difficulties that cause losses. Any operational problems are classed as business risk.

b) Financial Risk:-

This is the chance that an investment will not generate sufficient cash flows either to cover interest payments on money borrowed to finance it or principal repayments on the debt or to provide profits to the firm. If the firm falls short of its return goal, it may be able to cover operating expenses but not the financing costs of the original investment. (Hampton 1996:345)

2.1.2.3 Sources of Risk

Every investment involves uncertainties that make future investment returns risky. The sources of uncertainty that contribute to investment risk are as follows:

Interest Rate Risk

Interest rate risk is defined as the potential variability of return caused by changes in the market interest rates. In more general terms, if market interest rates rise, then investments values and market prices will fall, and vice versa. The variability of return that results is interest rate risk. This interest rate risk affects the prices of bonds, stocks, real estate, gild, puts, calls, futures contracts, and other investments as well.

Purchasing Power Risk

Purchasing power risk is the variability of return an investor suffers because of inflation. Economists measure the rate of inflation by using a price index. The consumer price index (CPI) is a popular price index in the United States. The percentage change in the CPI is a widely followed measure of the rate of inflation.

Bull- Bear Risk/Market Risk

As its name suggests, bull-bear market risk arises from the variability in market returns resulting from alternating bull and bear market forces. When a security index

rises fairly consistently from a low point, called a trough, for a period of time, this upward trend is called a bull market. The bull market ends when the market index reaches a peak and starts a downward trend. The period during which the market declines to the next trough is called a bear market.

Management Risk

Though many top executives earn princely salaries, occupy luxurious offices, and wield enormous power within their organizations, they are mortal and capable of making a mistake or a poor decision. Furthermore, errors made by business managers can harm those who invested in their firms. Forecasting management errors is difficult work that may not be worth the effort and as a result, imparts a needlessly skeptical outlook. Agency theory provides investors with an opportunity to replace skepticism with informed insight as they endeavor to analyze subjective management risks.

Default Risk

Default risk is that portion of an investment's total risk that results from changes in the financial integrity of the investment. It is related to the probability that some or all of the initial investment will not be returned.

Liquidity Risk

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

Perfectly liquid assets are highly marketable and suffer no liquidation costs. Liquid assets are not readily marketable – either price discounts must be given or sales commission must be paid, or both of these costs must be incurred by the seller, in order to find a new investor for an illiquid asset. The more illiquid an asset is, the larger the price discounts and/or commissions which must be given up by the seller in order to effect a quick sale.

Call ability Risk

Some bonds and preferred stocks are issued with a provision that allows the issuer to call them in for repurchase. Issuers like the call provision because it allows them to buy back outstanding preferred stocks and/or bonds with the funds from the newer issue if market interest rates drop below the level being paid on the outstanding securities. But, whatever the issuing company gains by calling in an issue is gained at the expense of the investors who have their securities called. Investors should view the call provision as a threat that may deprive them of a good investment at a time when their funds can only be reinvested at a lower yield.

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

Convertibility Risk

Call ability and convertibility risks are similar in two respects. First, both are contractual stipulations that are included in terms of the original security issue. Second, both of these provisions alter the variability of return from the affected security. Convertibility risk is that portion of the total variability of return from a convertible bond or a convertible preferred stock that reflects the possibility that the investment may be converted into the issuer's common stock at a time or under terms harmful to the investor's best interests.

Political Risk

Political risk arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the effort of various groups to improve their relative positions increasing the variability of return from the affected assets. Regardless of whether the changes that political risk are sought by political or by economic interests, the resulting variability of return is called political risk if it is accomplished through legislative, judicial, or administrative branches of the government.

Industry Risk

An industry may be viewed as a group of companies that compete with each other to market a homogeneous product. Industry risk is that portion of an investment' total variability of return caused by events that affect the products and firms that make up an industry. The stage of the industry's life cycle, international tariffs and / or quotas on the products produced by an industry, product or industry- related taxes, industry wide labour union problems, environmental restrictions, raw material availability, and similar factors interact and affect all the firms in an industry simultaneously. As a result of these commonalities, the prices of the securities issued by competing firms tend to rise and fall together.

2.1.2.4 Methods for Risk Analysis

There are many ways to measure risk. Three models commonly used are:

Beta Coefficient

This is a mathematical value that measure the risk of one asset in terms of its effects on the risk of a group of assets called a portfolio. It is concerned solely with market-related risk, as would be the concern for an investor holding stocks and bonds. It is

derived mathematically so that a high beta indicates a high level of risk, whereas a low beta represents a low level of risk. Mathematically, "β" denotes it.

Standard Deviation

This is a measurement of the dispersion of forecast returns when such returns approximate a normal probability distribution. It is a statistical concept and is widely used to measure risk from holding a single asset. The standard deviation is derived so that a high standard deviation represents a large dispersion of return and is a high risk. On the other hand, a low standard deviation is a small dispersion and represents low. Mathematically, it is denoted by σ.

Coefficient of Variation (C.V)

The coefficient of variation is the most commonly used measure of relative variation. It is used in such problems where the researcher wants to compare the variability of more than two years. Greater the C.V, the variable or conversely less consistent, less uniform, more consistent, more uniform, more stable and homogeneous.

Subjective Estimates

A subjective risk measure occurs when qualitative rather than quantitative estimates are used to measure dispersion. As an example: an analyst may estimate that a proposal offers a "low" level of risk. This means that, in the analyst's view – the dispersion of return will not be very wide. Similarly, a "high" risk level will accompany a project whose forecast return may vary a great deal. (Hampton 1996:340)

2.1.3 Meaning of Return

Return is simply increase or decrease value of investment over the time period. If the value of investment increases, it is the positive return called gain. If the value of investment decreases, it is the negative return called loss. It is the main target of investment.

"Return is the motivating force in the investment process, that is, it is the reward for undertaking the investment. Return on a typical investment consists of two components. The first component that usually comes to mind is the periodic cash receipts (either interest or dividends). This cash receipt is known as an ordinary gain on investment. The second component is the appreciation (or depreciation) in the price of the asset and this is commonly called a capital gain or loss. The capital gain or loss is the difference between the purchase price and the price at which the asset can be or

is sold. Therefore, the total return on investment is the sum of ordinary gain and the capital gain or loss. Mathematically,

Total return = Capital gain + Cash Receipts (Dividend)

Capital gain/ loss = Ending value of asset – Beginning value of asset.

Return can be expressed in two ways: Rupees return and percentages return. Normally a return denotes the percentage return.

Return (in Rupees) = Capital gain (loss) + Ordinary gain

= (Ending value of assets – Beginning value of assets) + Cash receipt

Using notation,

Return (R_t) = $P_{t+1} - P_t + C_t$

Return (in %) = Capital gain (loss) yield + Cash Receipts (Dividend)

$$= \frac{\text{Ending value of asset–Beginning value of asset+Cash receipt}}{\text{Beginning value of asset}}$$

Using notation,

$$\text{Return } (R_t) = \frac{P_{t+1} - P_t + C_t}{P_t} \times 100$$

Where,

P_{t+1} = value of asset at time t+1 or ending value,

P_t = value of asset at time t or beginning value,

C_t = cash receipt at time t or dividend or interest received.

(Brigham and Houston 2004:166)

2.1.3.1 Measurement of Return

Holding period return

If an investor buys a security and holds for certain time period, the rate of return from this security is termed as holding period return (HPR) for that period. An investor can get return in two ways: one is increase in the value of that stock as compared to the initial one. Another is the direct cash payment. The increase in the value of stock is called capital gain and direct cash payment is called dividend gain. So HPR has two components:

i. Dividend Yield = $\frac{D_t}{P_{t-1}}$

ii. Capital Gain Yield = $\frac{P_t - P_{t-1}}{P_{t-1}}$

The return from holding an investment over some period is simply a cash payment received due to ownership, plus the change in market price derived by the beginning price. For common stock, we can define one period return as:

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

Where,

R_t = the actual return when it refers to a particular time period in the past (future)

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

P_t = stock price at the end of time period t

P_{t-1} = stock price at the end of time period t-1

Note that this formula can be used to determine both actual one period returns (when based on historical figures) as well as expected one period returns (when based on expected dividends and prices).

Above expiation is based on the ex-post (historical) data to predict the future result. The return can also be defined on the probability distribution.

In financial market, many outcomes are possible. The dominant influence on financial events is the general state of the economy. For illustration regarding the annual reports of business, we will often find statements such as: the general state of the economy was depressed last years, causing our company's earning to decline.

The relationship between the expected future state of the economy and the performance of individual firms enables a relationship to be set forth between the state of the economy and the returns from investments in the firms. The relationship between different levels of returns and their relative frequency is called probability distribution. We could formulate a probability distribution for the relative frequency of a firm's annual returns by analyzing its historical returns over previous years. But we know that history never repeats itself exactly. Hence, after analyzing relative frequencies of historical returns for individual company we can form a probability distribution based on historical data plus our analysis for the economy, the outlook for the firm in its industry and any other factors we deem relevant as inputs for our judgment.

But this study has a limitation that it can't analyze the overall economy due to many constraints. The mean of historical returns is used for this measure. (Weston & Brigham, 1992:93-94)

Multi Period Return and Annualized Return

A multi period return is the return earned during the multi periods of holding the securities. For e.g., if securities are held for three years and one year is taken as one period, then we are holding the securities for three periods and this is known as multi-period investment. To express the multi period returns as annual return we convert the returns on an annualized basis. Such an annualized return is the mean return and there are two types of mean returns.

I. Arithmetic Mean: - Arithmetic mean is the most familiar statistical measure to any investor or individual. Therefore, the word mean will refer to the arithmetic mean unless otherwise specified. This mean is calculated by dividing the total return of multiple periods by the number of observations or returns. The mean return in equation is as follows:

$$\overline{R} = \frac{\sum_{t=1}^{n} R_t}{n} = \frac{R_1+R_2+....+R_n}{n}$$

Where,

$\overline{R}$ = arithmetic mean return,

R_t = single period return at time t,

n = number of observations or returns.

II. Geometric Mean: - It is another method of calculating the annualized return. Geometric mean return is calculated by taking the nth root of the product of one plus individual rates of return minus one. In equation,

$$G_m = \left[\prod_{t=1}^{n} (1+R_t)\right]^{\frac{1}{n}} - 1 = [(1+R_1)(1+R_2)(1+R_3).....(1+R_n)]^{\frac{1}{n}} - 1$$

Where,

G_m = geometric mean return,

R_t = single period return at time t,

n = number of observations or returns,

$\prod$ = product of……

(Cheney & Moses, 1996 : 31)

Arithmetic Mean versus Geometric Mean

Two mean returns can be calculated to express our multi-period returns as annualized returns, but which mean should be used to measure the performance of the investment over multi period? The answer depends on the investor's objective.

- The arithmetic mean return is appropriate as a measure of the central tendency of a distribution of return for particular periods.
- The arithmetic mean return in case of a percentage change in value over a time period can be a misleading one.
- Geometric mean return can express the true average rate of return over a multi-period and can show accurately the change in the investment value.
- Due to the inherent bias in the arithmetic mean, the geometric mean will always be equal to or less than the arithmetic mean.
- The geometric mean and arithmetic mean will only be equal when the holding period returns are constant over the investment period.

Required Rate of Return

Required rate of return is the minimum return that an investor expects at least not to suffer from loss. If any investor gets below the required rate he/she will definitely suffer from loss.

While suffering from loss of return an investor must consider the real rate of return, expected inflation and risk. Because consumption is forgone today, the investor is entitled to a rate of return that compensates for this deferred consumption. Since the investor expects to receive an increase in that real goods purchased later and assuming for the moment zero expected inflation and risk, the required rate could equal the real rate of return, in which case it would represent the time value of money.

For example, if an investor plans to lend $500 today in exchange for consumption at some later date (assuming no inflation and risk), then the lender may expect to receive $515 at the expected time of consumption. The $15 return on investment of $500 or 3 percent represents the pure time value of money. The real return paid to compensate the investors deferred consumption.

The required rate of return for an asset or portfolio of assets can be estimated using the equation for the SML suggested by the CAPM model.

According to CAPM,

Required rate of return from security 'i', $\overline{R}_i$

$\overline{R}_i$ = R_f + Additional risk premium

= R_f + Market risk premium × β_i

= $R_f + \bullet \overline{R}_m - R_f' \times \beta_i$

Where,

R_f = Risk-free rate (Yield on government security)

$\overline{R}_m$ = Rate of return in the market portfolio

β_i = Beta coefficient of 'i' security (systematic risk coefficient of 'i' security)

According to this model, higher the beta coefficient of any security, higher will be the systematic risk and in turn, higher will be the required rate of return and vice-versa. (Cheney & Moses, 1996 : 33)

Expected Rate of Return:

Investment decisions are based on expectations about the future. The expected rate of return for any asset 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 products of the rates of return and their respective probabilities.

$$\overline{R} = \sum_{t=1}^{T} P_t R_t$$

The subscripts in the formula for the expected return are event counters that are appended to each possible rate of return and the probability (denoted P) for that event. T different events are perceived as possibilities.

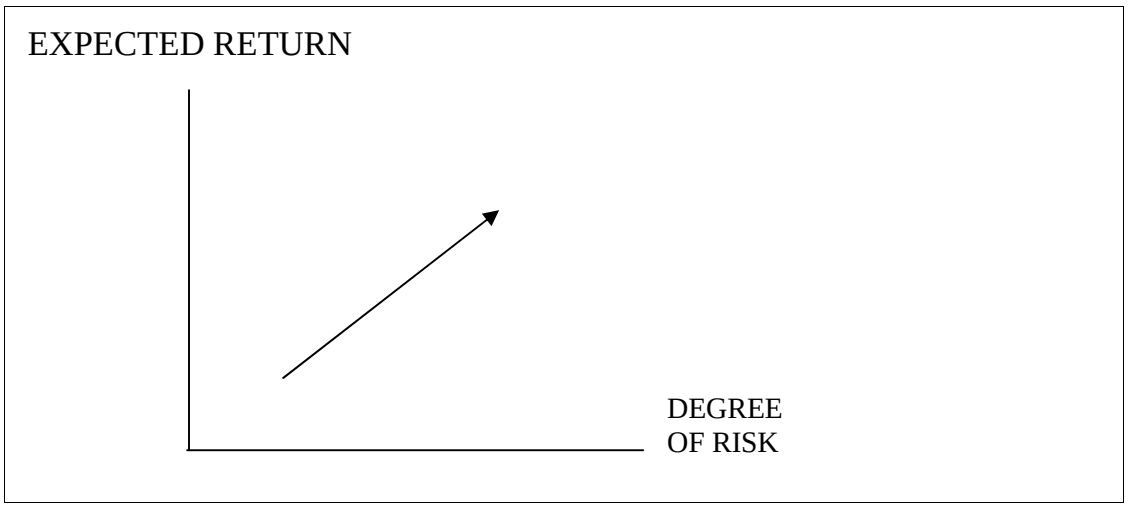
If an investment is to be made, the expected rate of return or the expected holding period return should be equal or greater than the required rate of return for that investment. The expected rate of return is based upon the expected cash receipts (e.g. Dividend or interest) over the holding period and the expected ending or selling price. The expected rate of return is an ex-ante or unknown future return. Unless the real rate of return is guaranteed, most investor recognizes this possible rate of return into a single number called the expected rate of return.

The expected rate of return or holding period rate of return is based upon the expected cash receipts over the holding period and the expected ending or selling price. Depending upon the assumption made about cash receipts and ending price, a number of expected rates of returns are possible. These possible rates of returns estimated by the investors are summarized in an expected rate of return. The expected rate of return must be greater or equal to the rate of return for the investor to find the investment acceptable. (Alexander, Sharpe & Bailey, 1997:11-12)

2.1.4 Risk and Return Relationship

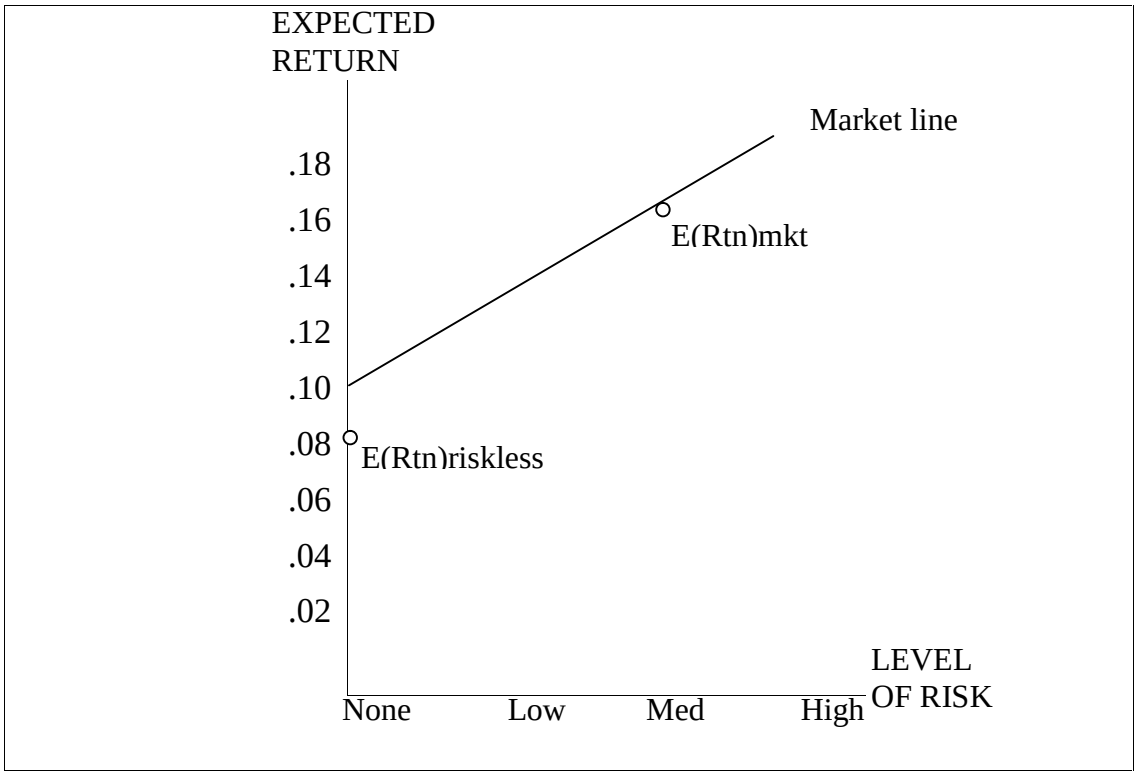
The expected return from any investment proposal will be linked in a fundamental relationship to the degree of risk in the proposal. In order to be acceptable, a higher-risk proposal must offer a higher forecast return than a lower-risk proposal. This relationship is shown in figure below:

Graph 2.1
General Pattern of Risk and Return



A market line may be defined as the general pattern of risk and return in an investing market. Such a line is shown in figure below. With respect to this diagram, we might note some characteristics of the line, namely:

Graph 2.2
The Market Line



(Brigham and Houston 2004:199)

1. Upward Sloping*:* The line slopes upward from the left axis of the diagram. This reflects the general pattern of more risk, more return.

2. Risk on X Axis*:* The horizontal, or x axis takes the independent variable. The vertical or y axis takes the dependent variable. From this diagram, we can see that the rate of return is dependent upon the degree of risk in a proposal. Thus, risk is an independent variable: return, a dependent variable.

3. Riskless Rate of Return*:* Note that the market line touches the y axis at percent. This is identified as the riskless rate of return and is the return on government securities. If such securities are held to maturity, it is widely felt that they offer no risk of default on either principal or interest. Thus, the investor can achieve a return at a zero risk level. For a rational company, this is the minimum acceptable return for any investment.

4. Market Portfolio*:* This is defined as a group of assets weighted at the same dollar value as all assets in the market. It is the average return, if you will, on all the assets traded in the market. The market rate of return is the expected return on the market portfolio. For example: suppose the New York Stock Exchange securities in total experienced an 11 percent annual return last year. An investor holding a portfolio with 2 percent of every stock on the exchange would also receive an 11 percent return.

2.1.5 Portfolio Theory: Best way of investment for rational investors

Normally almost all the investors are risk averse. They need high or satisfactory level of return bearing risk as low as possible. Portfolio theory gives the concept of investment in a very good way that "Never keeps all the eggs in a single basket" which means never invest your entire amount in a single asset.

Investors rarely place their entire wealth into a single asset or investment. Rather they construct a portfolio or group of investment. Portfolio is a combination of different securities so as to eliminate risk subject to certain constraints. The objectives of portfolio analysis is to develop a portfolio that has the maximum return at whatever level of risk the investors deem to appropriate.

In 1952, Harry M. Markowitz proposed the concept of the portfolio theory. He gave a very new concept of investment on more than single assets to minimize risk and maximize return.

The portfolio theory developed by Markowitz is based on following assumptions:

© The expected return from an asset is the mean value of a probability distribution of future returns over some holding period.

© The risk of an individual asset or portfolio is based on the variability of assets (i.e. standard deviation or variance).

© Investors adhere to the dominance principal i.e. for given level of risk investors, prefer asset with a higher expected return to asset with a lower expected return. For asset with the same return, investors prefer lower to higher risk.

Investment on more than one security means diversification or minimizing risk. There are so many diversification techniques like simple diversification, diversification across industries, superfluous diversification, simple diversification across quality rating category and Markowitz diversification. Here, we are mostly concerned on Markowitz diversification.

"Markowitz diversification may be defined as combining assets which are less than perfectly correlated in order to reduce portfolio risk without sacrificing portfolio returns. It can sometimes reduce risk below the undiversifiable level. Markowitz diversification is more analytical than simple diversification and considers assets' correlations (or covariance). The lower the correlation between assets, the more that Markowitz diversification will be able to reduce the portfolio's risk." (Alexander, Sharpe & Bailey, 1995: 234)

Therefore, to be clear about portfolio analysis and selection, we must first be clear about portfolio risk and return – its role and measurement.

Portfolio Return

The expected rate of return on portfolio is simply a weighted average of the expected returns of the securities comprising that portfolio. The weights are equal to the portion at total funds invested in each security and the weights must sum to 100 percent. The general formula for expected return of a portfolio, Rp is as follows:-

$$\overline{R}_p = \sum_{j=1}^{n} W_j \overline{R}_j$$

Where,

W_j = Proportion or Weight of total funds invested in security j,

R_j = Expected return for security j,

n = Total no. of different securities in the portfolio.

As the mean (expected return on portfolio) and variance (or standard deviation) is the foundation of the portfolio decision now let's turns to the risk of portfolio and its measurement. (Brigham and Houston 2004:182)

Portfolio Risk

While the expected return of a portfolio is simply a weighted average of the expected returns on the individual stocks in the portfolio, the riskiness of a portfolio (σp) is generally not a weighted average of the standard deviation of the individual securities. To take a weighted average of individual security standard deviations would be to ignore the relationship, or correlation between the returns of the two securities. This correlation, however, does not effect on the portfolio's expected return. Correlation between security returns complicated the calculation of portfolio standard deviation by forcing to calculate the covariance between returns for every possible pair wise combination of securities in the portfolio. But this dark cloud of mathematical complication contains a silver living correlation between securities provide the possibility of elimination of some risk without reducing potential return.

The expected risk on a portfolio is a function of the proportions invested in the components, the riskiness of the components and correlation of returns on the component securities. (Thapa, 2003: 427)

The standard deviation of a probability distribution of possible portfolio returns, ∃p, is

$$\exists_P = \sqrt{\sum_{j=1}^{m}\sum_{k=1}^{m} W_j W_k \exists_{jk})}$$

Where, m = Total no. of different securities in the portfolio

W_j = Proportion of total funds invested in security j

W_k = Proportion of total funds invested in security k

$\exists_p$ = Covariance between possible returns for securities j and k.

(Brigham and Houston 2004:183)

Covariance of Returns

The covariance of the possible returns of two securities is a measure of the extent to which they are expected to vary together rather than independently of each other. More formally, the covariance term in equation is

$$Cov_{jk} = r_{jk} \exists_j \exists_k$$

On the other, correlation between the assets can be measured by rearranging the same equation as follow:

$$r_{jk} = \frac{Cov_{jk}}{\exists_j \exists_k}$$

The covariance measures how two variables co-vary. If two assets are positively correlated, there covariance will also be positive. For example, most common stocks have a positive covariance with each other. If two variables are independent, their covariance is zero. If two variables vary inversely, their covariance is negative. (Alexander, Sharpe & Bailey, 1995: 237)

The degree of correlation between returns of stocks is the most influencing factor on portfolio construction and its benefit.

The correlation coefficient always lies between +1.0 and -1.0. Return of securities vary perfectly together when the correlation is +1.0 (or perfectly positive) and in perfectly opposite when it is -1.0 (or, perfectly negative). A zero correlation coefficient implies that there is no relation between the returns of securities. In practice, the correlation coefficient of returns may vary between +1.0 and -1.0.How the portfolio variance is affected by the correlation coefficient is described below:

- When the returns of two securities are perfectly negatively correlated, the portfolio variance will be zero. The combination of these securities completely reduces risk.
- When the returns of two securities are perfectly positively correlated, the portfolio variance will be just equal to the variance of individual securities and thus, combination of these securities is as risky as the individual security.

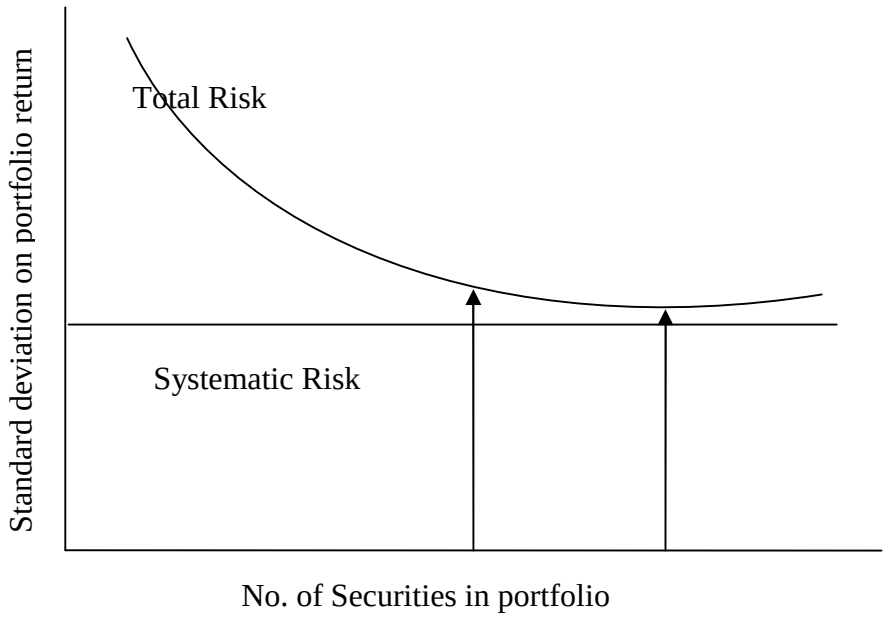
- When the returns of two securities are weakly positively correlated, the portfolio variance will be less than the variance of individual security.
- When the returns of two securities are weakly negatively correlated, the portfolio variance will be less than that of weakly positively correlated returns of securities. (Pandey, 2001:336)

From the above we came to know that "in one extreme case (r = -1.0), risk can be completely eliminated; while "in other extreme case (r = +1.0), diversification is not good, whatever in between these extremes, combining two stocks into a portfolio reduces but not eliminates the riskiness inherent in the individual assets.

Meaningful diversification involves combining securities in a way that will reduce risk. Risk reduction occurs as long as the securities combined are not perfectly positively correlated

Systematic and unsystematic risks are the terms frequently used in portfolio context. "Combining securities that are not perfectly positively correlated helps to lessen the risk of a portfolio to some extent. How much risk reduction is reasonable to expect, and how many different security holdings in a portfolio would be required? The figure helps to provide answer.

Graph 2.3
Total Systematic and Unsystematic Risk



(Van Horne and wachowitz1995:91)

In case of single stock, the risk of a portfolio is the standard deviation of that stock. As the randomly selected stocks held in the portfolio are increased, the total risk of the portfolio is reduced at a decreasing rate. Thus, a substantial proportion of the portfolio risk can be eliminated with a relatively moderate amount of diversification.

Total Risk = Systematic Risk + Unsystematic Risk

The first part, systematic risk, is due to risk factors that affect the overall market such as changes in nation's economy, tax reform by the government, or a change in the world energy situation. These are risks that affect securities overall, and, consequently cannot be diversified away. In other words, even an investor who holds a well-diversified portfolio will be exposed to this type of risk.

The second risk component, unsystematic risk, is risk due to unique to a particular company or industry; it is independent of economic, political and other factors that affect all securities in a systematic manner. A wildcat strike may affect only one company; a new competitor may begin to produce essentially the same product; or a technological breakthrough can make an existing product obsolete. For most stocks, unsystematic risk accounts for between 60 to 70 percent of the stock's total risk or standard deviation. However, by diversification this kind of risk can be reduced and even eliminated if diversification is efficient. Therefore, not all of the risk involved in holding a stock is relevant since part of this risk can be diversified away. The important risk of a stock is its unavoidable or systematic risk. Investors can expect to be compensated for bearing this systematic risk. They should not, however, expect the market to provide any extra compensation for bearing avoidable risk. It is the logic that lies behind the capital asset pricing model (CAPM)." (Horne & Wachowich, 1995: 98-99)

2.1.6 The Capital Asset Pricing Model (CAPM)

Based on the behavior of risk-averse investors, there is an implied equilibrium relationship between risk and expected return for each security. In market equilibrium, a security is supposed to provide an expected return commensurate with its systematic risk – the risk that cannot be avoided by diversification. The greater the systematic risk of a security, the greater the return that investors will expect from the security. The relationship between expected return and systematic risk, and the valuation of securities that follows, is the essence of capital asset pricing model (CAPM). This model was developed by William F. Sharpe (1990 Nobel Prize winner in economics) and John Lintner in the 1960s, and it has had important implications for finance ever since. While other models also attempt to capture market behavior, the CAPM is simple in concept and has real-world applicability.

With this method, the investor needs to estimate the expected returns and variances, for all securities need to be estimated and the risk-free rate needs to be determined. Once this is done, the investor can identify the composition of the tendency portfolio

as well as its expected return and standard deviation. At this juncture the investor can proceed to identify the optimal portfolio by noting where one of his/her indifference curves touch but do not intersect the efficient set. This portfolio involves an investment in the tendency portfolio along with a certain amount of either risk-free borrowing or lending because the efficient set is liner. (Alexander, Sharpe & Bailey, 1999: 261)

Such an approach to investing can be viewed as an exercise in normative economics, where investors are told what they should do. Thus, this approach is prescriptive in nature. This model gives the intellectual basis for a number of the current practices in the investment industry.

As with any model, there are assumptions to be made, some assumptions relating to the CAPM are as follow:

- Investors evaluate portfolio by looking at the expected returns and standard deviation of the portfolio over one period horizon.
- Investors are never satisfied, so when given a choice between two other wise identical portfolios, they will choose the one with the lower standard deviation.
- Individual assets are infinitely divisible, meaning that an investor can buy a fraction of a share if he/she so desires.
- There is a risk-free rate at which an investor may either lend i.e. invest money or borrow money.
- Taxes and transaction costs are irrelevant.
- All investors have the same one-period horizon.
- The risk-free rate is the same for all investors.
- Information is freely and instantly available to all investors.
- Investors have homogeneous expectations, meaning that they have the same perceptions in regard to the expected returns, standard deviations and covariance of securities.

Thus, CAPM is a model that describes the relationship and required return. In this model, a security's expected return is the risk-free rate plus a premium based on the systematic risk of the security. Mathematically,

$$\overline{R}_j = R_f + (\overline{R}_m - R_f)\beta_j$$

Where,

E (Rj) = the expected return for an asset

Rf = Risk-free rate

E(Rm) = The expected market return &

β_j = Beta of asset

Here, beta is the index of systematic risk. It measures the sensitivity of a stock's return to change in returns on the market portfolio. The beta of portfolio is simply a weighted average of the individual stock betas in the portfolio. (Horne & Wachowich, 1997: 100)

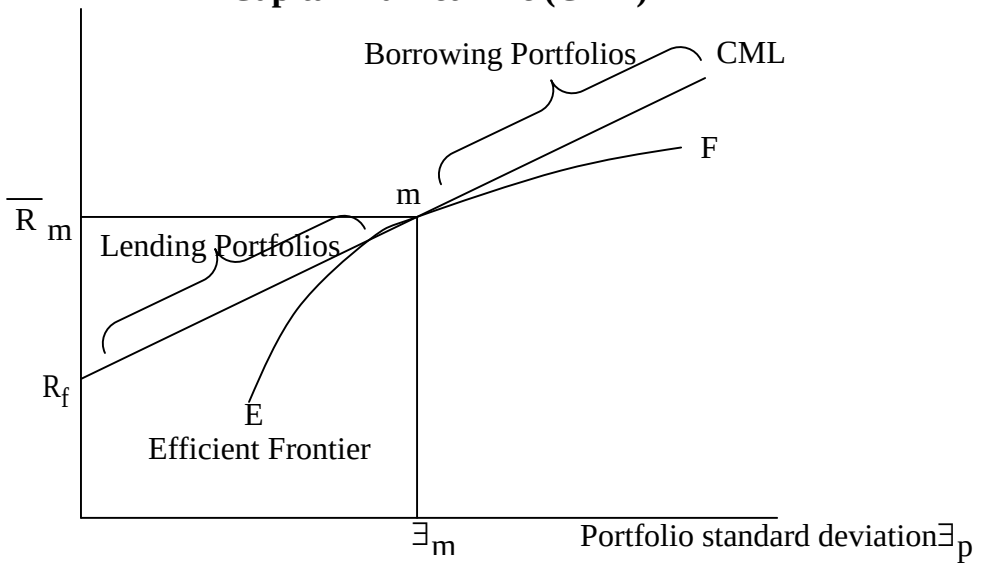
The CAPM model uses the theory of security market line (SML) to show the relationship between required return and beta.

The SML equation shows the relationship between securities risk and rates of returns. The return required for any security j is equal to the risk-free rate plus market risk premium times the securities beta.

Capital Market Line (CML)

When we introduce a risk free asset into Markowitz portfolio analysis, given the above assumptions, the efficient frontier is change from a curve to a straight line. This new efficient frontier is called a Capital market line (CML) and shown in the figure below.

Graph 2.4
Capital Market Line (CML)



(Cheney & Moses, 1999:62)

The CML starts with the risk-free asset Rf and is tangent to the risky portfolio m on the Markowitz efficient frontier. Portfolio m is the only risky portfolio. To the left of m, investors on the CML will hold both the risk-free asset and the risky portfolio. Since these investors are holding part of their investment in Rf, they are lending at the rate of Rf. All portfolios on the line between Rf and m represent lending portfolios. To the right of m, investors are borrowing at Rf and investing more in m they are utilizing

leverage. Portfolio m is called the market portfolio and contains all assets. All portfolios on the line between m and L represent borrowing portfolio.

The expected return on a CML portfolio composed of R and m is:

$$\text{Portfolio return, } \overline{R}_p = W_{R_f} \mid R_f + W_m \mid \overline{R}_m$$

$$\text{Or since } W_{R_f} + W_m = 1 \text{ and } W_m = 1 - W_{R_f}$$

$$\overline{R}_p = W_{R_f} \mid R_f + (1 - W_{R_f}) \mid \overline{R}_m$$

Where W_{R_f} is the proportion of an investor's wealth invested in R_f and $\overline{R}_m$ is the expected return on the market portfolio.

The risk of the CML portfolio is

$$\sigma P = \sqrt{W_{R_f}^2 \sigma_{R_f}^2 + (1 - w_{R_f}^2) + 2W_{R_f}(1 - W_{R_f}) \rho_{RmRf} \sigma_{R_f} \sigma_m}$$

However, since σRf = 0, then ρRm =0, and the risk formula collapses to the following linear form:

$$\ldots \quad \sigma p = (1 - WRf)\, \sigma m = Wm * \sigma m$$

Where σp is the standard deviation of the portfolio's returns and σm is the standard deviation of the market portfolio's returns. (Cheney & Moses, 1999:63)

The Efficient Set

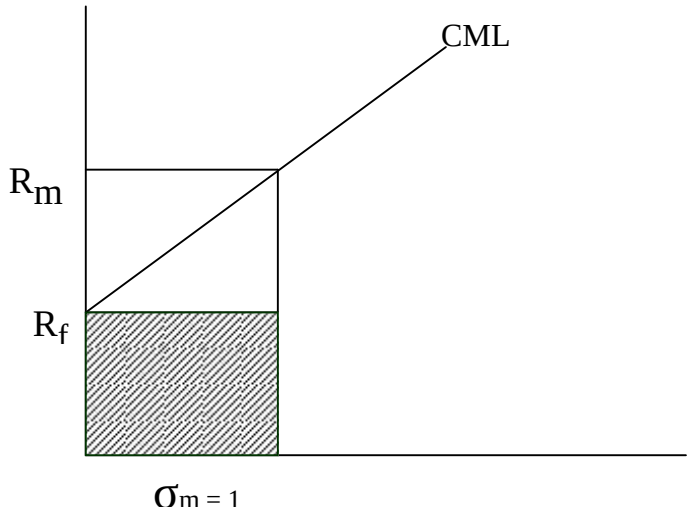
The efficient set is the combination of all portfolios called attainable set of investment opportunities. It is the locus point of investment graphed in risk return space which has the maximum expected rate of return in their risk class or the minimum risk at whatever rate of return is selected. An investor can gain highest level of return at any given level of risk. According to Markowitz, an investor should seek a portfolio of securities that lies on the efficient set.

A portfolio is not efficient if there is another portfolio with a higher expected return and a lower standard deviation, a higher expected return and the same standard deviation, at the same expected return but a lower standard deviation. If your portfolio is not efficient, you can increase the expected return without increasing the risk, decrease the risk without decreasing expected return or obtain some combination of increased expected return and decreased risk by switching to a portfolio on the efficient frontier.

The following figure portrays the efficient set graphically:

Graph 2.5

Efficient Set



(Weston, Besley & Brigham, 1996:63)

Point Rm represents the market portfolio and Rf represents the risk-free rate of return. Efficient portfolios plot along the line starting at Rf and going through m and consist of alternative combination of risk return.

The linear efficient set of CAMP is known as CML. The entire portfolio other than those employing the market portfolio and risk free lending or borrowing would lie below the CML.

2.2 Review from Different Studies

This topic is again sub-divided into the review from thesis, review from journals and review from other studies. The studies related to the topic are reviewed here.

2.2.1 Review from Journals

Here, it is necessary to address current academic workings contributed toward the field of this study. Here in this section, articles from various national and international journals are reviewed and the attempt is concentrated to grab current picture of subject matter which ultimately helps for the success of the study.

Thapa Chandra, (2004) at his article *Managing Banking Risks,* identified various risk factors particularly in banking areas and various risk factors may equally be relevant for manufacturing sectors too.

---- Bank's primary function is to trade risk. Risk cannot be avoided by the banks but can only be managed. Now the question is what type of risk exist in banking system

and how these are managed. Following are some of primary risks which the banking industry faces and must be point of interest not only to bankers and regulators but most importantly to the depositors as well so that they can map the capacity of their bank and safeguard their hard earned money.

- **Interest Rate Risk: -** This is one of the most common risks the banks face owing to the volatility of the interest in market. In Nepal, just a decade ago, the interest rate in saving and time deposits were at the height of around 8% and 12% respectively, but today they have pathetically gone down with an average of 4% and 6% respectively due to dwindling economic scenario. Similar volatility has also been observed in case of lending interest rate as well. The spread of interest between tending and deposits is what the bank earns but with above stated volatility there is great uncertainty.
- **Trading/Market Risk: -** Excess liquidity (cash flows) is invested on various government and corporate securities, in foreign currencies and in other assets, for instance swaps, option etc. owing to the market uncertainty the value of these assets may also decline. Hence, managing such investments need experts who can predict the future return of these assets and invest the excess return smartly.
- **Credit Risk: -** Credit risks are of two types. The first is the diversifiable risk or the firm specific risk which can be mitigated by maintaining an optimum and
- **Off Balance Sheet Risk :-** Banks often create contingent liabilities and they are not shown in the balance sheets. Some of the examples of such off-balance sheet items are as guarantor in case of default by the principal of borrower in loan commitments (issuance of guarantee) of risk of incurring loss in forward contract due to change in price of the purchasing/selling of assets, swaps, options, commitments made in letter of credit, etc. Such risks are managed by a prudent analysis of the bank officials materializing such contingent contracts.

- **Technology/Operational Risks :-** Due to the modern technology and operational efficiency, modern commercial banks are among the best in terms of services, profitability and image as well. This is very small example where the government owned banks have failed, as compared to the technological up gradation of other commercial banks.
- **Liquidity Risk :-** It is a matter of great concern for the banks to maintain sufficient liquidity in the form of hard cash or marketable securities which can be converted into liquidity risk. The central bank has initiated various

regulatory frameworks to maintain reserve in their vault and certain specific percentage of the total deposit with central bank.

Risk management of the banks is not only crucial for optimum tradeoff between risk and profitability but is also one of the deciding factors for overall business investment leading the growth of the economy. Managing such risks not only needs sheer professionalism at organizational level but an appropriate environment also needs to be developed. Some of the major environmental problems of Nepalese banking sectors is unique government intervention (in the state owned banks), relatively weak regulatory framework, although significant improvement has been made in the last five years but still not competitive enough. When we consider the international standard, meager corporate governance and the biggest of all is lack of professionalism (especially commitment). The only solution to mitigate the banking risk is to develop the badly needed commitment, eradication of disbursement of leading, and to formulate prudent and conducive regulatory frame-work.

Leading American journal (journal of finance) has thrown enough light on risk and return subject. So, it is thought to be relevant to review an article from the same.

Robert G. Bowman, (1997) at his article **"***The Theoretical Relationship Between Systematic Risk and Financial Variables"* on journal of finance has presented theoretical relationship between systematic risk and various financial variables.

Robert utilized the assumption of CAMP and additional assumption that corporation can borrow and lend at risk-free rate. He has presented various formulas to present theoretical relationship of systematic risk, the firm's leverage, accounting beta, earning variability, dividend payout and growth. Shortly his findings are as follow:-

- The result shows that the systematic risk of levered firm (β_d) is equal to the systematic risk of unleveled firm (β_u) adjusted for the difference in equity value of two firms. He worked out that $\beta_d = (1+ Dl/Sl)\ \beta_u$ and concluded that the systematic risk of levered firm is equal to the systematic risk of the same firm without leverage time one plus leverage ratio (Debt to Equity)
- The market based measure of systematic risk is directly related to the accounting beta.
- Using different approaches and assumptions, it represents the relationship between earning variability and market risk in number of additional ways. The original point, however, remains same. There is no direct relationship between earning variability and market risk.
- On a strictly priory basis, it is obvious that even we are to admit to dividend in a valuation mode, there is no theoretical basis for relationship of dividend of

payout to beta. The assumptions we are using which seem must in accordance with current corporate and capital market theory, establish no theoretical relationship between dividends in any form and systematic risk.

- Size and growth of the firm has also no any theoretical relationship to market risk.

The purpose of this paper was to provide a theoretical basis for empirical research into the relationship between risk and financial (accounting) variables. We have shown there is relationship between systematic risk and the firm's leverage and accounting beta. We also demonstrated that systematic risk is not a function of earning variability, growth and size or dividend policy. The assumptions employed provide a very general model. It is not surprising that the results are succinct. Additional relationship between systematic risk and other variables may be obtained by imposing more stringent assumptions.

We have utilized the assumptions of CAMP and the additional assumption that corporation can borrow and lend at risk free rate of interest. Many of these assumptions are obviously violated in the real world (e.g. homogeneous expectation). However, as Fama pointed out, the assumptions of CAMP are sufficient but may not be necessary. The violation of which are observed do not necessarily negate the theory.

Finally, the distinctions between a theoretical model and the results of an empirical test of the model must be kept in mind. For example, empirical tests have generally shown as association between systematic risk and dividend payout ratio. Such result may only indicate that variable being tested is a surrogate. For another variable (e.g. accounting beta) or that causality may be operating in the opposite direction from that being hypothesized.

2.2.2 Review from Other Studies

Various independent studies by finance experts are necessary to discuss not only because these studies give us various knowledge regarding security market and status of shareholders but also because we can hypothesize relationship among various financial variables, and can gain vivid picture of Nepalese capital market which ultimately helps us to search solutions to the research problems and questions with which we have encountered.

Firstly, a study conducted by Prof. Dr. Monohar Krishna Shrestha (1998) is taken into account. Dr. Shrestha carried out a study in a topic of *"Shareholders Democracy and Annual General Meeting Feedback"*. "This study critically analyzed the situation of common stock investors and the situation has not improved till now. Though the size

of the shareholders population in Nepal has been growing constantly, the government seems to have not taken any initiative in formulating the separate act which protects the shareholders' rights."

Thus, the need of separate act regarding the protection of shareholders' right is questioned.

"Company and other acts relating to financial and industrial sector have provisioned rights of the shareholders as:

- Voting right
- Participation in general meeting
- Right of getting information
- Electing as a board of director
- Participation in the profit and loss of the company
- Transferring shares
- Proxy representation.

The collective rights of the shareholders are:-

- Amend the internal by laws
- Authorize the sales of assets
- Enter into mergers
- Change amount of authorize capital.

Some public limited companies have floated the shares to the general public without having shareholders representation in the board. There are many such companies which conduct the annual general meetings just to fulfill their desire and do not consider the voice of the majority of the shareholders. Similarly, management involvement and government intervention in the board election have brought a greater setback in the voting rights of the shareholders."

Shrestha argued further to safeguard investors' interest. "The encouraging and growing confidence of shareholders over their investment seeks an independent inquiry of disclosed contents of prospectus. This helps to satisfy minimum standard of faith on investment in shares through relying on pros and cons on prospectus. It is therefore, important to disclose everything in prospectus, which could reasonably influence the mind of the prudent investors. Various annual general meeting held by different public limited companies reveal a greater gap between disclosures made in

prospectus and the actual result which were reported. In this context the expression of disclosure philosophy and investigation of frauds in prospectus need to be reconciles to check the growing problems in development of the capital market in Nepal."

Nawaraj Pokharel (2000) in his article published in the Business Age, entitled *"Stock Market Doing Pretty Well"*.

"The investment made in the shares of Himalayan Bank Ltd. in October last year, before Dashin has fetched twice as much in returns now. If I had invested the same capital in the shares of Bank of Kathmandu Ltd., the returns would have been three times as much. If the investment were on the shares of Nepal Lever Ltd. or Bottlers Nepal Terai, the capital appreciation would be more attractive than that. This is how a stock investor shared his feelings with his friends, who has deposited his saving into an attractive scheme of a finance company that would get him 14% interest per annum."

Mr. Pokharel has analyzed "was it better to invest in common stocks or not" by analyzing the data from October 1998 to 1999. And he found that the shares of individual company showed very good performance. Even the market price of nearly dead NCM Mutual fund has been doubled in the year. NEPSE index showed upward trend for all shares in this period.

Mr. Pokharel gave the following reasons behind the appreciation of shares price:

- Reasonably same companies have rewarded the shareholders over time.
- Reduction on interest rate of money market diverted savings towards stock investment.
- Financial institutions and co-operatives have provided loan to the stock investors their shares as collateral.

At the same time healthy speculation is making the market interesting.

- Investors are being aware about the system. They tend to analyze the fundamentals of companies and are appearing more rational in their investment decision than they were before.
- Regulating authority is enforcing the required reform measures to maintain transparency.
- Continuity maintained in the government policy is an added advantage to the market.

Finally, Mr. Pokharel suggested that the capital market needs more of infrastructural investment than institutional investment. Once the required infrastructure can facilitate the market, the size of the market could be made even bigger by introducing new

instruments such as government bonds. The institutional investors will then automatically pour in. Various books, journals and independent studies by different author are presented here in this chapter. Fundamental Knowledge, relating to the topic has been achieved and here onward, we move for more specific knowledge and search step by step.

2.2.3 Reviews from Thesis

Previous thesis work would help us to carry out this study providing valuable guidelines at various points.

Gurung Damber Bahadur (1999) has conducted his study based on three samples i.e. Nepal Battery Company Ltd., Nepal Liver Ltd. and Joyti Spinning Mills Ltd. on the main topic of *"Risk and Return Analysis of Listed MPCs"*. He has introduced relative risk-return pattern, market sensitivity, portfolio analyzing data. He bounds to conclude that:

- Risk can be minimized significantly by making portfolio investment in these sectors.
- Portfolio beta of MPCs is not equal to 1.
- Common stock of Nepal Liver Ltd. is the best one for investment since its ERR>RRR.
- Still most of the Nepalese private investors invest in single security some of the investors use their fund in different securities without rational judgment about the effect of portfolio. Diversification of fund by making an appropriate portfolio can significantly reduce unsystematic risk.

Based on the analysis of data based and major finding of research, recommendations and suggestions are prescribed at the end of the chapter as follows:

- Common stock is a risky security and it requires a good preparation to invest in it. Risk and return should trade off.
- MPCs are suggested to be less risky sector because it has less coefficient of variance than that of other sectors. Risk associated with common stock of MPCs can be further reduced by making portfolio investment.
- Various companies' stock are not properly priced so we must identify over or under priced stock which in turn helps rational investment decision.

Shrestha Binod Krishna (2001) has conducted on the topic *"An evaluation of the financial performance of the DDC"* is reviewed here. Mr. Shrestha has tried to

evaluate the financial performance of the DDC particularly with respect to its liquidity position, assets utilization, capital structure and profitability. He has tried to identify the financial strength and weakness of DDC on the basic guide line of proper financial planning and control of the DDC to some extent. He has also presented some relevant suggestion for better performance of DDC.

His study is mainly based on financial statement of DDC covering the period of six years, i.e. from fiscal year 037/38 to 042/43. He has concluded that DDC has excessive current assets which remain idle. Hence, in order to hold optimum level of current assets, the DDC should prepare short term planning to determine the requirement of funds at different periods. He has suggested that the DDC should follow a consistent policy in recording its expenses and revenues. For the long run benefit he has suggested to reduce cost of raw materials used in order to generate return from the sales of product. He has strongly re commended to make detailed study on the purchase system of DDC.

Bhattarai Tekendra (2003) has submitted on the topic "*Risk and Return Analysis of Manufacturing Company in Nepal"*. His study is based on five sample companies i.e. Bottlers Nepal Ltd., Jyoti Spinning Mills Ltd., Arun Vanaspati Uddyog, Nepal Battery Company and Nepal Lube Oil Ltd. The main objective of the study is to find out risk minimizing asset subject to certain constraints. The study is mainly based on the annual reports and other publication of selected companies. These selected companies are categorized into main group i.e. (i) successful and (ii) unsuccessful company. The basis of categorization simply is the DPS, EPS and Other financial variables.

Mr. Bhattarai has concluded that:

- Closing price movement of JSM and AVU stock shows that the price is constantly decreasing and it results into negative return for all the time periods but closing price of NBC has dramatically increased from 1997 to 2001 and the price of NLO is also increasing though it has decreased for some initial years.
- The expected return for NBC, NLO and BNL is positive and for AVU & JSM is negative.
- The common socks of BNL, NBC and NLO are all under-priced as these lie above the CAPM line and these companies are categorized as successful companies whereas the stocks of AVU and JSM are over-priced and they are categorized as unsuccessful companies.
- Total risk of a stock must be partitioned into systematic risk and unsystematic risk. Systematic risk cannot be diversified away by combining large number of

securities but unsystematic risk can be eliminated through this process. Systematic risk must be taken into account while selecting stock to invest because this is the risk which is priced at market place.

- Study shows that systematic risk of NBC is least of all and the second small is associated to NLO followed by BNL. Thus, all successful companies have less systematic risk and it is higher for AVU.
- Multiple regression analysis based on dependent variable realized rate of return and independent variables total asset turnover and current ratio shows that relationship of return and asset turnover is positive but relationship for other independent variable is not clear as per their beta coefficients and other parameters.

Based on the analysis of data and findings of this research, Mr. Bhattarai as recommended the following points:-

- Common stock is risky and it requires thorough analysis regarding risk and return. Coefficient of variation is a relative measure of risk and more useful than absolute one i.e. SD of a given security. Manufacturing sector company's stocks have risks and returns very divergent in nature so it is suggested to take all these into account while investing in this sector.
- Portfolio construction by combination of stocks having negative correlation of returns is far more advantageous than those having positive. Weakly positively correlated stocks would also be useful for portfolio construction. Proper selection of stocks from this sector may help investors to form useful portfolio.
- All portfolio lie in and within feasible set are not efficient. Efficient set is the set of portfolios which lie northwest boundary of feasible set and these portfolios dominates other portfolios of feasible set in terms of risk and return.
- Price situation of stocks can be identified by comparing expected rate of return and required rate of return (RRR). RRR is equal to risk free rate plus market premium weighted by beta of stock. If a stock lies above CAPM, it is said to be under-priced and if lies below CAMP, it is said to be over-priced. Under-priced stocks are suggested to buy and over-priced stocks to sell. Most of the stocks of this sector are mis-priced.
- Investors must concern about the systematic risk of common stock. Sometimes stocks having less total risk may have more systematic risk. Stock of AVU has total risk least of all, but has greater systematic risk than that of other. Due to

inherent character of systematic risk that it cannot be diversified away, investor must care about it.

- Regression results suggest that total asset turnover always tend to have positive effect upon realized rate of return. So, it is suggested to increase sales and to maintain asset level at optimal position. Relationship of other variable i.e. current ratio with return is not clear.

Upadhya Sudip (2003) has submitted on the topic *"Risk and Return Analysis of JVBs"* is reviewed briefly. Here, listed banks are taken as reference to analyze risk and return in common stock investment. The main objective of the study is to analyze the risk and return of the common stock in Nepalese stock market and emphasis is given for banking sectors.

Mr. Upadhaya has summarized his findings as provided below:

- Many people have unrealistically optimistic or pessimistic expectations about investment or perhaps a fear of unknown. This study enables investors to put the returns they can expect and the risk they may take into better perspective.
- 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 lack of information and proper knowledge, Nepalese individual investors cannot analyze the security as well as market properly.
- Manufacturing and production sectors are least performer in terms of returns than that of other sectors (Banking, Hotel, etc).
- Risk is the variability of returns which is measured in terms of standard deviation of returns. In this regard, he has concluded that there are significantly different risk pattern of banking sectors.
- Another major aspect of risk is systematic risk which is defined by market and measured by beta (β) coefficient. There are clear evidences that the volatility of stock in relation to market is not uniform.
- Comparison between required rate of return and expected rate of return shows that either the stock is overpriced or under priced. The study shows that all stocks of commercial banks are overpriced.
- Diversification of fund by making a portfolio can reduce unsystematic risk of individual security significantly. If investors select the appropriate stocks for investment that have highly negative correlation of returns, they can eliminate the unsystematic risk totally. If the correlation between the returns of two

stocks is highly positive, risk reduction is not so significant. So the portfolio between the common stocks of same industrial category cannot reduce risk properly.

© To compare with market portfolio, banking sectors' return is not different. As the correlation of returns between most of the banks are nearer to +1, which is not favorable as for as portfolio construction is concerned.

© The point which should be noted here is, although there is a decrease in S.D. which may be favorable for highly risk averse investors but the return that one can get has also been decreased by huge margin. Before portfolio construction giving the view only on risk and ignoring return will be ridiculous. Because investor will souse huge return he would have earned. Hence, balancing between these two terms with giving special reference to other two factors, that may affect a particular market and to make investment decision will be beneficial.

Besides above, he has extended various suggestions for investors and researchers as follows:-

➲ Investment in common stock is risky job as it does not guarantee the return of initial investment. Although there is a chance of more return than expected, there is also a chance of heavy losses. The stock market undoubtedly is risky in short-term and investors need to be prepared for this. They should try and work-out their attitude toward the risky ness of various investment strategies.

➲ 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. But portfolio construction is a dynamic job because efficient portfolio depends on market movement or socio-political change. For portfolio construction, select the stocks those have higher returns with loss or negative correlation. Similar stocks cannot diversify risk properly.

➲ Before making an investment decision in stick market, assessment of personal risk attitude and requirement will always be helpful. Investors should make their investment decision based on financial parameters of the company. They should not rush over the rumors.

➲ Risk and return analysis is completely untouched area in context of our country, it is strongly suggested that further study should be conducted on the topic and also would like to suggest including maximum number of samples.

Bachhu, Ram Dahal. (2007) A research paper on *"Stock Market behavior of listed Joint Venture Company in Nepal"* describe the Nepalese Stock market as follows:

The main objective of his research study is to study, examine and analyze the stock market behavior. The specific objectives are:

- To study and analyze the stock price trend and volume of stock traded on the secondary market.
- To study and analyze the rate of listing of new companies and maintenance of listed company in Nepal Stock Exchange Ltd.
- To study and analyze the investors' views regarding the decision on stock investment.
- To study and examine the signaling factors' impact on stock price with the help of NEPSE index.
- To suggest the abstract to the interested parties related to stock market.

In his conclusion, Mr. Dahal says that Stock Market is the backbone of investment sector of the country. So by promoting the stock market in sizeable economic sector raise the economic development by mobilizing swing into productive sectors y making suitable investment environment different elements like price trend NEPSE index, volume of stock traded, rate of listing. Signaling factors should be analyzed. Stock market was not properly analyzed for smooth operation of secondary market. It shows gap between theory and practice of investment. In Nepalese stock market the study of market behavior is very useful subject matter if properly analyzes for the development of stock market.

Nepal stock exchange limited is analyzing stock market behavior in very little area regarding the stock market. So experts should be recruited and analyzed market behavior in efficient way so that all parties interested with stock market can get benefit from this.

The data analysis showed that Nepal Stock Exchange is not providing facilities for investors such as general awareness about investment, investment procedure for general public and movement of stock trend in different periods and their cause are not explained.

Most of the investors are complaining that the market makers brokers and NEPSE's staffs are making coalition for fraudulent activities towards investors. So NEPSE should clear this type of charge for the development of stock market.

The role of market players in the market should be made effective in promoting capital market in the country by giving proper training and adopting changes environment with modern tools and technique. Investment is lifeblood of economic

development. It is evident that stock exchange will continue to fulfill their vital functions in the national economy. So long as private enterprises exist, we know that the stock exchange is the place where stock and shares are bought and sold. The substantial competition in innumerable buyer and seller determines the prices with a measure of precision that cannot be obtained in other unorganized market. So, stock market is the proper market for the development of national economy.

The development of stock market in Nepal is both challenging and difficult. Though the viewpoint of share transition, public interest towards stock market, the trend of the price movement, information system etc. indicates the low performance of the stock market.

The problem like lack of strong professional analysis, independent buyer and seller, well trained manpower and management delay in transfer of shares, rational investor exist form the Nepalese stock market. Moreover, there is much other attraction that stock market able to attract the new generation towards it. Stock market will be strong market for the unemployed young generation to build their career in capital market; i.e. it has lots of prospects of development. From Dahal's study if seems that no comprehensive research has been conducted in relation to the development of stock market in Nepal, major problems facing by Nepalese stock market and expectation of future growth. Thus, the stock market further requires timely research to explore details of the problems and prospects of stock market in Nepal.

Shahi Preeti (2008) has conducted her study on the main topic of *"Risk and Return of Joint venture Commercial Bank in Nepal"*. She has introduced relative risk-return pattern, market sensitivity, portfolio analyzing data. She concludes that:

- NEPSE is still operating in its nascent stage. Most of the listed companies rarely published their financial statements comprehensively within a specified time frame.
- Although the overall objective is to study about investment in common stock of selected joint venture commercial bank in Nepal from the perspective of general investors, it is mainly concentrated on the risk and return elements of the stock since it is two most important factors for investment. The capital market of Nepal has grown significantly, so investor's investment opportunity has also been increased.
- The market price of share of all the commercial banks showed the same trend of increasing. The market price share of standard chartered bank is the highest while that of Himalayan Bank is the lowest in the year 2006/07 among the selected joint venture commercial bank.

- Return is the changes in value plus ant cash distribution expressed as a percentage of the initial value of any investment. The expected return of NABIL bank maximum (58.71%) among the selected banks. This is due to the effect of very unrealistic annual return in FYU 2006/07. Similarly, the expected return of Himalayan Bank is minimum (31.23%) among the selected bank. The expected return of Standard Chartered Bank and Everest Bank are respectively 45.72% and 54.54% during the five year review period.
- Diversification of fund by making a portfolio can reduce unsystematic risk of individual security significantly. If investors select the securities for investment, which have highly negative correlation of returns, the risk can be reduced totally. All the selected bank have positive correlation with the market which lies between -1 to +1

Shrestha, Surya Chandra. (2010) has conducted research on *"Stock Price Behavior in Nepal"*. This study aims to examine the efficiency of stock market in Nepal. The objective of the study was:

- To examine the serial correlation of successive daily price changes of the individual stocks.
- To determine whether the sequence of price changes is consistent with changes of the series of random numbers expected under the independent Bernoulli process.
- To determine the efficiency of the stock market through the theoretical model of efficient market hypothesis in Nepalese stock market.
- To provide feedback policy towards institutional development of efficient market.

He used the data considering the daily closing price of 30 listed companies' shares (ordinary) in the NEPSE. His study period was consists of almost hour and half years. He used the as serial correlation test and run test as Test Methodology. Serial Correlation Test: He applied serial correlation to test the stock price behavior of Nepal Stock Exchange by giving sight in whether the price changes of shares are independent to each other. For this purpose he computed the serial correlation of 1-15 days applying the natural logarithm model for daily price changes. Run Test: he also, in order to test independence of stock prices, applied runs test. He analyzed runs by total numbers of expected runs and runs signs.

The major findings and conclusions drawn on this study were:

After applying the required models and methodologies he found average correlation coefficient of 0.2055, 0.0825, and 0.0704 for 1, 2 and 3 lag days respectively. And for

lags 5 to 15 days were less than 0.07 in overall, large number of serial correlation coefficients of the log price changes of the 30 stocks for the sample periods are significantly departed from zero. In addition runs analysis also followed the serial correlation results that mean there has significant difference between actual numbers of runs for series of daily closing prices changes of the market. By the result of his applied models and methodologies he concluded, the successive price changes are not independent random variable for the 30 sample stocks listed in the NEPSE. Therefore, the random walk theory is not suitable description for the stock market behavior in Nepal.

By the study of Shrestha, large number of serial correlation coefficients of the log price changes of the 30 stocks for the sample periods is significantly departed from zero. In addition runs analysis also followed the serial correlation result that means there has significant difference between actual numbers of runs for series of daily closing prices changes of the market. In the study Mr. Shrestha has applied for technical analysis only to get the result of share price behavior and has not used any fundamental tools for analysis.

From the above all studies conducted by various researchers, it seems that Nepalese stock market is still in developing stage and it is facing various challenges. Furthermore it also shows that there are few research works conducted about the market price behavior on the stock market. Most of the above stated studies use technical methods and statistical methods like run test, correlation coefficient, NEPSE trend etc. for the analysis purpose.

Only few of the studies use fundamental analysis tools for the research work. More than that of none of the studies uses fundamental analysis tools for the research work. More than that none of the studies are concerned about the financial indicators like EPS, DPS, and NWPS which are the most influencing factors for the MPS. So, this study tries to analyze the relationship of these factors with the pricing behavior of the stock of the selected companies as well as it also tries to show the influence of the important events happened in the country on market price of the stock.

Samjhana Pudasaini (2012) has conducted research on *"Risk and return analysis of the commercial banks (with reference to NABIL, NIBL and HBL) "*. The primary objective of the present study is to analyze the risk and return of listed commercial banks in Nepal. The specific objectives of the proposed study are as follows:

- To study the risk and return of the sampled commercial banks (3 out of 31 banks) and also analyze their coefficient of variance.

- To perform the comparative analysis of the risk and return on the common stocks of the selected banks.
- To find out how sensitive the stock price of the selected commercial banks and the banking sector as a whole with that of the NEPSE.
- To provide the valuable suggestions about the risk and returns on stocks of the commercial banks that could be the deciding factors for the investors in their investment.

Capital markets are a vital part of the financial development and economic development of a country. They provide an alternative vehicle for financial resource mobilization. So this study enables investors to keep the return they can expect and the risk they may take into better perspective. From the above analyses of risks and return of different commercial banks, following major findings have been obtained.

- Average total dividend of Nabil, NIBL and HBL during the five year is 96% 34.25% and 40.08% respectively. In the same way, average cash and average stock dividend of Nabil NIBL and HBL are 62% & 34%, 15.5% &18.75, 18.76% & 21.31% respectively. So Nabil is paying the good amount of dividend compared to other sample banks.
- Average market price of the Nabil, NIBL and HBL during the five year is 3969.6, 1506.4 and 1479.2 respectively. Average P/E Ratio and average EPS of Nabil is 35.82 & Rs 111.99 respectively. Similarly average P/E Ratio and average EPS of NIBL and HBL is 28.34 & Rs53.95, 55.26 & Rs26.58 respectively According to the market price analysis, the stock of Nabil is best among the sample commercial banks.
- Expected return on common stock of Nabil is maximum (61.4%). Similarly expected return of common stock of NIBL is 40.36% and HBL is (27.15%) deviation. On the basis of S.D., common stock of Nabil is most risky since it has high S.D. i.e. 0.969633 and NIBL has S.D. i.e. 0.8179 and common stock of HBL is least because of its lowest S.D. of 0.5116, on the other 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 Nabil is best among all other banks. Nabil has 1.57920 unit of risk per 1 unit of return. But common stock of NIBL has the highest risk per unit of return i.e. C.V. 2.0263
- Beta coefficient explains the sensitivity or volatility of the stock with market.
- Higher the beta higher the volatility in the contest, common stock of HBL is most volatile i.e. 0.9437 and common stock of Nabil is least volatile i.e.1.86515 and NIBL has 1.4439. The bank's stock, having the beta less than

beta coefficient of market i.e. defensive stock. The stock of Nabil seems most aggressive than other stocks where as HBL seems least aggressive. We find NIBL and Nabil have aggressive type of common stock. Among the most aggressive seems to be Nabil with highest beta and least aggressive is HBL with lowest beta among three bank's common stock.

- Most of the investors invest only keeping the return in the mind but they are found unable to calculate the risk factors of the security. Most of the Nepalese private investors invest in single security. 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.

Rupa Poudel (2012) has conducted research on *"A study on investment in common stock including risk and return analysis of the listed commercial banks (with special reference to SCBL, NABIL, and HBL in NEPSE) "*. The main objective of the study is to analyze the performance of stock market and the behavior of share price of listed commercial banks. However, the specific objectives of the study are as follows:

1. To analyze the risk involved in the common stock investment of the sampled commercial banks.
2. To provide a brief view of the present Nepalese stock market.
3. To ascertain the share price behavior of the commercial banks listed in NEPSE
4. To evaluate return and risk proportion of investments on stock of sampled commercial banks.
5. To provide suggestions, some practical ideas and recommendations based on the analysis of the data.

On the basis of the detailed study of the listed commercial bank in regards to investment in common stock including risk and return analysis following major findings have seen, they are presented as follows;

Talking about number of listed companies under NEPSE, the increasing trend shows the positive percentage change which indicates increasing interest of public towards the establishment of companies in the country. Because of the persistence in the stock price movements, professional traders either individual or institutional can beat the market. Therefore to make greater profit than naive buy and hold strategy, acute

fundamental and other analysis are required which accurately predict the appearance of the new information in the market that have impact on prices.

With respect to the calculated of Actual rate of return and required rate of return of Himalayan Bank was found to be lower, so the stocks of HBL are overvalued. The remaining two bank Nabil Bank and Standard charter Bank have Actual return more than the required rate of return so the stock price of those Bank is undervalued. All the market risk and return can be assessed through over all NEPSE index. Corresponding to the fluctuations in individual industries the overall market index has also moved accordingly. It has reached maximum in the initial observation month and it started decreasing trend till the month of April/May. But from the month of May/June the market index are going to increasing.

Therefore, the coefficient of variation can be preferred over the standard deviation as measure of risk On the basis of coefficient variation, HBL shares can be considered as more riskier whereas SCBNL's shares can be measured as less riskier. Stocks of Nabil Bank are more aggressive to market changes as revealed by the highest beta coefficient of 1.23 and the least beta coefficient is yielded by Himalayan Bank of four sampled banks. The finding of this study also implies that Nepal Stock Exchange is operated under the dearth of sophisticated financial and market analysts. Activities of such analysts with the skillful mind, talent and ability including statistical knowledge and react about incoming information and their valuable suggestions in building of new regulations help to cut down the dependence in the stock price changes. But, unfortunately such kinds of activities were not found in Nepalese stock market. Thus, investors are not in attention of publicly available information and whimsically them response the information and accept the new price. Details of data, its presentation and analysis reveal that standard deviation of Nabil bank is 48%which is highest of all the banks selected for the study. Standard deviation of HBL and SCBNL are 27.2% and 27% respectively. Depending upon this parameter i.e. S.D., SCBNL stock is said to be relatively less risky. Regarding the total risk, Nabil Bank Ltd. consists of highest 65.97% of total risk which is risky among the sample. The stock of Standard

Chartered Bank Nepal ltd is recorded as least risky in comparison to it other sampled banks in terms of standard deviation. The average realized rate of return of all the sampled banks are not the same over the sampled periods.

2.3 Research Gap

Financial markets play the fundamental role in the economic development of a country but most of the general Nepalese investors have lack of Proper analysis of

investment they are going to make. Though Risk & Return analysis is very important factor to decide which security is good to invest on ,they ignore the importance of its due to lack of knowledge & they invest in share merely keeping return in the mind & the so called facts they have heard from their friends & relatives etc. Preciously done researches in same topic though help bit to focus the importance of Risk & Return from investor's point of view, it fails to highlight the valuation & importance of financial institutions which are the financial intermediation between borrowers and savers. Most of the wealth & source of it mobilized through the banking institution now days. It also enables debt financing for investments & accelerate economic growth of the country. But in the process of investing funds in market through different ways banking institution use, it also has to go through risky situations. By succeeding goal & sustain in the market in long run, it is very important to make balance the risk & return of their investment. So keeping the valuation of financial institutions & importance of Risk & Return for them in mind this thesis is an attempt to explore it for the both investor & financial institution's point of view. It will be very helpful to those banking institutions to make their investment secure by improving their investment policy with the help of Risk & Return analysis. The finding of previous research are equally important but the unique part which makes it new between previously done researches in same topic are, summary, conclusion, recommendation etc which will be very useful to selected banks to find their week & risky part with its solution to work on & improve it to get their goal of earning profit (Return) from their investment done in the market. This research deal with the only three sample banks to provide clear vision than the previous research done having five or more samples is also could be important to make it new.

CHAPTER - III

RESEARCH METHODOLOGY

3.1 Introduction

Research in common parlance refers to a search for knowledge is composed by ‘re’ and ‘search’ where ‘re’ means repeatedly or again and again and ‘search’ means to investigate or find. Research methodology is a way to systematically solve the research problem.

Research methodology may be defined as “a systematic process that is adopted by the researcher in studying problem with certain objective and view”. In other word, research methodology describes the methods and process applied in the entire aspect of the study focus of data, data gathering instrument and procedure, data tabulating and processing and methods of analysis. It is really a method of critical thinking by defined and redefining the problems, formulating hypothesis or suggested solution and collecting and organizing and evaluating data, making deduction and making conclusions.

In addition, “Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In this study, the various steps are generally adopted by a researcher in studying his/her research problem along with the logic behind them.” (Kothari, 1990; 10)

Research methodology is a path from which we can solve research dilemma systematically to accomplish the basic objective of the study. It consists of a brief explanation of research design, nature and sources of data, method of data collection and methods of tools used for analyzing data.

3.2 Research Design

A research design is the arrangement of conditions for collection and analysis of data that aim to combine relevance to the research purpose with economy in procedure. Research design in the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to objective of this study. To achieve the objective of this study, descriptive and analytical research design has been used.

It is the process which gives us an appropriate way to reach research goal. It includes definite procedures and techniques which guide in sufficient way for analyzing and evaluating the study. This study is carried out by using both quantitative and qualitative analysis methods. Mostly, secondary data has been used for analysis, but the discussion and personal interview with the concerned employees of the selected banks are also used for qualitative analysis. Hence, research design of this study is based on descriptive and analytical method.

3.3 Population and Sample

The population refers to the industries of the same nature and its services and product in general. Thus, total of 31 commercial banks operating in Nepal constitute the population of the data and the bank under study constitutes the sample for the study. Among them only two banks are selected as the sample banks to carry out the study. The sample size represents almost 10% of the total population.

a) Nabil Bank Ltd.

b) Standard Chartered Bank Nepal Ltd.

c) Everest Bank Ltd.

3.4 Nature and Sources of Data

For the purpose of this study, data are collected mainly from the secondary as well as primary sources. In the study two types of data are collected which are:

Primary Data

This is the first hand information bearing on any research which has been collected by the researcher or his agents or assistant. These are original observation collected for the first time. Such data facilitate original investigation and observation leading to useful and valuable result.

Secondary Data

The next method of collecting the data is secondary source. The secondary data are based on the second hand information. Secondary data were gathered much more quickly than primary. Secondary source were bulletins and newspapers of selected banks, annual reports, official document, reference material collected from library.

3.5 Method of Data Collection

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

The annual reports of Nabil bank for the period of five years were obtained from the field visit of its head office at Kamaladi. The annual reports of EBL for the period of five years were obtained from the field visit of its share department at its head office located at Lazimpat and the annual reports of SCBNL for the period of five years were obtained from the field visit of its head office at New Baneshwor. NRB publications have been collected by the personal visit of concerned Departments of NRB at Baluwatar. The data regarding the profile of Nabil bank, SCBL and EBL and other related documents were collected from internet websites. Unpublished master's thesis, books, research papers, articles, journals have been collected mainly form Centre Library of Tribhuvan University, library of Shanker Dev Campus, and NRB Magazines and newspapers were from concerned authorities.

After collecting data, as necessarily required, they were separated and analyzed. Presentation and analysis of the collected data is the main theme of the research work. Collected raw data were first presented in systematic manner in tabular forms and then analyzed by applying different financial and statistical tools to achieve the research objectives. Besides these, some graph, charts and tables have been presented to analyze and interpret the finding of the study. Hypothesis is also made and tested.

3.6 Method of Data Analysis

Various financial and statistical tools will be used to complete the research study such as ratio analysis, standard deviation, coefficient of variance, coefficient of correlation, t-statistics etc. For presentation purpose, different types of tables, charts, figures and graphs are used as per necessary.

The first step conducted was the processing of the data in which classification and tabulation of calculated data was carried out. This has prepared the data for further analysis. To achieve the predetermined objective of the research, certain tools are used. The tools used are categorized as: measuring return and measuring risk.

3.6.1 Measuring Return

3.6.1.1 Market price of stocks

One of the major data of the study is market price of stocks, among high, low and closing price. Each year closing price has been taken as a market price of the stock, which has specific time span of one year and the study has focused in annual basis.

3.6.1.2 Earnings

Earning refers to the net income after taxes of the company. EPS expresses the earning power of the company in terms of a share held by the equity shareholders. This ratio is computed by dividing the net profits after preference dividend by the number of equity shares outstanding. EPS can be expressed as:

$$\text{Earnings Per Share (EPS)} = \frac{\text{Net Income after taxes}}{\text{No. of Common Stocks Outstanding}}$$

3.6.1.3 Dividend

Dividend is that part of earnings that is distributed to the shareholders as a part of their investment. Dividend is return to equity capital that consists of price time and price of risk taking by investors. It indicates the part of earning distributed to shareholder on per share basis (DPS), if distributed the common stock's portion is said divided per share (DPS). DPS can be expressed as:

$$\text{Dividend per share (DPS)} = \frac{\text{Total amount of dividend paid}}{\text{No. of Common Stocks Outstanding}}$$

3.6.1.4 Expected rate of return

The expected rate of return is the expected income after tax increase in the value of the initial investment over the holding period. The overall rate or return can be decomposed into capital appreciation and dividend components. Capital appreciation is the difference between investor's end of the period price and beginning of the period price. Expected rate of return ($\overline{R}_M$) can be expressed as:

$$\overline{R}_M = \frac{|\phi R_M}{n}$$

3.6.1.5 Capital asset pricing model (CAPM)

Before investing in securities, an investor should forecast the true future value of securities or assets. To solve this problem, there are many valuation models in use. Capital market theory is used to determine the required rate of return. Therefore, it is called capital asset pricing model (CAPM). This model was developed by William Sharpe, John Linter and Jan Mossin.

The basic theory which links together risk and return for all assets is commonly called the Capital Assets Pricing Model. Using the beta coefficient to measure the non-diversifiable risk, CAPM is given as follows:

$$K_J = R_f + (R_m - R_f)\ \beta_j$$

Where,

K_J = Required rate of return on asset J

R_f = Risk free rate of return

R_m = Market rate of return

β_j = Beta coefficient of asset J

The required rate of return on an asset (K_J) is an increasing function of beta β_j which measures non-diversifiable risk. In other words higher the risk higher the required rate of return and vice versa. The model can be broken into two parts: the risk free rate (R_f), on the risk premium ($R_m - R_f$) β_j, the ($R_m - R_f$) portion of the risk premium is called the market risk premium. Since it represents the premium the investors might receive for taking the average amount of risk associated with holding the market portfolio of assets.

3.6.2 Measuring Risk

In general, investors are risk averters and they selected the securities that maximize expected rate of return for any given level of risk or minimize risk for any given level of expected returns. Cheney and Moses define risk as the variability of possible returns around the expected return of an investment.

Some of the statistical and other methods that can be measured to measure risk of underlying financial assets are discussed below:

3.6.2.1 The standard deviation

The standard deviation is the most popular and useful measures of dispersion and gives uniform, correct and stable result. It is a statistical measure of variability of

distribution of return around its mean. It is the square roots of variances of returns. Standard deviation is the measure of the total risk of assets i.e. it means dispersion of returns around the mean return. The standard deviation (∃) is the other measure of investment risk. The smaller the standard deviation, the lower will be the degree of risk of the stock.

$$\text{Standard Deviation } (\sigma m) = \sqrt{\frac{|\phi(RM - \bar{R}M)2}{n - 1}})$$

3.6.2.2 The coefficient of variation (CV)

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

$$CV = \frac{|\sigma M}{\bar{R}M}$$

3.6.2.3 Beta Coefficient

Market sensitivity of stock is explained in terms of beta coefficient. Higher the beta, greater the sensitivity and reaction to the market movement. Logically the systematic risk is the covariance between the returns of individual assets or portfolio and the returns of the market portfolio. The measure of systematic risk is represented by beta. It is an index of systematic risk, which cannot be eliminated through the means of diversification. Beta (℘) measure the individual bank's relative risk to the market portfolio, NEPSE. It helps to the measure inherent risk in the sample banks. 'It can be measured by the degree to which the sampled shares tend to move up and down with NEPSE.' As beta measure the relative volatility of security's return in relation to the market return, it should be measured in terms of the securities and market covariance and the market's variance. "The beta of security is the appropriate measure of its risk because beta (℘) is proportional to the risk that the security contributes to the optional portfolio."

$$℘N = \frac{|COV\ (RN,RM)}{\sigma M2}$$

CHAPTER - IV

PRESENTATION AND ANALYSIS OF DATA

This chapter covers presentation of the arguments, documentation, ideas or concepts and interpretations. In this chapter, the effort has been made to "analyze risk and return impact of profitability of commercial bank". It consists profitability ratio, calculation of required rate of return, average rate of return, total risk including calculation of beta and other indicators to estimate total risk and finally analysis on base of statistical tools employed and interpretation. Then after portfolio context, CAPM and CML aspects are presented and analyzed to come to the final presentation of relationship of risk and return and financial variables. The analysis of data includes of organizing, tabulating and assessing financial and statistical result.

4.1 Profitability Ratios

Profitability ratios measure the overall performance of the bank by determining the effectiveness of the bank in generating profit and are calculating by establishing relationship between profit and assets.

Profitability ratio indicates the degree of success in achieving desired profit. Various profitability ratios are calculated to measure the efficiency of the bank. Success and failure of the bank depends upon its profitability showing how efficiently it is utilizing its deposit. The various ratios to measure the efficiency of the bank are as follows.

4.1.1 Return on Loans & Advances

It measures the earning capacity of commercial banks on its deposits mobilized on loan and advances. Mostly loan and advances include loan, cash credit, overdrafts bills purchased and discounted. Return on loans and advances ratio of NABIL, SCBNL and EBL are presented below in the table.

Table 4.1

Return on Loans & Advances (in %)

Fiscal year	Selected Banks		
	NABIL	SCBNL	EBL
2063/64	4.62	6.75	2.10
2064/65	3.96	6.24	2.40
2065/66	4.02	7.93	2.61
2066/67	3.47	6.91	2.95
2067/68	3.73	6.41	2.94
Mean ($\bar{X}$)	3.96	6.848	2.60
S.D.	0.383	0.591	0.325
C.V. (%)	9.67	8.63	12.50

Source: Appendix-1 & 12.

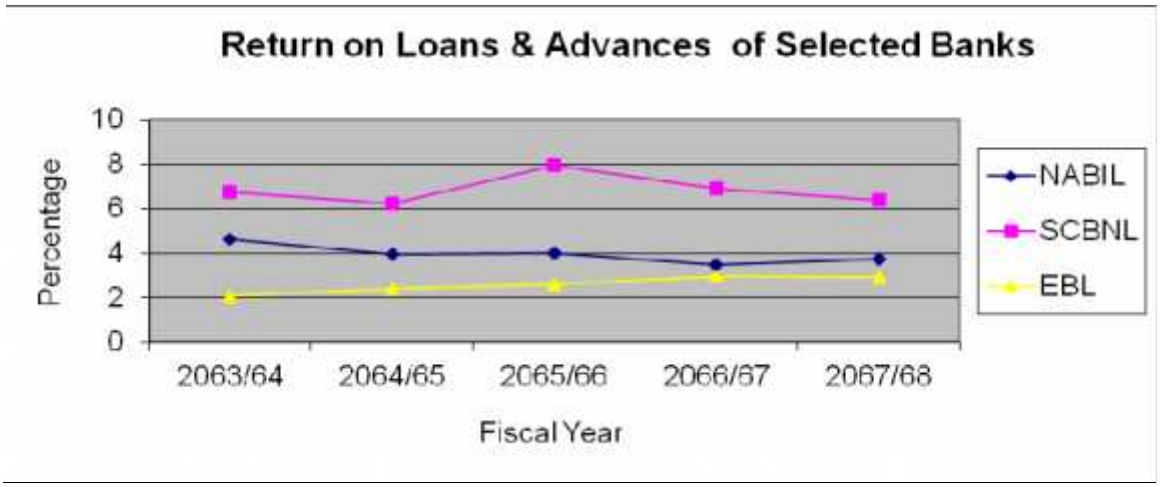
Above table depicts the return on loans and advances ratio of the selected commercial banks. The mean ($\bar{X}$) of return on loans and advances ratio of NABIL, SCBNL and EBL are 3.96, 6.848 and 2.60 respectively.

The return on loans and advances ratio of the banks is fluctuating over the study period. The highest return on loans and advances ratio of NABIL is 4.62 and lowest ratio is 3.47 in the fiscal year 2063/64 and 2066/67 respectively. Similarly, the highest return on loans and advances ratio of EBL is 2.95 and lowest ratio is 2.10 in the fiscal year 2065/66 and 2063/64 respectively as well as SCBNL's highest return on loans and advances ratio is 7.93 and lowest ratio is 6.24 in the fiscal year 2066/67 and 2064/65 respectively.

The mean of return on loans and advances ratio of SCBNL is the highest i.e. 6.848 than that of two other banks i.e. EBL and NABIL. Standard deviation of return on loans and advances ratio of NABIL, SCBNL and EBL are 0.383, 0.591 and 0.325 respectively. Coefficient of variation of NABIL is 9.67%, EBL is 12.5%, and SCBNL is 8.63%.

To make bank's profitability and return from loans and advances is satisfactory; the banks should really make an effort in loans and advances efficiently to generate adequate level of return. This ratio can be presented in the following graph.

Graph 4.1



4.1.2 Return on Total Deposit

Total deposit of the bank is its creditorship. The prior objective of the bank is collected more deposit and utilization in various sectors i.e. to earn high profit there by maximizing return on its total deposits. This ratio reflects the extent to which the banks have been successful in mobilizing its total deposits. Return on total deposit of NABIL, SCBNL and EBL are presented below in the table.

Table 4.2

Return on Total Deposit (in %)

Fiscal year	Selected Banks		
	NABIL	SCBNL	EBL
2063/64	2.89	2.81	1.63
2064/65	2.34	2.75	1.88
2065/66	2.76	2.90	1.92
2066/67	2.45	3.09	2.25
2067/68	2.69	2.95	2.26
Mean (€X)	2.626	2.90	1.988
S.D.	0.202	0.118	0.24
C.V. (%)	7.69	4.07	12.07

Source: Appendix-2 & 12.

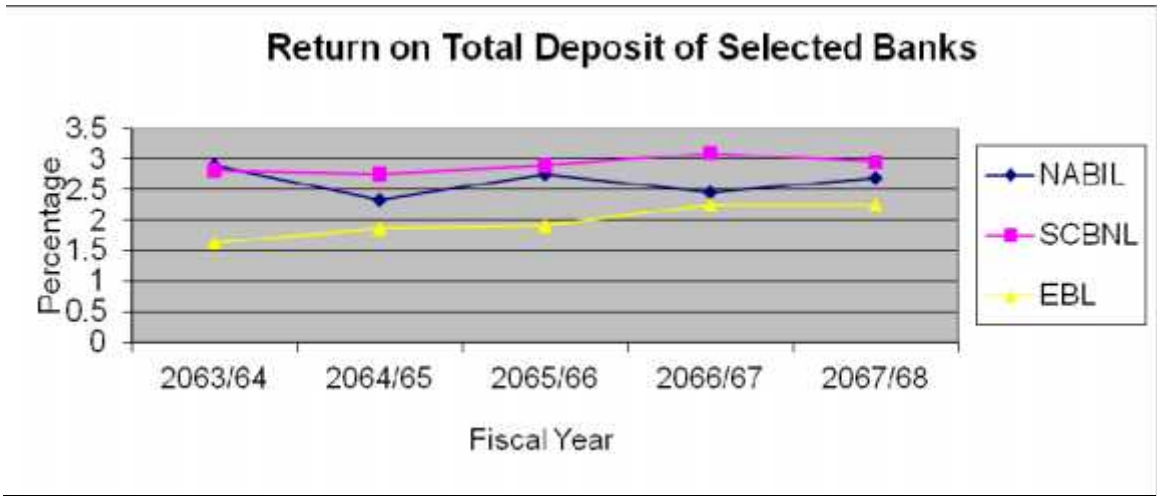
Above table depicts the return on total deposit ratio of the selected commercial banks. The mean (€X) of return on total deposit ratio of NABIL, SCBNL and EBL are 2.626, 2.90 and 1.988 respectively.

The return on total deposit ratio of the banks is fluctuating over the study period. The highest return on total deposit ratio of NABIL is 2.89 and lowest ratio is 2.34 in the fiscal year 2063/64 and 2064/65 respectively. Similarly, the highest return on total deposit ratio of EBL is 2.26 and lowest ratio is 1.63 in the fiscal year 2067/68 and 2063/64 respectively as well as SCBNL's highest return on total deposit ratio is 3.09 and lowest ratio is 2.75 in the fiscal year 2066/67 and 2064/65 respectively.

The mean of return on total deposit ratio of SCBNL is the highest i.e. 2.90 than that of two other banks i.e. EBL and NABIL. Standard deviation of return on total deposit ratio of NABIL, SCBNL and EBL are 0.202, 0.118 and 0.24 respectively. Coefficient of variation of NABIL is 7.69%, EBL is 12.07%, and SCBNL is 4.07%.

To make bank's profitability and return from total deposit is satisfactory; the banks should really make an effort in total deposit, its collect efficiently to generate adequate level of return. This ratio can be presented in the following graph.

Graph 4.2



4.1.3 Return on Total Assets

This ratio is calculated to reveal the profitability of the banks with respect to total assets. It measures the profitability of all financial resources invested in the bank's assets. Return on total assets of NABIL, SCBNL and EBL are presented below in the table

Table 4.3

Return on Total Assets (in %)

Fiscal year	Selected Banks		
	NABIL	SCBNL	EBL
2063/64	2.72	2.42	1.38
2064/65	2.32	2.46	1.63
2065/66	2.55	2.56	1.73
2066/67	2.77	2.70	2.09
2067/68	2.43	2.55	2.10
Mean (€X)	2.558	2.538	1.786
S.D.	0.17	0.097	0.277
C.V. (%)	6.6458	3.8219	15.5095

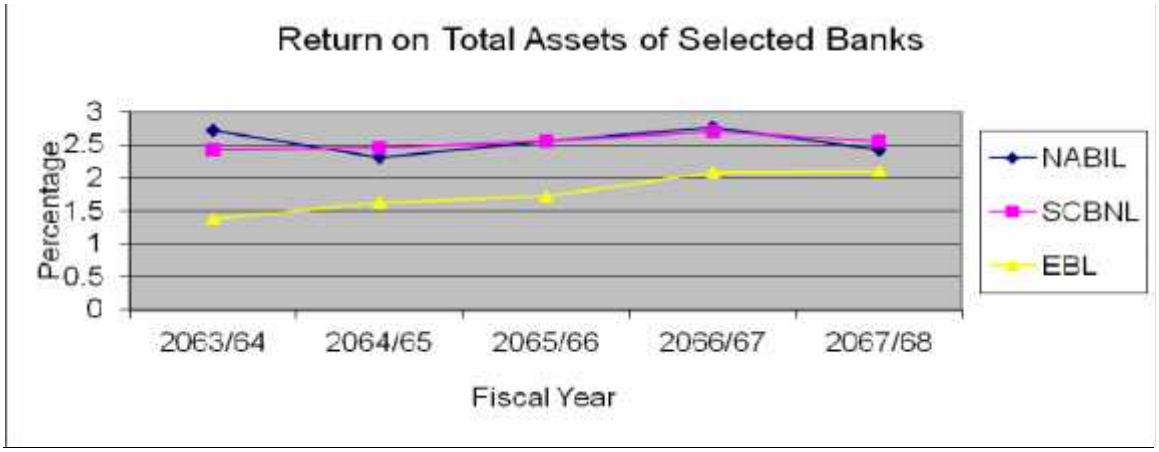
Source: Appendix-3 & 12.

Above table depicts the return on total assets ratio of the selected commercial banks. The mean (€X) of return on total assets ratio of NABIL, SCBNL and EBL are 2.558, 2.538 and 1.786 respectively.

The return on total assets ratio of the selected banks is fluctuating over the study period The highest return on total assets ratio of NABIL is 2.77 and lowest ratio is 2.32 in the fiscal year 2066/67 and 2064/65 respectively. Similarly, the highest return on total assets ratio of EBL is 2.10 and lowest ratio is 1.38 in the fiscal year 2067/68 and 2063/64 respectively as well as SCBNL's highest return on total assets ratio is 2.70 and lowest ratio is 2.42 in the fiscal year 2066/67 and 2063/64 respectively.

The mean of return on total assets ratio of NABIL is the highest i.e. 2.558 than that of two other banks i.e. EBL and SCBNL. Standard deviation of return on total assets ratio of NABIL, SCBNL and EBL are 0.17, 0.097 and 0.277 respectively. Coefficient of variation of NABIL is 6.65%, EBL is 15.51%, and SCBNL is 3.82%. The bank's return on asset is not satisfactory. The bank's should utilize the idle assets accumulate by the bank. This ratio can be presented in the following graph.

Graph 4.3



4.1.4 Return on Shareholder's Equity

The equity capital of the bank is its owned capital. The prior objective of the bank is wealth maximization i.e. to earn high profit there by maximizing return on its equity capital. This ratio reflects the extent to which the banks have been successful in mobilizing its equity capital. Return on shareholder's equity of NABIL, SCBNL and EBL are presented below in the table

Table 4.4

Return on Shareholder's Equity (in %)

Fiscal year	Selected Banks		
	NABIL	SCBNL	EBL
2063/64	14.76	32.68	19.57
2064/65	19.46	32.85	21.36
2065/66	32.94	33.58	24.36
2066/67	46.74	32.22	26.25
2067/68	65.03	30.43	26.20
Mean (€X)	35.786	32.352	23.548
S.D.	18.395	1.056	2.669
C.V. (%)	51.4028	3.2641	11.3343

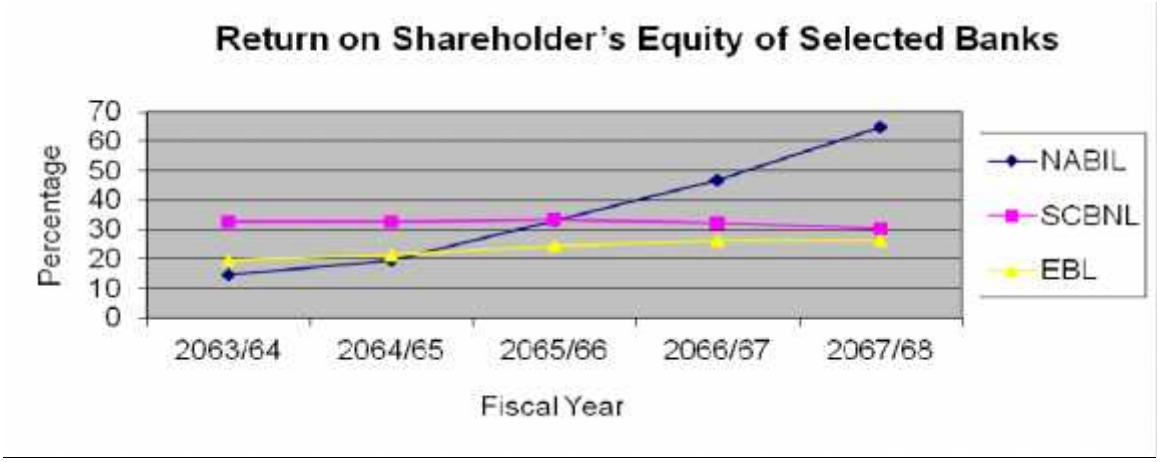
Source: Appendix-4& 12

Above table depicts the return on shareholder's equity ratio of the selected commercial banks. The mean (€X) of return on shareholder's equity ratio of NABIL, SCBNL and EBL are 35.786, 32.352 and 23.548 respectively.

The return on shareholder's equity ratio of the banks is fluctuating over the study period. The highest return on shareholder's equity ratio of NABIL is 65.03 and lowest ratio is 14.76 in the fiscal year 2067/68 and 2063/64 respectively. Similarly, the highest return on shareholder's equity ratio of EBL is 26.25 and lowest ratio is 19.57 in the fiscal year 2066/67 and 2063/64 respectively as well as SCBNL's highest return on shareholder's equity ratio is 33.58 and lowest ratio is 30.43 in the fiscal year 2065/66and 2067/68 respectively.

The mean of return on shareholder's equity ratio of NABIL is the highest i.e. 35.786 than that of two other banks i.e. EBL and SCBNL. Standard deviation of return on shareholder's equity ratio of NABIL, SCBNL and EBL are 18.395, 1.056 and 2.669 respectively. Coefficient of variation of NABIL is 51.40%, EBL is 11.33%, and SCBNL is 3.26%. The banks should keep up with generating the profit at the same rate at which shareholder's fund are increasing. This ratio can be presented in the following graph.

Graph 4.4



4.1.5 Return on Investment

This ratio measures how well the banks have invested its resources to generate profit and to indicate percentage of return from it higher ratio represents higher efficiency of banks. Return on investment of NABIL, SCBNL and EBL are presented below in the table.

Table 4.5

Return on Investment (in %)

Fiscal year	Selected Banks		
	NABIL	SCBNL	EBL
2063/64	7.53	5.10	5.95
2064/65	7.51	5.89	8.91
2065/66	9.52	5.07	10.74
2066/67	8.31	5.47	16.61
2067/68	10.23	6.48	12.03
Mean ($\bar{X}$)	8.62	5.602	10.848
S.D.	1.088	0.53	3.531
C.V. (%)	12.6218	9.4609	32.5498

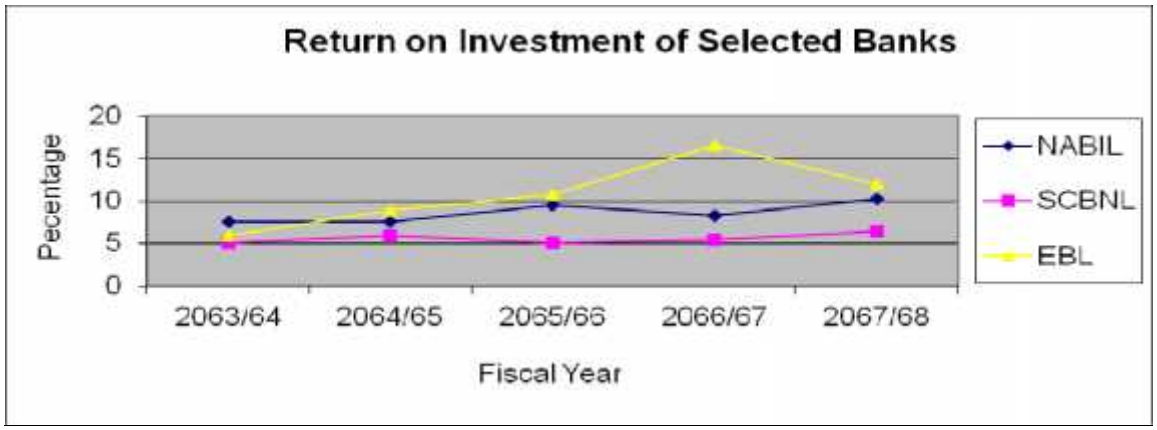
Source: Appendix-5 & 12

Above table depicts the return on investment ratio of the selected commercial banks. The mean ($\bar{X}$) of return on investment ratio of NABIL, SCBNL and EBL are 8.62, 5.602 and 10.848 respectively.

The return on investment ratio of the selected banks is fluctuating over the study period. The highest return on investment ratio of NABIL is 10.23 and lowest ratio is 7.51 in the fiscal year 2067/68 and 2063/64 respectively. Similarly, the highest return on investment ratio of EBL is 16.61 and lowest ratio is 5.95 in the fiscal year 2066/67 and 2063/64 respectively as well as SCBNL's highest return on investment ratio is 6.48 and lowest ratio is 5.07 in the fiscal year 2067/68 and 2065/66 respectively.

The mean of return on investment ratio of EBL is the highest i.e. 10.848 than that of two other banks i.e. NABIL, and SCBNL. Standard deviation of return on investment ratio of NABIL, SCBNL and EBL are 1.088, 0.53 and 3.531 respectively. Coefficient of variation of NABIL is 12.62%, EBL is 32.55% and SCBNL is 9.46%. To make bank's profitability and return from investment is satisfactory, the banks should really make an effort in investing its resources efficiently to generate adequate level of return. This ratio can be presented in the following graph.

Graph 4.5



4.1.6 Return on Earning Per Share

The profitability of the firm or company from the point of view of the ordinary shareholders is earnings per share. It measures the profit available to the equity shareholders on a per share basis that is the amount that they can get on every share held. It represents what the owners are theoretically entitled to receive from the bank. Earnings per share of NABIL, SCBNL and EBL are presented below in the table

Table 4.6

Earnings Per Share (in Rs.)

Fiscal year	Selected Banks		
	NABIL	SCBNL	EBL
2063/64	137.08	167.37	78.42
2064/65	115.86	131.92	91.82
2065/66	113.44	109.99	99.99
2066/67	83.81	77.65	100.16
2067/68	70.67	69.51	83.18
Mean (€X)	104.172	111.288	90.714
S.D.	23.843	35.915	8.768
C.V. (%)	22.8881	32.2721	9.6655

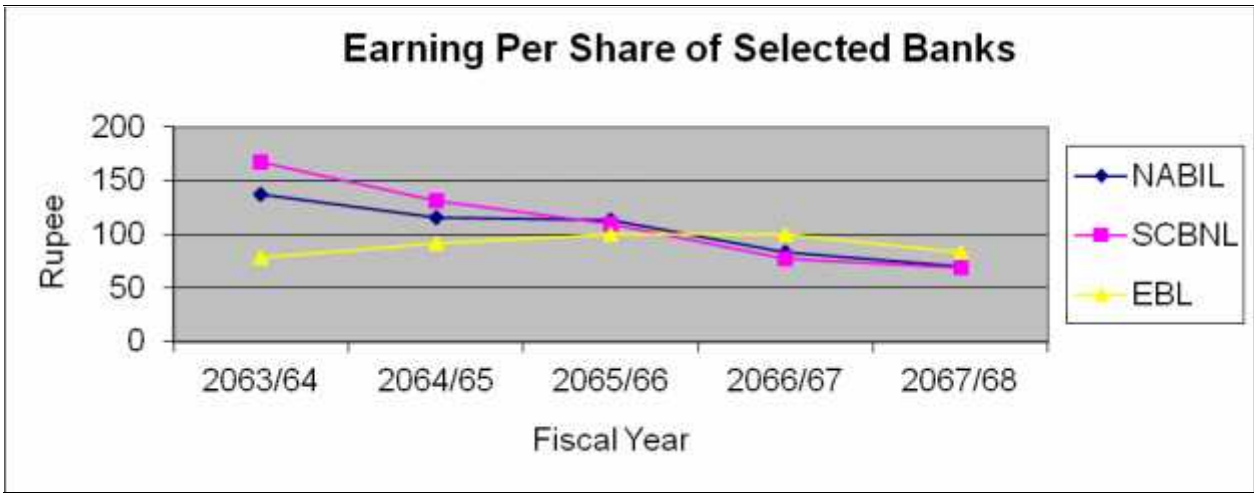
Source: Appendix-6 & 12.

Above table depicts the earning per share of the selected commercial banks. The mean (€X) of earning per share of NABIL, SCBNL and EBL are 104.172, 111.288 and 90.714 respectively.

The earnings per share of the banks is fluctuating trend over the study period. The highest earning per share of NABIL, SCBNL and EBL are 137.08, 167.37 and 100.16 respectively. This is good for the bank of EBL but other two banks' EPS is not good because decreased in EPS. But comparatively, SCBNL has better position than EBL and NABIL due to higher average (mean).

The mean of earning per share of SCBNL is the highest i.e. 111.288 than that of two other banks i.e. EBL and NABIL. Standard deviation of earning per share of NABIL, SCBNL and EBL are 23.843, 35.915 and 8.768 respectively. Coefficient of variation of NABIL is 22.89%, EBL is 9.66%, SCBNL is 32.27%. This ratio can be presented in the following graph.

Graph 4.6



4.1.7 Return on Dividend Per Share

The profitability of the firm or company from the point of view of the ordinary shareholders is dividend per share. It measures the profit available to the equity shareholders on a per share basis that is the amount that they can get on every share held. It represents what the owners are theoretically entitled to receive from the bank.

Dividend per share of NABIL, SCBNL and EBL are presented below in the table

Table 4.7

Dividend Per Share (in Rs.)

Fiscal year	Selected Banks		
	NABIL	SCBNL	EBL
2063/64	100	80	10

2064/65	60	80	20
2065/66	35	50	30
2066/67	30	55	30
2067/68	30	50	50
Mean (€X)	51	63	28
S.D.	26.907	14	13.266
C.V. (%)	52.7588	22.2222	47.38

Source: Appendix-7 & 12.

Above table depicts the dividend per share of the selected commercial banks. The mean (€X) of dividend per share of NABIL, SCBNL and EBL are 51, 63 and 28 respectively.

The highest dividend per share of NABIL, SCBNL and EBL are 100, 80, and 50 respectively. This is not good for the bank because it's DPS is decreased. But comparatively, SCBNL has better position than EBL and NABIL due to higher average (mean).

The mean of dividend per share of SCBNL is the highest i.e. 63 than that of two other banks i.e. EBL and NABIL. Standard deviation of dividend per share of NABIL, SCBNL and EBL are 26.907, 14.00 and 13.266 respectively. Coefficient of variation of NABIL is 52.76%, EBL is 47.38%, and SCBNL is 22.22%.

4.2 Analysis of Risk and Return on Common Stocks

In order to see the status of return and risk on common stocks of selected companies, returns on the stocks along with their risks have been calculated and presented in this section for analysis.

4.2.1 Analysis of Risk and Return for the Stocks of NABIL

For the analysis of risk and return for the hydropower sector, input data of the selected two companies are presented and the results thereof have been presented and analyzed.

Table 4.8

Risk and Return for NABIL

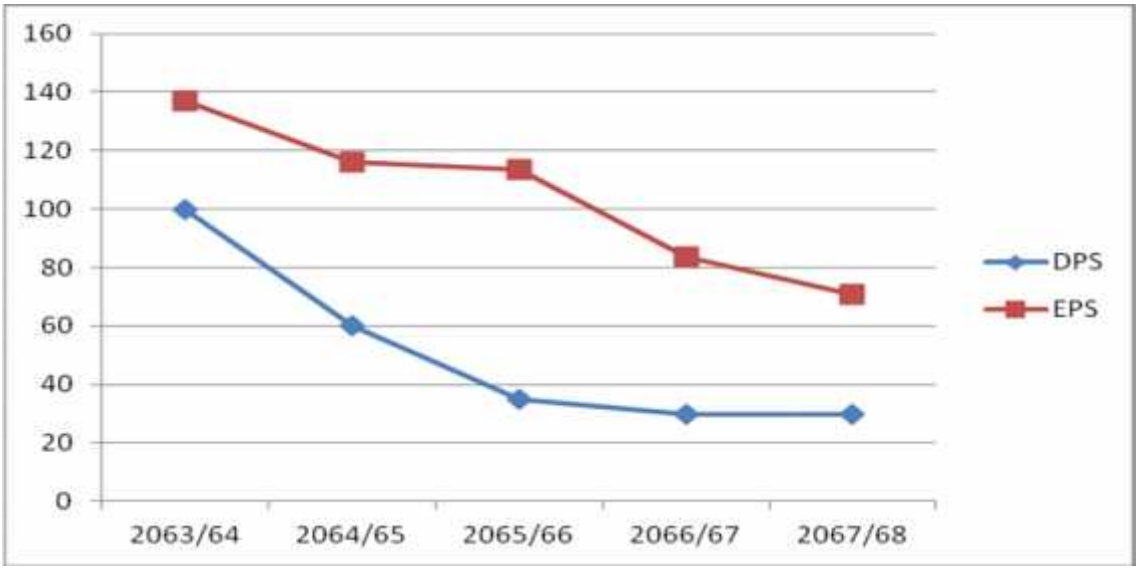
Year	Price	DPS	EPS	R
2062/63	2240	85	129.21	0
2063/64	5050	100	137.08	1.29911

2064/65	5275	60	115.86	0.05644
2065/66	4899	35	113.44	-0.0646
2066/67	2384	30	83.81	-0.5072
2067/68	1252	30	70.67	-0.4622
Source: NABIL, Annual Reports,Appendix-8.1			$\overline{R}$	0.06431
			SD	0.655
			CV	10.18

Above table shows the Price, DPS, EPS, realized rate of return and expected rate of return ($\overline{R}$), standard deviation (SD), and CV of the return for the NABIL. According to the table, expected rate of return for NABIL is 0.06428 percent whereas standard deviation for NABIL is 0.6112. Coefficient of this individual stock is 9.5083. Following Graph presents the trend lines for DPS and EPS of the company for the study periods.

Graph 4.7

DPS and EPS of NABIL



Above graph shows the DPS and EPS of the NABIL for five year periods. The company has distributed Rs 100 as dividend to its shareholders in fiscal year 063/64 the Graph is highest of all the dividends paid by the company. Likewise the dividends thereafter have been declining per year to level of Rs. 30 in the fiscal year 2067/68.

The EPS of the company are in fluctuating trend which started from Rs 137.08 in 2063/64 which decreased Rs. 115.86 in the year 2064/65, Rs.113.44 in 2065/66, Rs.83.81 in 2066/67 and to come down again to Rs.70.67 in 2067/68.

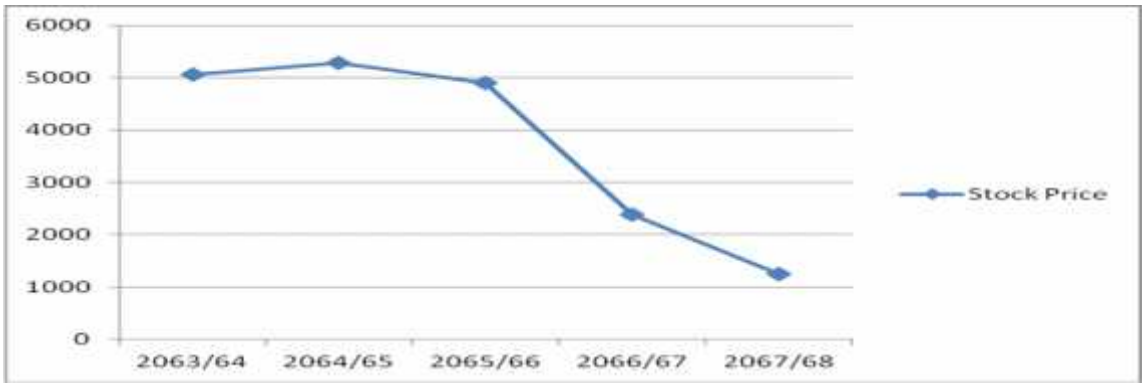
EPS of NABIL has decreasing trend but DPS has also smoothly decreased in the every fiscal year.

Findings: EPS and DPS of NABIL have decreased over the study period which is very risky for future.

Following Graph presents the stock price movements of the BPC for the given five years periods.

Graph 4.8

Price Movement of NABIL Stock



As per the Graph above the price movement of stock of NABIL is in decreasing trend which starts at Rs.5050 at the end of period 2063/64 but fiscal year 2064/65 has maintained Rs.5275 which is the highest stock price of NABIL and then after stock price have decreased over the study period. Stock price of NABIL has highly decreasing trend except the fiscal year 2064/65.

4.2.2 Analysis of Risk and Return for the Stocks of SCBNL

Following table presents the price, DPS, EPS and risk and return statistics for the SCBNL. The results thereof are analyzed and interpreted in the paragraph following the table.

Table 4.9

Risk and Return for SCBNL

Year	Price	DPS	EPS	R
2062/63	3775	130	175.84	0
2063/64	5900	80	167.37	0.58411
2064/65	6830	80	131.92	0.17119
2065/66	6010	50	109.99	-0.1127
2066/67	3279	55	77.65	-0.4453
2067/68	1800	50	69.51	-0.4358
			$\overline{R}$	-0.0477
			SD	0.3899
			CV	-8.174

Source:SCBNL,AnnualReports,Appendix-8.2

Above table shows the Price, DPS, EPS, realized rate of return and expected rate of return ($\overline{R}$), standard deviation (SD), and CV of the return for the SCBNL. According to the table, expected rate of return for SCBNL is -0.0477 whereas standard deviation for SCBNL is 0.3487. Coefficient variation of this individual stock is -7.3101.

Findings: EPS and DPS of SCBNL are in decreasing trend which is great challenge for the bank to overcome.

4.2.3 Analysis of Risk and Return for the Stocks of EBL

Following table presents the price, DPS, EPS and risk and return statistics for the EBL. The results thereof are analyzed and interpreted in the paragraph following the table.

Table 4.10

Risk and Return for EBL

Year	Price	DPS	EPS	R
2062/63	1379	25	62.78	0
2063/64	2430	10	78.42	0.769
2064/65	3132	20	91.82	0.297
2065/66	2455	30	99.99	-0.2065
2066/67	1630	30	100.16	-0.324
2067/68	1094	10	83.18	-0.323
			$\overline{R}$	0.0425
			SD	0.4295
			CV	10.10

Source:EBLAnnualReports,Appendix8.3

Above table shows the Price, DPS, EPS, realized rate of return and expected rate of return ($\overline{R}$), standard deviation (SD), and CV of the return for the EBL. According to the table, expected rate of return for EBL is 0.0425 whereas standard deviation for EBL is 0.397. Coefficient variation of this individual stock is 9.34118.

Findings: EPS and DPS of EBL are in mixture trend of increase & decrease which is good for the bank for its good will & its market price of stock as well.

4.2.4 Inter Company Comparison

Standard deviation (SD), expected return and coefficient of variations for both the companies are given in the table below:

Table 4.11

Comparative Risk and Return Position

Company	Standard Deviation (SD) (%)	Expected Return (%)	Coefficient of variation
NABIL	65.5	6.43	10.18
SCBNL	38.99	-4.77	-8.174
EBL	42.95	4.25	10.10

According the table NABIL has higher expected return than that of the SCBNL. Standard deviations for the stock of NABIL, SCBNL and EBL are 65.5, 38.99and 42.95percent respectively. Depending exclusively upon the expected return NABIL is the best alternative to invest in. However, if one looks for the asset that enables to minimize risk he/she must choose SCBNL as it has lower standard deviation of returns than that of another company. This is the conflicting result given by the two measures for expected return favors one while standard deviation favors another. Unlike standard deviation, CV provides relative measure of risk and paves the way to reach to the ideal decision. Observing CV of both the assets, lower CV is for the SCBNL so this the better stock to invest in as compared to the NABIL. Investors side, they should be preferred the NABIL because its expected return has higher than other banks. Standard deviation of NABIL is higher than SCBNL and EBL; therefore NABIL is more risky than others.

4.3 Portfolio Context

Individual assets graphed in the risk return space above will always be dominated by the portfolio because of its risk reducing effects of diversification. In this section how an investor can invest his fund analyzing the different portfolio on the basis of Risk & Return to minimize the risk will be discuss and we also try to find out the efficient portfolio among the all available alternatives.

It's always the investor's personal matter that how much amount he want to invest on which security? The following table presents the various alternatives to invest by sharing the total amount available. There are eleven different alternatives to which we give name of A to K and assumed them as portfolio option for the investor. Those portfolios that could be formed by investing certain proportion of fund in NABIL, SCBNL & EBL stocks are as follows.

Table 4.12

Probability to invest on the stocks of NABIL, SCBNL & EBL

Proportion	Portfolios										
	A	B	C	D	E	F	G	H	I	J	K
NABIL ***(N)***	0.1	0.2	0.3	0.4	0.5	0.0	0.5	0.4	0.3	0.2	0.1
SCBNL ***(S)***	0.0	0.3	0.4	0.2	0.3	0.5	0.4	0.3	0.5	0.7	0.9
EBL ***(E)***	0.9	0.5	0.3	0.4	0.2	0.5	0.1	0.3	0.2	0.1	0.0

Now from the all available portfolios we have to choose the best one & for which we took the help of Risk & Return Analysis. So in next step we calculate the Risk & Return of Portfolio then discuss the results.

Note*: In the above table; different alternatives with the probability of investing in security N, S & E with their proportion (weight) in total probability of one is assumed & expressed.*

Table 4.13

Risk and Return for Various Portfolios Risk

Portfolio	Risk(σ_p)	Return($\overline{Rp}$)
A	39.21	4.468
B	27.74	1.980
C	28.21	1.296
D	32.29	3.318
E	35.82	2.634
F	29	-0.260
G	36.53	1 .732
H	31.46	2.416
I	28.98	0.394
J	30.58	-1.628
K	35.69	-3.650

Source: Appendix-11,

Considering the Risk factor in the above table, alternative B & C are the best due to the lower risk of 25.55 & 25.93 respectively but in case of return; alternative A & D are better to invest due to their higher return. In this situation a risk avoider investor would like to choose the combination of B & C due to less risk but a risk taker investor will choose A & D due to the higher return.

4.3.1 Portfolio and Its Risk Reduction Effect

As it is found in finance literature that all the individual assets are dominated by the portfolios in terms of the risk and return, NABIL, SCBNL and EBL are also analyzed in this aspect to see the risk reduction effect of portfolio as compared to the risk and return of socks if held in isolation.

Table 4.14

Risk and Return of Portfolio and Individual Stocks

Assets	Risk (%)	Return (%)
Portfolios:		

A	39.21	4.468
B	27.74	1.980
C	28.21	1.296
D	32.29	3.318
E	35.82	2.634
F	29	-0.260
G	36.53	1 .732
H	31.46	2.416
I	28.98	0.394
J	30.58	-1.628
K	35.69	-3.650
Individual Stock:		
NABIL	65.5	6.43
SCBNL	38.99	-4.77
EBL	42.95	4.25

From the above table it is clear that portfolio always dominates the individual stock in terms of risk relative to its expected return. The socks have higher risk i.e. either 65.5% from NABIL or 38.99% from SCBNL & 42.95% from EBL. However the result by holding these assets in combination into the risk which is always lower than that result from holding these in isolation.

4.4 Analysis of Market Risk and Market Return

While analyzing the market return, we should take market index. In Nepalese context, NEPSE is the market index and it is employed to analyze the market movement of the securities. Secondary securities are traded in NEPSE and it is only one secondary market in Nepal. Table 4.15 shows the historical data relating to the fluctuation of Nepalese secondary market.

Table 4.15

NEPSE Index as an Indicator of Secondary Market Movement

SN	Year	NEPSE Index	Annual Market Return (%)
1	2063/64	683.95	76.81
2	2064/65	963.36	40.85

3	2065/66	749.10	-22.24
4	2066/67	477.73	-36.23
5	2067/68	362.85	-24.05
Expected Market Rate of Return, (Rm) in %			7.028
Standard Deviation on Market Return (σ_m) in %			0.493
Market Variance (σ_m^2) in %			0.2430

Source: Appendix-9

Above table shows the historical data relating market index. Based on the market index, expected rate of return on market and expected market risk are calculated. For further clarification.

Graph 4.9

Above graph demonstrates the fact that market return has increasing gradually during the study periods starting at 76.81 percent in the year 2063/64 to fall to 40.85 percent in 2064/65, to -22.24 percent in 2065/66 to -36.23 percent in 2066/67 and to -24.05 percent in 2067/68.

Findings: The resulting expected return and risk of the market comes to be 7.028 and 0.493 percent respectively.

4.5 Market Sensitivity Analysis

Market sensitivity of the given stock tells about the volatility of the stock's return in relation to the market return. Index of market sensitivity is called beta coefficient. Beta coefficients for each of the company is presented and analyzed in the section followed by this**.**

4.5.1 Beta Coefficient of NABIL, SCBNL and EBL

Beta coefficients of NABIL and SCBNL are the index to identify the systematic risk and this index is also an indicator to decide on whether the stock is defensive or aggressive. The beta coefficient of the companies under study is provided with the table below:

Table 4.16

Beta Coefficient for the companies

Companies	NABIL	SCBNL	EBL
Beta	0.40	0.68	0.77
Rank	I	II	III

Source : Appendix-10.1,10.2,10.3

In order to know the market sensitivity of companies, beta coefficients have been calculated and presented on table 4.8. As presented in the table, beta coefficients for NABIL is 0.050; SCBNL is 0.852 and that EBL is 0.966 and these are termed as defensive stocks as these three have betas less than that of the market. Meaning that combination of these stocks in the market portfolio would be beneficial and can reduce the risk of such portfolio significantly.

Findings: Stock of NABIL is more defensive than the stock of SCBNL and EBL and power to reduce risk of average portfolio is more in the stock of NABIL as compared to that of the SCBNL and EBL as the beat coefficient of NABIL is smaller than the beta of the SCBNL and EBL i.e. 0.966 is greater than 0.50 and 0.852

4.6 Capital Assets Pricing Model and Price Evaluation

Major implication of beta coefficient is in CAPM. It is the model which gives the required rates of return of common stock. Required rate of return is risk free rate plus risk premium. Comparison of required rate of return (RRR) and expected rate of return ($\overline{R}$) helps determining whether the stock is overpriced or under priced.

Table 4.17

Required Return, Expected Return and price situation

Companies	Beta	RRR= $Rf * \Gamma(Rm ** Z Rf)bi$	$\overline{R}$	Price situation	Decision
NABIL	0.50	5.764	6.43	Under priced	BUY
SCBNL	0.85	6.6488	-4.77	Over priced	SELL
EBL	0.97	6.9522	4.25	Over priced	SELL

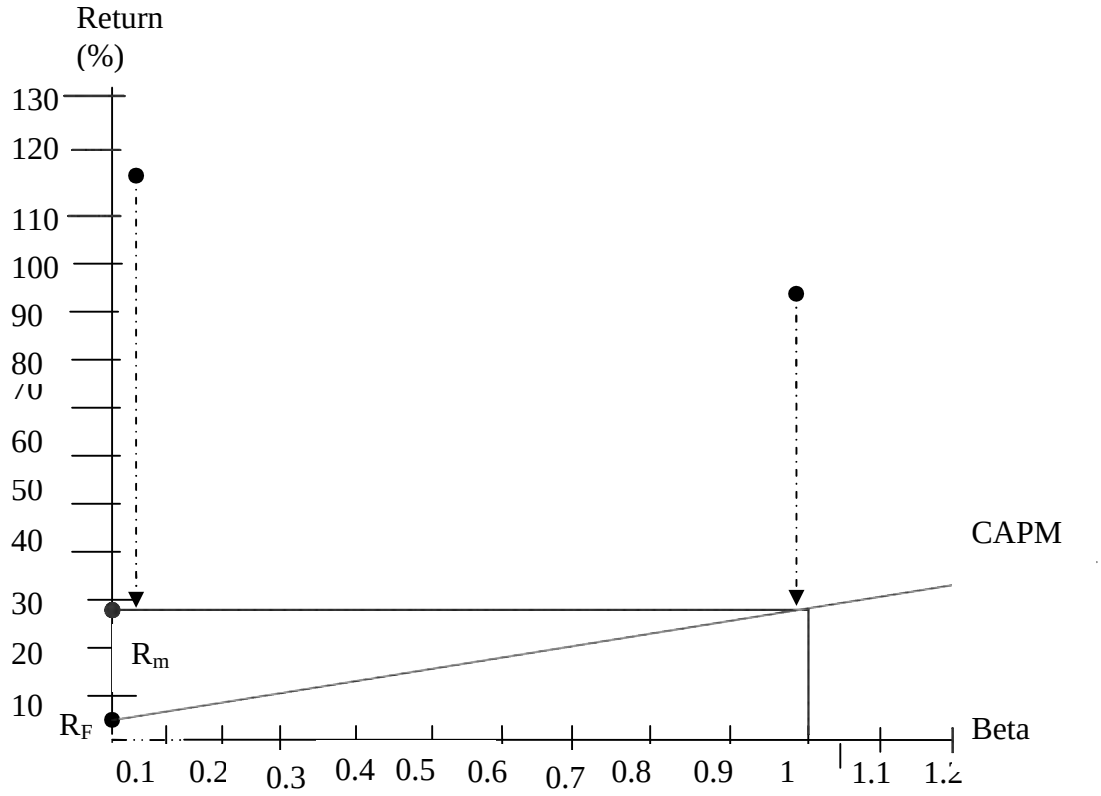
**denotes the assumed figure of 4.5%*

*** denotes the expected market return of 7.028%*

Graph 4.7 presents the capital assets pricing model (CAPM), which graphically depicts the price situation and adjustments. As per the figure, the stock of NABIL is under priced as their expected rates of returns are much higher than the required rates of return but just opposite the stocks of SCBNL and EBL are overpriced as their expected rates of returns are smaller than the required rate of return. Putting on the other way, the expected returns for NABIL the stocks are higher than these require for the systematic risks they bear. Required rates of returns are 5.764, 6.6488 and 6.9522 percent for NABIL, SCBNL and EBL respectively.

Graph 4.10

Capital Assets Pricing Model and Price Situation



As shown in the Graph expected return for NABIL and SCBNL are above than the CAPM for their respective level of betas. So they are under priced stocks. For these kinds of stocks to reach to its equilibrium level, the expected return must fall to the level of CAPM line in the direction as shown in the figure by dotted lines. This process is attained through the economic process of demand and supply.

Findings: According to general rule regarding buy and sell, under priced stocks, i.e. NABIL and SCBNL are to be purchased as returns for these stocks are much higher than the required as per the CAPM model.

4.7 Systematic and unsystematic Risk

Systematic risk, synonymously the market risk which is aroused due to the external environmental forces and unsystematic risk- the risk that is caused by the internal factors of the company are presented in detail in the table 4.10. Making investment decision relying exclusively on the total risk may lead to faulty decision so investors must care about the undiversifiable risk which can be diversified by way of portfolio at no cost. In this context, table below presents the systematic and unsystematic of the three assets under consideration.

Table 4.18

Systematic and Unsystematic Risk

Company	Total risk as measured by variance	Systematic risk	Unsystematic risk	Portion in %	
				Systematic	unsystematic
NABIL	0.655	0.1971	0.4579	30.09	69.91
SCBNL	0.3899	0.3354	0.0545	86.02	13.98
EBL	0.4295	0.3805	0.049	88.59	11.41

Source: Appendix-10.1, 10.2, 10.3

According to the table NABIL has 30.09 percent systematic risk and the rest 69.91 percent risk of the company is accounted for unsystematic risk. In comparison SCBNL and EBL have more systematic risk than the EBL but the unsystematic risk is lower. As the systematic risk is undiversified, SCBNL and EBL seem to work harder on it. Due to lower systematic risk, NABIL performance is appreciable.

CHAPTER - V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The development of any country largely depends upon its economic development. Economic development demands transformation of savings or resources into the actual investment. Capital formation is the prerequisite in setting the overall pace of the economic development of a country. It is the financial institution that transfers funds from surplus spending units to deficit units.

Banking sector plays a vital role for the country's economic development. Bank is a resource mobilizing institution, which aspect deposits from various sources, and invests such accumulated resources in the fields of agriculture, trade, commerce, industry, tourism etc. Banks help to mobilize the small saving collectively to huge capital markets. Commercial banks basically help to promote the money market by providing expert managerial skills and by using advanced and often state of the art technologies to serve the customers in an efficient and effective manner.

Among other banking operations, investment operation of commercial banks is very risky one. It is the most important factor from the view point of depositors, shareholders and bank management. For this, commercial banks have to pay due consideration while formulating Investment Policy under profitability analysis. A healthy development of any commercial bank depends upon its investment policy under profitability analysis. A rational investment policy attracts both borrowers and lenders, which helps to increase the volume and quality of deposits, loans and investment.

The major source of income of a bank is interest income from loans and investments and fee based income. As loan and advances dominate the asset side of the balance sheet of any bank; similarly earnings from however, it is very important to be reminded that most of the bank's failures in the world are due to the shrinkage in the value of loans and advances. Hence, loan is known as risky assets and investment operation of commercial banks is very risk of non repayment of loan is known as

credit risk of default risk. Performing loans have multiple benefits to the society by helping for the growth of economy while non performing loans erode even existing capital. Considering the importance of lending to the individual banks and also to the society it serve, it is imperative that the bank meticulously plans its credit operations.

Now-a-days, many commercial banks are rapidly opened in Nepal as commercial banks with higher technology and efficient methods in banking sector especially after the political reform of the country. At present, 32 commercial banks are operating in Nepal. But in this study, only three commercial banks has been undertaken i.e. NABIL Bank Ltd., Everest Bank Ltd., and Standard Chartered Bank Nepal Ltd. This study has been completed on the basis of secondary data.

Periodical review and analysis of financial aspects of the banks are very necessary to see the clear financial pictures; investment policy of Nepalese commercial banks in Nepal i.e. NABIL, EBL, SCBNL has been carried out to fulfill this requirement.

Studied of selected banks are introduced. Problems are stated to set the objectives of the study. The objectives are to evaluate the investment policy of NABIL, EBL, SCBNL banks and to identity their strengths and weaknesses. Theoretical framework of ratio analysis, correlation between two variables, its importance and limitations, research methodology and limitations of the study are mentioned.

The findings of profitability ratios are presented on a comparative basis. Besides, statistical analysis i.e. mean, standard deviation, coefficient of variance of all ratios of the selected banks. This analysis gives clear picture of the performance of the bank with regard to its investment operation. All of the information and data are collected from related banks i.e. websites, annual reports.

The operating efficiencies of the selected banks and their abilities to ensure adequate returns to the shareholders have been measured.

5.2 Conclusions

On the basis of entire research study some conclusions have been deduced. This study particularly deals about the financial position of commercial banks in Nepal. The present study is mainly an attempt to give account of comparative study about commercial banks in different aspects such as profitability position, and market position and other related ratios and indicators of the basis of financial statement.

After conducting the analysis of NABIL, EBL & SCBNL, covering the study period of 2063/64 to 2067/68, the following conclusions can be drawn from the study:

- NABIL has come out with comparatively better operating efficiency and ability to ensure adequate returns to its shareholders.
- In profitability, NABIL has bested than EBL and SCBNL.
- SCBNL has emerged as having a large volume of banking operations, mainly its deposits and lending in the light of its greater deposits and greater credits compared to NABIL.
- The return on loans and advances ratio of the banks is fluctuating over the study period. To make bank's profitability and return from loans and advances is satisfactory; the banks should really make an effort in loans and advances efficiently to generate adequate level of return.
- The mean of return on total deposit ratio of SCBNL is the highest i.e. 2.90 than that of two other banks i.e. NABIL and EBL. To make bank's profitability and return from total deposit is satisfactory; the banks should really make an effort in total deposit, its collect efficiently to generate adequate level of return.
- The return on investment ratio of the EBL is fluctuating over the study period. The return on investment ratio of the NABIL is rapidly increased and thereafter smoothly decreased but SCBNL is just opposite of NABIL.
- The earnings per share of the banks is increasing trend over the study period. The highest earning per share of NABIL, EBL and SCBNL are 137.08, 100.16 and 167.37 respectively.
- It's always the investor's personal choice that how much amount he want to invest on which security but investment on individual security will always be dominated by the portfolio because of risk reducing effects of diversification, which is cleared by the calculation of Portfolio Risk & Return.

- Systematic risks of NABIL, SCBNL & EBL are 0.1971, 0.3354, & 0.3805 respectively. As we know that Systematic risk cannot be diversify even creating portfolio because it is occurred due to the external factors, like market. So, EBL is less risky than rest of two banks due to its lowest Systematic risk of 0.1971.
- Unsystematic risk can be control & decrease as well by the better management & using various effective measures for it. EBL have the lowest Unsystematic risk among all three Banks, so NABIL & SCBNL are suggested to work on it to control & diversify the Unsystematic risk

5.3 Recommendations

On the basis of major finding of the study, some important recommendations have been forwarded. Although these banks have more than 12 years of commercial experiences in the Nepalese commercial banking sector, with a competent managerial team, some weaknesses have come into light through the study. The sampled banks may use it as a remedial measure. The recommendations have been the following.

i) The banks, especially the SCBNL and EBL has to maintain adequate cash & bank balance to total deposits ratio, as prescribed by NRB, which is 5% of total deposits.

ii) EBL is suggested to improve its profitability position, and to improve its overall efficiency and returns to its shareholders.

iii) Although the loans and advances to total deposit ratio of the banks is fluctuating over the study period, banks performance have been good so don't lose the level.

iv) EBL is suggested to improve its deposits and credits to increase its volume of banking operations.

vi) Banks are suggested to review their overall capital structures and investment portfolios to make better mix in capital structure as well as investment portfolio.

vi) Banks should finance superior quality of assets for greater profits, especially for SCBNL.

vii) The studied banks are suggested to invest in deprived sector as directed by NRB in order to contribute to the overall development of the country.

viii) The banks should maintain positive relationship between loans and advances and deposits in coming years also, to maximize benefits.

ix) This Research would like to suggest the Nepalese investors to invest their fund only after performing multiple analysis of stock they are going to invest. They should mainly focus on Risk & Return factor while making investment rather than the so called rumors & only some factors like market price per share, goodwill & image.

x) Investors are highly recommended to invest their funds considering the portfolio rather on the individual security to minimize their risk because the benefit of risk reducing effects of diversification a portfolio always carries on.

xi) Since the last decade economy of the country has become weaker, the studied banks are advised to concentrate on the effective management & moreover on risk free securities and low risk loans.

xii) Last, but not the least the banks should keep in peace with the changing banking technologies, improve organizational structure, provide quality services to its customers and actively participate in social welfare programs. Organizational culture that acquires, develops, utilizes and maintains the employees in a high morale is preferred. & Analysis of Risk & Return must be considered by using modern and scientific techniques, accounting system & methods to achieve the predetermined objectives of the investors. & there is no doubt that a person who ignores the role of Risk & Return analysis ultimately declines from today's unpredictable market.

BIBLIOGRAPHY

Ahuja, B.N., (1994), ***Financial Management***, New Delhi, Academic's Dictionary of Management, 2nd Edition.

Bajracharya, B.C. (2001) ***Business Statistics & Mathematics*** Kathmandu M.K. Publishers & Distributors.

Garhwal S. (1993), ***Commercial Banking and Economic Development***, Jaipur, Pointer Publishers.

Gulsan S.S and K.K Gulsan (1994); ***Banking Law and Practice***, New Delhi, S Chand and Company Ltd.

Gupta S.C (1992); ***Fundamental of Statistics***, New Delhi, Himalayan Publishing House.

James, C.V and Horne, (2000), ***Financial Management Text and Problem***, New Delhi, Tara Mc Graw Hill Publishing Co. Ltd., 2nd Edition.

Khan, M.Y and P.K. Jain (1997), ***Financial Management***, New Delhi, Tara Mc Graw Hill Publishing Co. Ltd., 2nd Edition.

Khatiwada Yuba Raj (1994), ***Some Aspects of Monetary Policy in Nepal***, New Delhi, South Asian Publishers Pvt. Ltd.

Kothari, C.R. (1989) ***Research Methodology Methods & Techniques*** New Delhi; Willey Easterly Ltd.

Metcalf, R.W. and P.L. Titard, (1995), ***Financial Management***, ***Principle of Accounting***, Philadelphia, W.B. Saunder.

Munakarmi S.P. (2059); ***Management Accounting***, Kathmandu, Buddha Academy Publishers.

Pandey, I.M. (1996), ***Financial Management***, New Delhi, Vikash Publishing House Pvt. Ltd., 6th Revised Edition.

Sayers R.S. (1967), ***Modern Banking***, India, Oxford Cearendon Press.

Shrestha K.N and K.D. Manandhar (1999); ***Statistics and Quantitative Techniques for Management***, Kathmandu, Valley Publishers.

Shrestha, M.K. (2047) ***Commercial Banks Comparative Performance Evaluation***, Kathmandu; Karmachari Sanchya Kosh.

Vaidya, Shakespeare (1999), ***Banking Management***, Kathmandu, Monitor Nepal

Vaish M.C. (996), ***Money, Banking, Trade and Public Finance***, New Delhi, Wiley Eastern Limited.

Varsheny P.N. (1993); ***Banking Law and Practices***, New Delhi, Sultan Chand and Sons.

Wolf Horald K. and Prem Raj Pant (1999); ***A Handbook of Social Science Research and Thesis Writing***, Kathmandu, Buddha Academic Enterprises Pvt. Ltd.

Others:

- ***Annual Reports of EBL***.
- ***Annual Reports of NABIL***.
- ***Annual Reports of SCBNL***
- ***Banking & Financial Statistical***, (2011)
- ***NRB Directives***, (2068)

Websites:

www.everestbankltd.com

www.nabilbank.com

www.standardchartered.com/np

www.nepalstock.com.

www.nrb.org.np

APPENDIX

Appendix-1 : Return on Loan and Advances

Fiscal year	Selected Banks			dNA = (x-Mean)	dNA^2	dSC = (x-Mean)	dSC^2	dEBL = (x-Mean)	$dEBL^2$
	NABIL	SCBNL	EBL						
2063/64	4.62	6.75	2.1	0.66	0.4356	-0.1	0.01	-0.5	0.2500
2064/65	3.96	6.24	2.4	0	0	-0.61	0.3721	-0.2	0.0400
2065/66	4.02	7.93	2.61	0.06	0.0036	1.08	1.1664	0.01	0.0001
2066/67	3.47	6.91	2.95	-0.49	0.2401	0.06	0.0036	0.35	0.1225
2067/68	3.73	6.41	2.94	-0.23	0.0529	-0.44	0.1936	0.34	0.1156
Mean ($\bar{X}$)	3.96	6.848	2.6	Total	0.7322		1.7457		0.5282
S.D.	0.383	0.591	0.325						
C.V. (%)	9.6717	8.6303	12.500						

$$\bar{R}_N = \frac{\sum \phi R_N}{n} = 3.96,$$

$$\text{Standard Deviation } (\sigma_m) = \sqrt{\frac{\sum \phi (R_N - \bar{R}_N)^2}{n-1}} = 0.383$$

$$CV = \frac{\sum \sigma_N}{\bar{R}_N} = \frac{0.383}{3.96} = 0.096717$$

Note: In this research, standard deviation, coefficient of variation & Return of necessary banks in require stages are calculate by using same formula & process.

Appendix-2 : Return on Total Deposit

Fiscal year	Selected Banks			dNA = (x-Mean)	dNA^2	dSC = (x-Mean)	dSC^2	dEBL = (x-Mean)	$dEBL^2$
	NABIL	SCBNL	EBL						
2063/64	2.89	2.81	1.63	0.26	0.0676	-0.09	0.0081	-0.36	0.1296
2064/65	2.34	2.75	1.88	-0.29	0.0841	-0.15	0.0225	-0.11	0.0121
2065/66	2.76	2.9	1.92	0.13	0.0169	0	0	-0.07	0.0049
2066/67	2.45	3.09	2.25	-0.18	0.0324	0.19	0.0361	0.26	0.0676
2067/68	2.69	2.95	2.26	0.06	0.0036	0.05	0.0025	0.27	0.0729
Mean ($\bar{X}$)	2.626	2.9	1.988		0.2046		0.0692		0.2871
S.D.	0.202	0.118	0.24						
C.V. (%)	7.6923	4.0690	12.0724						

Note: Return, standard deviation and coefficient of variation are calculated same as appendix-1.

Appendix-3 : Return on Total Assets

Fiscal year	Selected Banks			dNA = (x-Mean)	dNA^2	dSC = (x-Mean)	dSC^2	dEBL = (x-Mean)	$dEBL^2$
	NABIL	SCBNL	EBL						
2063/64	2.72	2.42	1.38	0.16	0.0256	-0.12	0.0144	-0.41	0.1681
2064/65	2.32	2.46	1.63	-0.24	0.0576	-0.08	0.0064	-0.16	0.0256
2065/66	2.55	2.56	1.73	-0.01	0.0001	0.02	0.0004	-0.06	0.0036
2066/67	2.77	2.7	2.09	0.21	0.0441	0.16	0.0256	0.3	0.0900
2067/68	2.43	2.55	2.1	-0.13	0.0169	0.01	1E-04	0.31	0.0961
Mean (X)	2.558	2.538	1.786		0.1443		0.0469		0.3834
S.D.	0.17	0.097	0.277						
C.V. (%)	6.6458	3.8219	15.5095						

Note: Return, standard deviation and coefficient of variation are calculated same as appendix-1.

Appendix-4 : Return on Shareholder's Equity

Fiscal year	Selected Banks			dNA = (x-Mean)	dNA^2	dSC = (x-Mean)	dSC^2	dEBL = (x-Mean)	$dEBL^2$
	NABIL	SCBNL	EBL						
2063/64	14.76	32.68	19.57	-21.03	442.2609	0.33	0.1089	-3.98	15.8404
2064/65	19.46	32.85	21.36	-16.33	266.6689	0.5	0.25	-2.19	4.7961
2065/66	32.94	33.58	24.36	-2.85	8.1225	1.23	1.5129	0.81	0.6561
2066/67	46.74	32.22	26.25	10.95	119.9025	-0.13	0.0169	2.7	7.2900
2067/68	65.03	30.43	26.2	29.24	854.9776	-1.92	3.6864	2.65	7.0225
Mean (X)	35.786	32.352	23.548		1691.932		5.5751		35.6051
S.D.	18.395	1.056	2.669						
C.V. (%)	51.4028	3.2641	11.3343						

Note: Return, standard deviation and coefficient of variation are calculated same as appendix-1.

Appendix-5 : Return on Investment

Fiscal year	Selected Banks								
	NABIL	SCBNL	EBL	dNA = (x-Mean)	dNA^2	dSC = (x-Mean)	dSC^2	dEBL = (x-Mean)	$dEBL^2$
2063/64	7.53	5.1	5.95	-1.09	1.1881	-0.5	0.25	-4.9	24.0100
2064/65	7.51	5.89	8.91	-1.11	1.2321	0.29	0.0841	-1.94	3.7636
2065/66	9.52	5.07	10.74	0.9	0.81	-0.53	0.2809	-0.11	0.0121
2066/67	8.31	5.47	16.61	-0.31	0.0961	-0.13	0.0169	5.76	33.1776
2067/68	10.23	6.48	12.03	1.61	2.5921	0.88	0.7744	1.18	1.3924
Mean (X)	8.62	5.602	10.848		5.9184		1.4063		62.3557
S.D.	1.088	0.53	3.531						
C.V. (%)	12.6218	9.4609	32.5498						

Note: Return, standard deviation and coefficient of variation are calculated same as appendix-1.

Appendix-6 : Return on Earning per share

Fiscal year	Selected Banks								
	NABIL	SCBNL	EBL	dNA = (x-Mean)	dNA^2	dSC = (x-Mean)	dSC^2	dEBL = (x-Mean)	$dEBL^2$
2063/64	137.08	167.37	78.42	32.91	1083.0681	56.08	3144.9664	-12.294	151.1424
2064/65	115.86	131.92	91.82	11.69	136.6561	20.63	425.5969	1.106	1.2232
2065/66	113.44	109.99	99.99	9.27	85.9329	-1.3	1.69	9.276	86.0442
2066/67	83.81	77.65	100.16	-20.36	414.5296	-33.64	1131.6496	9.446	89.2269
2067/68	70.67	69.51	83.18	-33.5	1122.25	-41.78	1745.5684	-7.534	56.7612
Mean (X)	104.172	111.288	90.714		2842.4367		6449.4713		384.3979
S.D.	23.843	35.915	8.768						
C.V. (%)	22.8881	32.2721	9.6655						

Note: Return, standard deviation and coefficient of variation are calculated same as appendix-1.

Appendix-7 : Return on Dividend per share

Fiscal year	Selected Banks			dNA = (x-Mean)	dNA^2	dSC = (x - Mean)	dSC^2	dEBL = (x-Mean)	$dEBL^2$
	NABIL	SCBNL	EBL						
2063/64	100	80	10	49	2401	17	289	-18	324
2064/65	60	80	20	9	81	17	289	-8	64
2065/66	35	50	30	-16	256	-13	169	2	4
2066/67	30	55	30	-21	441	-8	64	2	4
2067/68	30	50	50	-21	441	-13	169	22	484
Mean (X)	51	63	28		3620		980		880
S.D.	26.907	14	13.266						
C.V. (%)	52.7588	22.2222	47.38						

Note: Return, standard deviation and coefficient of variation are calculated same as appendix-1.

Appendix-8.1: Risk and Return for NABIL

Year	Price	DPS	EPS	R	R - $\overline{R}$	(R - $\overline{R}$)^2
2062/63	2240	85	129.21	0		0
2063/64	5050	100	137.08	1.29911	1.234827143	1.5248
2064/65	5275	60	115.86	0.05644	-0.007844356	0.00006153
2065/66	4899	35	113.44	-0.0646	-0.12892455	0.0166
2066/67	2384	30	83.81	-0.5072	-0.571526377	0.3266
2067/68	1252	30	70.67	-0.4622	-0.526528322	0.2772
			Total	0.32155		2.14526
			$\overline{R}$	0.06431		
			SD	0.655		
			CV	10.18		

$$R = \frac{Dividend + (Endingprice - Beginingprice)}{Beginingprice}$$

$$\overline{R} = \frac{R}{N} = 0.06431$$

$$SD (\pm) = \sqrt{\frac{\sum (R - \overline{R})^2}{N}} = \sqrt{\frac{2.14526}{5}} = 0.655$$

$$CV = \frac{\pm}{\overline{R}} = 10.18$$

Appendix-8.2 : Risk and Return for SCBNL

Year	Price	DPS	EPS	R	R - $\overline{R}$	(R - $\overline{R}$)^2
2062/63	3775	130	175.84	0		0
2063/64	5900	80	167.37	0.58411	0.632	0.3992
2064/65	6830	80	131.92	0.17119	0.219	0.0479
2065/66	6010	50	109.99	-0.1127	-0.065	0.0042
2066/67	3279	55	77.65	-0.4453	-0.398	0.1580
2067/68	1800	50	69.51	-0.4358	-0.388	0.1506
			$\overline{R}$	-0.0477	0.000	0.760
			SD	0.3899		
			CV	-8.174		

Note: Return, standard deviation and coefficient of variation are calculated same as appendix-8.1.

Appendix-8.3 : Risk and Return for EBL

Year	Price	DPS	EPS	R	R - $\overline{R}$	(R - $\overline{R}$)^2
2062/63	1379	25	62.78	0		0
2063/64	2430	10	78.42	0.769	0.7265	0.52780225
2064/65	3132	20	91.82	0.297	0.2545	0.06477025
2065/66	2455	30	99.99	-0.2065	-0.249	0.062001
2066/67	1630	30	100.16	-0.324	-0.3665	0.13432225
2067/68	1094	10	83.18	-0.323	-0.3655	0.13359025
			$\overline{R}$	0.0425	0.000	0.9225
			SD	0.4295		
			CV	10.10		

Note: Return, standard deviation and coefficient of variation are calculated same as appendix-8.1.

Appendix-9 : Risk and Return for NEPSE Index

Year	NEPSE Index	R_M (%)	$R_M - \bar{R}_M$	$(R_M - \bar{R}_M)^2$
2063/64	683.95	76.81	0.6978	0.4869248
2064/65	963.36	40.85	0.3382	0.1143792
2065/66	749.10	-22.24	-0.2927	0.0856733
2066/67	477.73	-36.23	-0.4326	0.1871428
2067/68	362.85	-24.05	-0.3107	0.0965345
	Total	35.14		0.9706546

$\bar{R}_M = \frac{\sum R_M}{n} = 7.028$

Standard Deviation (σ_m) = $\sqrt{\frac{\sum (R_M - \bar{R}_M)^2}{n-1}} = 0.493$

CV = $\frac{\sigma_M}{\bar{R}_M} = \frac{0.493}{7.028} = 0.0701$

$\sigma_m^2 = 0.493^2 = 0.2430$

Appendix-10.1 : Calculation of Beta Coefficient of Nabil Bank Ltd.

Year	A $(R_N - \bar{R}_N)$	B $(R_M - \bar{R}_M)$	A | B
2063/64	1.2348	0.6978	0.86164344
2064/65	-0.0078	0.3382	-0.00263796
2065/66	-0.1289	-0.2927	0.03772903
2066/67	0.5715	-0.4326	-0.2472309
2067/68	0.5265	-0.3107	-0.16358355
	Total		0.48592006

COV $(R_N, R_M) = \frac{(A \mid B)}{N} = \frac{0.48592}{5} = 0.09718$

$\beta = \frac{COV (R_N, R_M)}{\sigma_M^2} = \frac{0.09718}{0.2427} = 0.400$

$P_{NM} = \frac{COV (R_N, R_M)}{\sigma_N \sigma_M} = \frac{0.400}{(0.655 \mid 0.493)} = 0.30096$

Systematic Risk of Nabil = $\sigma_N \mid P_{NM} = 0.655 \mid 0.30096 = 0.1971$

Unsystematic Risk of Nabil = $\sigma_N \mid (1 - P_{NM}) = 0.655 \mid (1 - 0.30096) = 0.4579$

Appendix-10.2 : Calculation of Beta Coefficient of SCBNL.

Year	A ($R_S - \overline{R}_S$)	B ($R_M - \overline{R}_M$)	A | B
2063/64	0.632	0.6978	0.4410096
2064/65	0.219	0.3382	0.0740658
2065/66	-0.065	-0.2927	0.0190255
2066/67	-0.398	-0.4326	0.1721748
2067/68	-0.388	-0.3107	0.1205516
	Total		0.8268273

$COV(R_S,R_M) = \frac{(A \mid B)}{N} = \frac{0.8268273}{5} = 0.16537$

$\beta = \frac{COV(R_S,R_M)}{\sigma_M^2} = \frac{0.16537}{0.2427} = 0.681$

$P_{SM} = \frac{COV(R_S,R_M)}{\sigma_S \sigma_M} = \frac{0.681}{(0.3899 \mid 0.493)} = 0.8603$

Systematic Risk of SCBNL = $\sigma_S \mid P_{SM} = 0.3899 \mid 0.8603 = 0.3354$

Unsystematic Risk of SCBNL = $\sigma_S \mid (1 - P_{SM}) = 0.3899 \mid (1 - 0.8603) = 0.0545$

Appendix-10.3: Calculation of Beta Coefficient of EBL.

Year	A ($R_E - \overline{R}_E$)	B ($R_M - \overline{R}_M$)	A | B
2063/64	0.7265	0.6978	0.5069517
2064/65	0.2545	0.3382	0.0860719
2065/66	-0.249	-0.2927	0.0728823
2066/67	-0.3665	-0.4326	0.1585479
2067/68	-0.3655	-0.3107	0.11356085
	Total		0.93801465

$COV(R_E,R_M) = \frac{(A \mid B)}{N} = \frac{0.93801456}{5} = 0.1876$

$\beta = \frac{COV(R_E,R_M)}{\sigma_M^2} = \frac{0.1876}{0.2427} = 0.77$

$P_{EM} = \frac{COV(R_E,R_M)}{\sigma_E \sigma_M} = \frac{0.1876}{(0.4295 \mid 0.493)} = 0.8860$

Systematic Risk of EBL = $\sigma_E \mid P_{EM} = 0.4295 \mid 0.8860 = 0.3805$

Unsystematic Risk of EBL = $\sigma_E \mid (1 - P_{EM}) = 0.4295 \mid (1 - 0.8860) = 0.049$

Appendix-11 : Portfolios from the stocks NABIL, SCBNL and EBL

Proportion	Portfolios										
	A	B	C	D	E	F	G	H	I	J	k
N	0.1	0.2	0.3	0.4	0.5	0.0	0.5	0.4	0.3	0.2	0.1
S	0.0	0.3	0.4	0.2	0.3	0.5	0.4	0.3	0.5	0.7	0.9
E	0.9	0.5	0.3	0.4	0.2	0.5	0.1	0.3	0.2	0.1	0.0

We have,

Cov (i,j) = $\frac{\sum (X - \overline{X})(Y - \overline{Y})}{N}$

NABIL	SCBNL	$(X - \overline{X})(Y - \overline{Y})$	SCBNL	EBL	$(X - \overline{X})(Y - \overline{Y})$	NABIL	EBL	$(X - \overline{X})(Y - \overline{Y})$
1.235	0.632	0.780	0.632	0.727	0.459	1.235	0.727	0.897
-0.008	0.219	-0.002	0.219	0.255	0.056	-0.008	0.255	-0.002
-0.129	-0.065	0.008	-0.065	-0.249	0.016	-0.129	-0.249	0.032
-0.572	-0.398	0.227	-0.398	-0.367	0.146	-0.572	-0.367	0.209
-0.527	-0.388	0.204	-0.388	-0.366	0.142	-0.527	-0.366	0.192
TOTAL		**1.218833**			**0.81875**			**1.329118**

NOW,

COV (N, S) = $\frac{1.218833}{5}$ = 0.24377

COV (S, E) = 0.16375

COV (N, E) = 0.26582

Calculation of Risk and Return for Various Portfolios

Here ,

σ_N = 0.655; σ_S = 0.3899 ,σ_E = 0.4295

Risk(σ_A)= $\sqrt{WN^2 \pm N^2 \Gamma WS^2 \pm S^2 \Gamma WE^2 \Gamma \pm E^2 \Gamma 2 \mid WN \mid WS \mid COVNS \Gamma 2 \mid WS \mid WE \mid COVSE \Gamma 2 \mid WN \mid WE \mid COVNE}$

= $\sqrt{0.01*4290.25 + 0 + 0.81*1844.7 + 2*0.1*0*0.24377 + 2*0*0.9*0.16375 + 2*0.1*0.9*0.26582}$

= 39.21

Return ($\overline{R}$ A) = W_N | $\overline{R}_N$ + W_S | $\overline{R}_S$ + W_E | $\overline{R}_E$

= 0.1 | 6.43 + 0 | (- 4.77) + 0.9 | 4.25 = 4.468

Note: Risk & Return for rest of portfolios are also calculated by using same formula & process.

Appendix-12: Financial Data of Concern Banks for the Selected Study Period.

Five years financial position of NABIL Bank ('000)

Year	2063/64	2064/65	2065/66	2066/67	2067/68
Assets					
Cash balance	270407	511427	674395	635987	744592
bank balance	1593051	4112057	3251005	3882256	4104469
Money at call and short Notice	563533	1952361	552888	3118144	2452512
Investments	8945211	9939771	10826379	13703024	13081206
Loans, advances and bills purchased	15545779	21365053	27589933	32268873	38034098
Fixed assets	386895	598059	660989	779540	975089
Other assets	512050	606392	864697	882004	1201984
Total	27253393	37132759	43867398	52151684	58141438
Capital and liabilities					
Share capital	491654	689216	1448621	2028774	2029769
Reserve funds	1565395	1747983	1681620	1807933	2536748
Debenture & bonds	-	240000	300000	300000	300000
Borrowings	882573	1360000	1681305	74900	1650599
Deposits	23342285	31915047	67348256	46340701	49696113
Bills payable	83515	238422	463139	425444	415768
Proposed dividend	509418	437373	338011	434737	608931
Tax liabilities	-	38777	80232	24904	44104
Other liabilities	378553	465941	526214	644291	859406
Total	27253393	37132759	43867398	52151684	58141438

Source: Nabil Annual Report,

Five years financial position of SCBNL ('000)

Year	2063/64	2064/65	2065/66	2066/67	2067/68
Assets					
Cash and bank balance	2021021	2050243	3137164	1929307	2975795
Money at call and short Notice	1761152	2197538	2055549	1669460	4280888
Investments	13553233	13902819	20236121	19847511	17258682
Loans, advances and bills purchased	10502637	13718597	13679757	15956955	18427270
Fixed assets	125591	117272	137293	118540	106071
Other assets	633055	1349319	820687	691547	761812
Total	285596689	33335788	40066570	40213320	43810520
Capital and liabilities					
Share capital	413255	620784	931966	1398484	1610168
Reserve funds	991746	1178084	1415025	1731489	2023202
Debenture & bonds					
Deposits	24647021	29743999	35350824	35182721	37999242
Borrowings and Bills payable	400000	-	300000	-	350000
Proposed dividend	206627	310392	465983	209773	-
Tax liabilities	-	-	-	-	-
Other liabilities	1433315	1099242	163277	1660889	1783500
Total	285596689	33335788	40066570	40213320	43810520

Source: SCBNL Annual Report,

Five years financial position of EBL ('000')

Year	2063/64	2064/65	2065/66	2066/67	2067/68
Assets					
Cash balance	534997	822989	944696	1091500	1048999
bank balance	1856422	1843029	4907676	6322716	5073863
Money at call and short Notice	-	346000	-	-	-
Investments	4984315	5061200	5948480	5008307	7743928
Loans, advances and bills purchased	13664082	18339400	23884673	27556356	31057691
Fixed assets	170097	360510	427157	463094	460259
Other assets	222660	376215	492166	536188	851471
Total	21432573	27149343	36604848	40978161	46236211
Capital and liabilities					
Share capital	518000	831400	1030467	1279607	1391570
Reserve funds	683515	1089837	1173158	1479530	1721976
Debenture & bonds	300000	300000	300000	300000	300000
Borrowings	-	-	-	-	482000
Deposits	18186254	23976300	33322946	36932310	41127914
Bills payable	26776	49430	148656	145515	49717
Proposed dividend	68146	140790	218080	276253	576897
Tax liabilities	15278	41143	20522	(1136)	26900
Other liabilities	1634604	720443	391019	566082	559237
Total	21432573	27149343	36604848	40978161	46236211

Source: EBL Annual Report,

Five years financial position of NABIL Bank

Particulars	Indicators	2063/64	2064/65	2065/66	2066/67	2067/68
Earnings per share	Rs.	137.08	115.86	113.44	83.81	70.67
Cash Dividend	Percent	100	60	35	30	30
Net profit / loans and advances	Percent	4.62	3.96	4.02	3.47	3.73
Net profit / total assets	Percent	2.72	2.32	2.55	2.37	2.43

Source: Nabil Annual Report,

Five years financial position of SCBNL

Particulars	Indicators	2063/64	2064/65	2065/66	2066/67	2067/68
Earnings per share	Rs.	167.37	131.92	109.99	77.65	69.51
Cash Dividend	Percent	80	80	50	55	50
Net profit / loans and advances	Percent	6.75	6.24	7.93	6.91	6.41
Net profit / total assets	Percent	2.42	2.46	2.56	2.70	2.55

Source: SCBNL Annual Report,

Five years financial position of EBL

Particulars	Indicators	2063/64	2064/65	2065/66	2066/67	2067/68
Earnings per share	Rs.	78.42	91.82	99.99	100.16	83.18
Cash Dividend	Percent	10	20	30	30	50
Net profit / loans and advances	Percent	2.10	2.40	2.61	2.95	2.94
Net profit / total assets	Percent	1.38	1.65	1.73	2.09	2.10

Source: EBL Annual Report,

Return on Total Deposit

Year	NABIL			SCBNL			EBL		
	NPAT	Total asset	Ratio	NPAT	Total asset	Ratio	NPAT	Total asset	Ratio
2063/64	673963	23342285	2.89	691668	24647021	2.81	2964	181862	1.63
2064/65	746468	31915047	2.34	818921	29743999	2.75	4512	239763	1.88
2065/66	1031053	37348256	2.76	1025114	35350824	2.90	6386	333229	1.92
2066/67	1139102	46410701	2.45	1085872	35182721	3.09	8318	369323	2.25
2067/68	1337745	49696113	2.69	1119171	37999242	2.95	9313	411279	2.26

Return on Shareholder's Equity

Year	NABIL			SCBNL			EBL		
	NPAT	Shareholder's Equity	Ratio	NPAT	Shareholder's Equity	Ratio	NPAT	Shareholder's Equity	Ratio
2063/64	673963	4566517	14.76	691668	2116353	32.68	2964	15147	19.57
2064/65	746468	3836707	19.46	818921	2492547	32.85	4512	21127	21.36
2065/66	1031053	3130241	32.94	1025114	3052470	33.58	6386	26216	24.36
2066/67	1139102	2437199	46.74	1085872	3369709	32.22	8318	31691	26.25
2067/68	1337745	2057049	65.03	1119171	3677777	30.43	9313	35543	26.20

Return on Investment

Year	NABIL			SCBNL			EBL		
	NPAT	Investment	Ratio	NPAT	Investment	Ratio	NPAT	Investment	Ratio
2063/64	673963	8945311	7.53	691668	13553233	5.10	2964	49851	5.95
2064/65	746468	9939771	7.51	818921	13902819	5.89	4512	50612	8.91
2065/66	1031053	10826379	9.52	1025114	20236121	5.07	6386	59485	10.74
2066/67	1139102	13703024	8.31	1085872	19847511	5.47	8318	50083	16.61
2067/68	1337745	13081206	10.23	1119171	17258682	6.48	9313	77439	12.03