

**PORTFOLIO PERFORMANCE ANALYSIS OF COMMERCIAL BANKS IN
NEPAL**

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ABBREVIATIONS

Adv.	:	Advances
C.V.	:	Coefficient of Variation
Inv.	:	Investment
LA	:	Loan and Advances
MSCN	:	Money at Short Call and Notice
NABIL	:	Nepal Arab Bank Limited
NIBL	:	Nepal Investment Bank Limited
NPAT	:	Net Profit after Tax
R	:	Correlation of Coefficient
$R_{Inv.}$:	Return on Investment
R_{LA}	:	Return on Loan and Advances
R_{MSCN}	:	Return on Money at Short Call and Notice
R_p	:	Portfolio Return
S.D.	:	Standard Deviation
SBI	:	State Bank of India
SCBNL	:	Standard Chartered Bank of Nepal Limited
ρ	:	Portfolio Risk

CHAPTER – I

INTRODUCTION

1.1 Background of the Study

Commercial Bank plays a vital role in the economic development of the country. It occupies an important contribution in economy. It provides capital for the development of industry, trade, business and other sectors by investing the savings collected as deposits. Besides this, Commercial Banks provide numerous services to their customers facilitating their economic and social life, for instance accepting of deposits, providing loans to the needy and other auxiliary functions. The other services performed by banks are payment of subscription, purchase and sale of securities, remittance of money, advisory services, and assistance in foreign trade etc.

The economic development is possible when domestic resources are properly mobilized and utilized. Similarly, for integrated and speedy development of the country the competitive banking and financial services should reach to the nook and corner of the country. Successful formulation and effective implementation of investment policy is the prime essential for the successful performance of banks and other financial institution. A good investment policy has a positive impact on economic development of the country and vice versa.

Commercial bank invests its money in various profitable financial sectors, which result profitable business in the long run. An investment is the commitment of money that is expected to generate additional money. So expecting the additional return, investors/depositors sacrifice current consumption. In addition, whenever one talks about the return, risk must not be avoided as well, because in all types of investment there is risk in some extent. As individual even banks make analysis of risk, return, and time to make investment decisions (i.e. portfolio decision). An investment operation of a

bank tends to be very risky one. A healthy development of any bank heavily depends upon its investment policy. Effective investment policy helps to increase the volume and quality of deposits, loans and investment. Further, a sound investment policy helps the bank to be efficient and profitable by minimizing the risk. Thus, investment operation of the bank should be guided by investment policy adopted by it.

Commercial Banks play major role in capital formation by collecting spread financial resources from various sources and invests them to different commercial and economic activities. Banks have catalytic role in the process of economic development. Thus, a key factor in the country is the mobilization of domestic resources and their investment for productive use to the various sectors. To make it more effective, commercial banks should formulate sound investment policies, which help maximize quality and quantity of investment and eventually contribute to the economic growth of a country. Hence, for sound investment policies, portfolio management is crucial.

A portfolio is a combination of investment assets. The portfolio is the holding of securities and investment in financial assets i.e. bonds, stock portfolio management is related to the efficient portfolio investment in financial assets. The portfolio analysis is reformed to develop a portfolio that has the maximum return at whatever level of risk and an investor thinks appropriate. A portfolio should be constructed in such a way that the risk can be reduced to the nadir without losing considerable return. Keeping these views into consideration, this study will focus on how the portfolios are made by commercial banks and on their performances.

1.2 Statement of the Problem

To earn profit banks have to invest their sources in different productive

sector of the investment alternatives. Since there is uncertainty of profit which creates risk, every commercial banks has to diversify their investment to minimize risk.

At present Nepalese Commercial Banks do not seem to be capable to invest their fund in more profitable sectors where there is risk. They are found more interested to invest in less risky and liquid sector such as Treasury Bills or Government Securities. This is due to weak investment policy of Commercial Banks and lack of Portfolio Management. Nepalese commercial banks are not found that formulate clear investment policy in an organized manner. They have no consideration towards portfolio optimization. They just rely upon the instructions and guidelines of Nepal Rastra Bank. They do not have their own clear vision towards investment portfolio as per environmental dynamism.

Most of the Commercial Banks invest their funds in limited area to achieve highest amount of profit. With the prevailing economic condition in the country, there has been lower investment in agriculture, manufacturing, industrial and other productive sectors, which is not satisfactory to meet the multiplier economic growth . They hesitate to invest in long-term projects. They are safety minded. Therefore, they follow conservative loan policy.

Further Portfolio Management activities of Nepalese Commercial Banks are in developing stage. The reason behind not using such by commercial banks may be due to less awareness about portfolio management and its usefulness, hesitation of taking risk and lack of proper techniques to run such activities in the best and proved manner.

In such situation, thus, this study mainly concerns with the portfolio performance analysis of Nepalese commercial banks. This study seeks to find out to the following questions:

- a. What is the trend of investment in different assets by commercial banks?
- b. What is the entitled risk and return on each investment assets?
- c. What is the portfolio risk and return of the banks?
- d. What is the relationship of net income with money at short call and notice, loan and advances and short-term investment?

1.3 Objectives of the Study

The main objective of the study is to analyze, examine and interpret portfolio technique followed by Commercial Banks in Nepal on their investment in various sectors. The specific objectives of the study are as follows:

- a. To evaluate the fund mobilized in money at short call & notice, loan & advances and short-term investment in sample firms.
- b. To compare the risk and return on investment assets of the Commercial Banks.
- c. To examine the relationship between net profit with money at short call and notice, loan and advances and short-term investment.

1.4 Significance of the Study

The portfolio analysis of banks attempts to address upon the selection of the assets for the construction of portfolio. While allocating the assets for a portfolio, an investor should compare the relationship between the assets, their realized return and expected.

The success of commercial banks no doubt heavily relies upon the successful investment in profitable sector. Hence, the main significance of this study is to analyze on current practices, their pros and cons regarding portfolio investment by commercial banks in Nepal.

Specifically, this study is also significant for the number of reasons. Firstly, it examines the existing situation of Portfolio Management of Nepalese

Commercial Banks. Second, it examines the investment and loan and advance portfolio of Commercial Banks. Last but not the least, it provides the literature to the researcher who wants to carry on future research in this field.

1.5 Limitations of the Study

The limitations of the study are as follows;

- a. The study covers only the portfolio analysis hence does not cover the other financial aspects of the sample banks.
- b. The study concentrates only on four selected banks, viz. Nepal Arab Bank Limited, Standard Chartered Bank Limited, Nepal Investment Bank Limited, and Nepal State Bank of India Limited, and hence may not accurately represent the total population of the banks.
- c. The study covers only five years data, i.e. from the fiscal year 2003/04 to 2007/08.
- d. The accuracy of the data heavily depends upon the reliability of secondary data collected from the various sources.

1.6 Chapter Scheme

For convenience, the study has been divided into five main chapters.

Chapter-I: Introduction

The first chapter provides background of the study, statement of the problems, objectives of the study, limitations of the study and significance of the study.

Chapter-II: Literature Review

The second chapter enlightens on the conceptual framework, review of journals and articles, and review of thesis that aid the richness of research.

Chapter-III: Research Methodology

The third chapter constitutes research design, population and sample, sources of data and analytical tools that will be adopted to meet the objectives set out.

Chapter- IV: Data Presentation and Analysis

The fourth chapter presents the data collected from various sources in tabular and graphical form and makes analysis, which will be crucial for drawing conclusion. Further, the major findings will be drawn at the end of the chapter.

Chapter-V: Summary, Conclusion and Recommendations

Finally, the fifth chapter summarizes the whole study and draws conclusion on the basis of the analysis made and major findings drawn in the fourth chapter. Eventually, the recommendations will be made with due considerations of findings.

CHAPTER - II

REVIEW OF LITERATURE

This part of the study deals with making theoretical framework. So, it incorporates the review of concepts, review of journals and articles and review of thesis.

2.1 Conceptual Review

The conceptual review includes concept of investment, return, risk, portfolio and risk diversification.

2.1.1 Investment

“In general sense Investment means to pay out money to get more. But in the broadest sense, investment means the sacrifice of current dollars for future dollars. The sacrifice takes place in the present and is certain. The reward comes later, if at all and the magnitude is generally uncertain. It is commonly known fact that an investment is possible only when there is adequate saving therefore, both saving and investments are interrelated” (*Cohen, Edward & Zeikal; 1978: 65*).

Investors also seek to manage their wealth effectively obtaining the most from it, while protecting it from inflation, taxes and other factors. Similarly, Francis (1998) has stated, “an investment is a commitment of money that one expects to generate additional money. Every investment entail some degree of risk, it requires a present certain sacrifice for a future uncertain benefit.”

“Investment policy fixes responsibilities for the investment disposition of the bank assets in term of allocation funds for investment and loan and establishing responsibility for day to day management of those assets” (*Bosley; 1989: 15*).

Thus, “investment means use of dollar of amount today by exception more income in future. It is clear that investment is the utilization of funds to day with expected additional return in future. The saving made by the investor may affect by taxes, inflation, depression, labor relations, government action and other social phenomena. Sometime one may get negative return also, if wrongly invested without sound knowledge of investment and their related factor” (*Khan & Jain; 1990: 93*).

Bodie & Marcus (2004) has stated, “Investment has to undergo various types of risk of business risk. Possibility of being wane in earning power of investment due to competition, uncontrollable costs, change in demand, market risk possibility of strong change in market price and collateral value of securities and real properties, therefore making investment is not sufficient one should follow sound investment policy.”

Finally, investment therefore is to trade money for expected future stream of payment of benefits that will exceed the current cash outflow which is the benefit to the investors for sacrificing the time and commitment or due to uncertainty and risk factors. Financial institutions must be able to mobilize their deposit funds in profitable, secured and marketable sector so that they can earn return on their investment.

2.1.1.1 Investment Alternatives

To maximize earning investment can be done in various sectors. Some of the major areas in which investment are made are discussed below;

A) Equity Securities

a) Common Stock

“Common Stocks of a company are papers which represents ownership. Shareholders enjoy right to dividend, right to vote and right to right share. Shareholders enjoy each corporate success in the form of higher dividend and

capital again but they bear risk also. For investors having long term horizon, common stock is suitable investment” (*Adhikari & Shakya; 2005: 4*).

b) Preferred Stock

“Preferred stock gives a fixed income so it is a fixed income security. These stocks are highly liquid able, since preference stockholders gets first priority for dividend and liquidation right. Although preferred stockholders get priority after bond and debentures paid off. This is a source of long term investment, a suitable for those investors who want a fixed return because rate of return in preferred stock is already fixed before issue” (*Adhikari & Shakya; 2005: 4*).

B) Debt Security

According to the length of maturity, debt securities are classified into two classes, i.e. short term debt securities and long term debt securities.

I) Short term debt securities

The maturity period of debt securities is less than one year. Short term securities are easily marketable and less risky but have low rate of return. Some short term debt securities are discussed below:

a) Commercial papers

“Commercial papers are short term promissory notes selling at discount basis. They are unsecured notes specially issued by popular and larger financial organizations. They paid par value at maturation. Simply the maturation period of commercial papers is 270 days” (*Adhikari & Shakya; 2005: 5*).

b) Certificates of deposit

“Certificates of deposit are issued be commercial banks or financial institutions. They are highly liquid and almost risk free which yield higher return in comparison of T-bill. So they are popular among company or

individual investor who prefers highest return with maintaining liquidity. Face value of certificates of deposit is Rs. 100000” (*Adhikari & Shakya; 2005: 5.*)

c) Bankers’ Acceptance

“Importers issue a promissory note to secure trade credit from exporters which is unknown as Bankers acceptance. Accepting such note, the bank promises to pay the holders stated amount at maturity” (*Adhikari & Shakya; 2005: 5.*)

d) Treasury Bill

“Government issues 91 days maturity period Treasury Bill. But sometimes they are issued for 182 days or 364 days. They are normally issued by Nepal Rastra Bank on behalf of government, in determination of Rs. 1000 and sold at discount basis. They are repaid at par since they don’t have coupon interest rate. Treasury bills are highly liquid and traded in the money market” (*Adhikari & Shakya; 2005: 5.*)

II) Long term debt securities

Debt securities having the maturity periods over one year, normally give fixed return on investment. So, they are more popular among those investors who prefer fixed income from investment. Detail discussion is made over long term debt securities below:

a) Government Securities

“Government issues some long term securities to cover its expenses. Government securities are less risky and low return securities. Treasury bonds and Treasury notes are form of government securities. Treasury bonds have maturity over ten years, while Treasury notes are of maturity with ten years or less years. Notes as well as bond, both have fixed coupon rate and interest respectively paid semiannually” (*Adhikari & Shakya; 2005: 5.*)

b) Municipal Securities

“Municipal securities are securities issued by local government like district development committees, municipalities. They issue some securities to meet their financial needs” (*Adhikari & Shakya; 2005: 6*).

c) Corporate Bonds

“Bonds that are issued by corporation are called corporate bonds. They are risky than government securities and municipal bond and thus produces higher return. Corporate bonds are first priority to return at maturity over common stocks and preferred stock” (*Adhikari & Shakya; 2005: 6*).

C) Derivative Securities

Derivative is the instrument whose value is derived from the value of underlying assets. In Nepal, derivative securities are not available but they are very important investment alternative in developed countries. Following are some important derivative securities.

a) Option

“Option is a financial asset in which an investor can fix a price well in time and has right to buy or sell at the same price (exercise price) in future. This is a contract between two investors, call writer and option buyer. Option buyer contracts to buy or sell option in predetermined (exercise) price with call writer. If the price of asset goes above the exercise price, buyer buys options in predetermined price” (*Gitman; 1988: 37*).

b) Warrants

“Warrants are financial contract attached with bond or preferred stock which gives the holder right of purchasing specified numbers of share at predetermined (exercise) price within or on certain future date. They are more beneficial if the price of stock rises at the market. They are attached to attract

the investors. When warrants are exercised, number of common stocks is increased because new stocks are issued” (*Gitman; 1988: 37*).

c) Futures

“Future is a contract between two parties to buy or sell a fixed number of a particular security for delivery at a fixed date in a fixed price” (*Gitman; 1988: 38*).

D) Real assets

“Real assets are the non-financial assets. Precious metals like gold, silver, platinum etc. Real estate like residence, underdeveloped land, farmland, commercial property etc. is real assets. Generally, among those investors who have lack of risk return characteristics of financial assets, investment in real assets is attractive” (*Hampton; 1980: 96*).

E) Hybrid Securities

Hybrid securities have the characteristics of both equity and debt. Convertible bonds and convertible preferred stock are hybrid securities.

F) International Investments

“Investors sometimes invest in securities issued by outside organizations from their own country. International investment is traded in organized exchanges and over the counter market (OTC)” (*Hampton; 1980: 97*).

G) Other Investment Alternatives

Besides above, pension funds, mutual funds, citizen investment fund, unit trust fund, dual fund etc. are other alternatives for investment.

2.1.2 Return

“Return is the motivating force and the principal reward in the investment process and it is the key method available to investors in comparing alternative

investment. Return can be of different way, like expected rate of return, holding period return, capital gain, dividend yield, return from speculation or short sell, yield to maturity etc. The return is the total gain or loss experienced on an investment over a given period of time. It is commonly measured as the change in value plus any cash distributions during the period, expressed as percentage of the beginning of period investment value” (*Gitman; 2001: 238*).

A) Single-Period Rate of Return

“The period during which one owns an investment is called its holding period and the return for that period is the holding-period return (HPR) or single-period rate of return. It is calculated as follows:

$$HPR_t(r_t) = \frac{(P_{t+1} - P_t) + D_{t+1} \text{ or } I_{t+1}}{P_t}$$

Where,

- P_{t+1} = Ending price or selling price
- P_t = Beginning Price
- D_{t+1} = Cash dividend at the end of a period
- I_{t+1} = Interest Rate the end of a period

Single-period return is the one period return, that may be 1 day, 7 day, 1 month, 6 month, 1 year, 2 year and so on” (*Jacob & Petit; 1984: 43*).

B) Return on Multiple Periods

“Single-period rate of return for the several period returns is referred as investment return over multiple periods. Sometimes, current income (interest or dividend) receives more times during a period. Under such condition, return can be calculated by using the following equation;

$$HPR_t = \frac{(P_{t+2} - P_t) + D_{t+1} + D_{t+2}}{P_t}$$

Where,

- P_{t+2} = Price at the end of the second period
- D_{t+1} = Cash dividend at the end of second period” (*Jacob &*

Petit; 1984: 46)

C) Expected Rate of Return

“The expected rate of return for any asset is the weighted average rate of return, using probability of each rate of return as the weight. The expected rate of return is calculated by summing up the products of the rates of return and their respective probabilities.

$$\text{Expected Value, } E(r) = \sum_{t=1}^n P_t r_t$$

Where r_t is the rate of return from a probability distribution, P_t denotes the probability that the t^{th} rate of return will take place, and therefore T possible rates of return” (*Jacob & Petit; 1984: 50*).

2.1.3 Risk

“Risk is defined as the variability of the returns in a period. The one-period rate of return is the basic random variable used in measuring an investment’s risk. The greater the variability of the returns, the riskier is the project.

Risk is the feeling of the negative returns. It is the uncertainty of whether the money investors lend will be returned. Such risk is regarded as bankruptcy risk. Stockholder of the firm should not only consider bankruptcy risk but also the risk that the firm will yield a rate of return below some targeted rate. Range, variance, standard deviation, coefficient of variance (CV) and beta are parameter for the measurement of risk. Beta is the parameter for the measurement of the systematic risk” (*Surz & Price; 2000: 35*).

Systematic Risk: “The systematic risk is also known as un diversifiable risk. This risk is that portion of total variability in return caused by market facto than simultaneously affect the prices of all securities. Systematic risk is due to that factor, which affect the overall market such as changes in the macro

economic factors like, interest rate, inflation, expectations of investors, gross domestic product, tax reform by the government etc. Moreover, it is the cause of external environment of the firm” (*Hampton; 1996: 55*).

Unsystematic Risk: “Unsystematic risk can be reduced through diversification. This type of risk is unique to an organization and can be largely eliminated by holding a diversified portfolio of investment. Diversifiable risk creates through the events like, labor strikes, management errors, advertising campaigns, availability of raw materials etc” (*Hampton; 1996: 58*).

2.1.4 Portfolio Management

“Portfolio management is the process of selecting securities that provides the investing organization a maximum yield for a given level of risk or alternatively ensuring minimum level of risk for a given level of return. It can be also taken as risk and return management. Its aims to determine an appropriate asset mix which attains optimum level of risk and return.

Investors rarely place their wealth into a single assets or investment. Rather, they construct a portfolio or group of investment. Portfolio is simply a combination of two or more securities or assets. The expected return on a portfolio is simply the weighted arithmetic average of the expected returns of the assets constituting the portfolio. The riskiness of a portfolio is measured by the standard deviation of the portfolio's rate of return” (*Richard; 1996: 73-74*).

The investments available to an investor can be combined into any number of portfolios. Brealy and Myers (1991) says, “each possible portfolio may be described in terms of its expected rate of return and standard deviation of rate of return, and plotted on a two-dimensional graph. The investor should choose the portfolio that maximizes utility function. This choice involves two steps: delineation of the set of efficient portfolios, and selection of the optimal portfolio from the set of efficient portfolios. The efficient frontier is the same

for all investors because the portfolio theory is based on the assumption that investors have homogeneous expectations.”

While making investment, efficient should consider efficient portfolio. “The set of efficient portfolios may be determined with the help of graphical analysis, calculus analysis or quadratic programming analysis. The major advantage of graphical analysis is that it is easier to grasp. The disadvantage of graphical analysis is that it cannot handle portfolios containing more than three securities. The calculus method can handle portfolios containing any number of securities, since mathematical analysis can grapple with the n-dimensional space. Quadratic programming analysis can handle any number of securities and it can cope with inequalities as well. For practical purposes, the quadratic programming approach is the most useful approach” (*Brealy & Myers; 1991: 100-101*).

Similarly, Surz and Price (2000) have opined “Portfolio, technically known as efficient portfolios, is a superior portfolio. The efficient portfolios is a function of not only risk and return of individual asset included, but also the effect of the relationship among the assets on the sum total of portfolio risk and return. The portfolio return is straight weight average of the individual asset. But the portfolio risk is not weighted average of the variances of return of individual assets. The portfolio risk is affected by the variance of return as well as the covariance between the return of individual assets included in the portfolio and their respective weights”.

In addition, Chandra (2002) considers “Portfolio analysis as the determination of future risk and return in holding various blends of individual securities. Portfolio expected return is a weighted average of the expected return of individual securities but portfolio variance is sharp contrast, can be something less than a weighted average of security variance. As a result investor can reduce portfolio risk by adding another security with greater individual risk

then other security in the portfolio. The seemingly curious result occurs because risk greatly on the covariance among return of individuals securities.”

“The aim of portfolio management is to achieve the maximum return from a portfolio which has been delegated to be managed by an individual or financial institution. The manager has to balance the parameters which define a good investment i.e. security, liquidity and return. The goal is to obtain the highest return for the client of managed portfolio” (*Frank & Reilly; 1982: 76*).

2.1.4.1 Popular Models of Portfolio

A) Markowitz portfolio selection model

Markowitz developed the basic model, which defines the expected return of a portfolio as a weighted average of the expected returns of the individual assets in the portfolio. The weights are defined as the portion of the investor’s wealth invested in particular assets.

Markowitz used the variance of return as the measure of risk. “The risk of the portfolio is not the weighted average of the variance of the expected returns of the individual assets in the portfolio however. Estimating portfolio risk in this way would obscure the effect of combining assets with different returns patterns in a portfolio. The portfolio model developed by Markowitz is base on the following reasonable assumptions:” (*Francis; 2003: 87-89*)

- a. The expected return form an assets is the mean value of a probability distribution of future returns over some holding period.
- b. The risk of an individual assets or portfolio is based on the variability of returns. (i.e., the standard deviation or variance)
- c. Investors depend solely on there estimates of return and risk in making their investment decisions. This means that an investor utility (indifference) curves are only the function of expected return and risk.
- d. Investors adhere to the dominance principle. That is, for any given

level of risk, investor prefer assets with a higher expected return for assets with same expected return investors prefer lower to higher risk.

“Markowitz further argued the expected return of the portfolio is the weighted average of the expected returns of the individual assets in the portfolio. The weights are proportion of the investor wealth invested in each asset, and sum of the weights must be equal one.

$$R_P = W_A R_A + W_B R_B + \dots + W_N R_N$$

Where,

- R_p = Portfolio Expected Return
- W_A = Weight of Investment in stock ‘A’
- W_B = Weight of Investment in stock ‘B’
- R_A = Expected Return for stock ‘A’
- R_B = Expected Return for stock ‘B’

The portfolio risk is measured by either variance or the standard deviation of returns. The portfolio risk is affected by the variance of return as well as the covariance between the return of individual assets included in the portfolio and respective weights” (Francis; 2003: 92).

The variance of returns from the portfolio made up an asset is defined by following equation:

$$\text{Variance } (\sigma_p^2) = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{COV}(r_A, r_B)}$$

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{COV}(r_A, r_B)}$$

Where,

- σ_p = Standard Deviation of Portfolio Rate of Return
- $\text{COV}(r_A, r_B)$ = Covariance of Return between Assets A & B

The covariance is related to correlation as shown in equation

$$\text{COV}(r_A, r_B) = r_{AB} \sigma_A \sigma_B$$

r_{AB} = correlation coefficient between variable A & B.

B) Capital Assets Pricing Model (CAPM)

“A model that describe the relationship between risk and expected(required) return; in this model a securities expected(required) return is the risk free rate plus a premium based on the systematic risk of the securities.

This model was developed in 1960 A.D. It has important implications for finance ever since, while other models also attempt to capture market behavior. The CAPM is simple in the concept and has real world applicability. It allows us to draw certain implications about risk and the size of the risk premium necessary to compensate for bearing a risk.

Assumptions of Capital Assets Pricing Theory Model

Capital market theory (CMT) uses portfolio theory as its starting point: thus, the assumption underling portfolio theory also pertains to the CAPM and the CAPM appear less realistic than the portfolio theory assumptions;”
(Francis; 2003: 95-98)

- a. All the investors are risk-averse. Thus all the investors seek to be on the efficient frontier.
- b. There are no constraints on the amount of money that can be borrowed. Borrowing and lending occurs at the identical risks-free rate.
- c. All investors have identical belief about the expected returns and risk of assets and portfolios; that is, all investors have homogeneous expectations.
- d. All investors have a common investment horizon, whether it is on month, three month, one year or whatever.
- e. All investors are infinitely divisible and marketable; that is it possible to buy or sell any portion of an asset or portfolio.
- f. Taxes and transaction costs do not exist. That is there are no tax effects, costs of acquiring information or transecting costs associated with

buying or selling securities. These are often referred to as perfect market assumptions. Market assumed to be competitive therefore the same investment opportunities are available to all investors.

- g. There are no unanticipated changes in inflation or interest rates.
- h. The capital markets are in a same state equilibrium or striving toward equilibrium, there are no under pricing or overpricing exists, the prices will move to correct this disequilibrium situation.

Using beta as our index of Un-diversifiable risk, the CAPM model is given in the equation below:

$$R_j = R_f + (R_m - R_f) b_j$$

Where,

R_j = the required or expected rate of return of stock j

R_f = risk free rate of return.

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

B_j = the beta coefficient of assets j

C) Arbitrage Pricing Theory Model (APT)

CAPM is based on only single factor of the average market performance, and it is based on some unrealistic assumptions. Such a reservation on the part of the user called for a new model. Stephen A Ross's multifactor model (1976), called arbitrage pricing theory (APT), is the answer to this call.

“The APT is said to superior on the ground that it is more general than CAPM. The CAPM assumes that the rate of return on a security is influenced by only one factor that is the average market performance. Unlike CAPM the APT assumes that the rate of return on a marketable security is a linear function of the movement of a set of economic factors (F_k) common to all securities. The random of return under ATP model is a linear function of k factors as follows:

$$R_j = R_j + b_{j1}F_1 + b_{j2}F_2 + \dots + b_{jk} F_k + e_j \dots \dots \dots (i)$$

Where,

- R_j = random rate of return on stock j
- R_j = expected rate of return on stock j
- b_{jk} = sensitivity of stock j return to k^{th} factor
- F_k = mean zero factor common to the returns of assets under consideration
- E_j = random error term indicating the unique effect of return.

The F_k is the mean zero random of k factor and it is the deviation of realized value from the expected value. The error term e_j is the unique or systematic risk which can be eliminated through diversification and does not affect the stock rate of return. Therefore, the ATP model is rewritten as follows:

$$R_j = R_j + b_{j1} (F_1 - F_1) + b_{j2} (F_2 - F_2) + \dots + b_{jk} (F_k - F_k) \dots \dots \dots (ii)$$

The name arbitrage refers to the market condition where two or more securities of identical factor sensitive are priced differently, providing opportunities to make profit by selling over-priced securities short and buying under priced securities long. Such transactions are called arbitrage and they allow market participants to make profit without investment and without assuming any risk through short selling and buying long for the amount equivalent to the short selling. Such opportunities rarely exist in an efficient market and no one can benefit from arbitrage transactions. Otherwise, prices will continue to change until the expected return from such transactions is zero. Therefore the expected arbitrage profit is zero the long if the market functions efficiently. The ATP is based on this very principle of “no investment, no risk, and no return” (Francis; 2003: 102-106).

The ATP states that if no arbitrage opportunity exists in the market, the asset

pricing is a function of risk free rate and a set of relevant factor to risk premium. It is, therefore, true that ATP is not different from CAPM which also states that return on security is equal to risk free and risk premium for the market related factor. The ATP model can be expressed through some mathematical manipulation in CAPM format as follows:

$$R_j = R_f + b_{j1} [E (F_1) - R_f] + b_{j2} [E (F_2) - R_f] + \dots + b_{jk} [E (F_k) - R_f] \dots \text{ (iii)}$$

Thus, we can see that the ATP logic is not much different from the logic used in the CAPM. Similar to CAPM, only the set of systematic risk is priced in the above model, and no price is assigned for the diversifiable risk. The risk premium for systematic risk of each factor is determined as the market price per unit of risk multiplied by the degree of factors systematic risk.

2.1.5 Diversification of Risk

Diversification of portfolio helps to minimize risk. If investors invest their fund in more securities, they can reduce risk and maximize the return. However, even with large number of stocks, investors cannot avoid altogether risk, since virtually all securities are affected by the common macro economic factors.

2.1.5.1 Simple Diversification

Simple diversification is the random selection of securities that are to be added to a portfolio. Simple diversification reduces a portfolio's total diversifiable risk to zero and only un-diversifiable risk remains.

Clark defines simple diversification as “not putting all eggs in one basket” or “spreading the risks.” Evans and Archer (1968) made sixty different portfolio of each size from randomly selected New York Stock Exchange (NYSE) stocks and proved the decrease in the un-diversifiable risk with increase in the number of securities in the portfolio. They made the portfolio from the randomly selected securities and allocated equal weights. Spreading the

portfolio's assets randomly over two or three times as many stocks cannot be expected risk any further.

2.1.5.2 Superfluous Diversification

“It refers to the investors spreading himself in so many investments on his portfolio. The investor finds it is impossible to manage the assets on his portfolio because the management of a large number of assets requires knowledge of the liquidity of each investment return, tax liability and thus becomes impossible without specialized knowledge.

In this context, Clark adds that superfluous diversification usually result in the following portfolio management problems.

- a. Impossibility of good portfolio management
- b. Purchase of lackluster performers
- c. High search costs
- d. High transaction costs

Although more money is spent to manage superfluously diversified portfolio; there will most likely to be no concurrent improvement in the portfolio's performance. Thus, superfluous diversification may lower the net return to the portfolio's owners after the portfolio's management expenses are deducted” (*Francis; 2003: 115-117*).

2.1.5.3 Diversification Across Industries

“Another diversification can be experienced from the combination of the stocks from different industries. The basic principle of diversifying assets across the industries is the losses incurred in one stock can be compensated through the gain realized from the profitable stocks” (*Fisher & Lorie; 1970: 86*). Fisher and Lorie have made an empirical research on random and across industry diversification of portfolio containing 8,16,32,and 128 NYSE listed common stocks where they have concluded that diversifying

across industries is not better than simple diversification and increasing the number of different assets held in the portfolio above eight does not significantly reduce the portfolio's risk.

2.1.5.4 Simple Diversification Across Quality Rating Categories

“The effect of simple diversification across stocks that have the same standard and poor quality ratings. Their study consists of six diversified portfolio each containing 20 equally weighted common stocks that all have identical quality ratings. Their empirical study supported the economic theory, which suggest that risk- adverse investors should require higher average rates of return in order to induce them to assume higher levels of risks” (*Wagner and Lau; 1971: 65*). Further their study revealed simple diversification yields significant risk reductions within homogenous quality rating categories against the risk reductions within the heterogeneous samples used by Evans and Archer . They concluded their study, as the highest quality portfolio of randomly diversified stocks was able to achieve lower levels of risk than the simply diversified portfolios of lower quality stocks. This result reflected the fact that default risk (as measured by the quality ratings) is part of total risk. Their findings suggested that portfolio managers could reduce portfolio risk to levels lower than those attainable with simple diversification by not diversifying across lower-quality assets.

2.1.5.5 Mean-Variance Indifference Curves

Indifference curves represent the investor's risk preferences. Through indifference curves, it is possible for an investor to determine the various combinations of expected returns and risks that provide a constant utility. “The curves can be drawn on a two dimensional figure, where the horizontal axis indicates risk as measured by standard deviation (denoted by σ) and the vertical axis indicates reward as measured by expected return (denoted by r_p).

The sets of mean variance indifference curves are literally a theory of choice. The only assumptions necessary to draw the indifference curves for risk-averse investors are;” (Joshi; 2002: 33)

-) People prefer more wealth to less
-) They have diminishing marginal utility of wealth

These assumptions, if valid, imply that all decision makers are risk averse and will require higher return to accept greater risk.

2.2 Review of Related Studies

Under this part of the study, the different studies made, both nationally and internationally, related to the portfolio analysis are reviewed.

2.2.1 Review of International Studies

Jurek & Viceira (2005), in their article, “*Optimal Value and Growth Tilts in Long-Horizon Portfolios*”, have stated that the optimal dynamic rebalancing strategy is acne in the vector of state variables describing investment opportunities, with coefficients that change with investment horizon. This solution is based on an approximation to the log return on wealth which becomes increasingly accurate as the frequency of rebalancing increases, and it is exact in continuous time. An important advantage of this solution is that it can be readily implemented for investment opportunity sets with any number of assets and state variables.

On average equity investors with short horizons optimally choose portfolios heavily tilted toward value and away from growth, regardless of their risk aversion. Aggressive short-term investors and it optimal to hold long large positions in value stocks by large short positions in growth stocks, because the mean return spread between value and growth is positive, and their returns are highly positively correlated. Highly risk averse short-term investors hold large positions in value stocks because of their smaller return volatility and high

correlation with growth. However, the optimal allocation to value decreases dramatically and correspondingly the optimal allocation to growth increases for investors with longer horizons. This effect is strongest for long-horizon, highly risk averse investors, who hold large long positions in growth stocks. The increasing portfolio demand for growth stocks across investment horizons is driven by inter temporal hedging motives. Growth stocks are better suited than value stocks to hedge against adverse changes in investment opportunities in the equity market, because they are more highly negatively correlated with changes in aggregate stock discount rates than value stocks are.

Benzoni, Dufresne, & Goldstein (2007), in their article, “*Portfolio Choice over the Life-Cycle when the Stock and Labor Markets Are Co-integrated*”, have stated that conventional wisdom maintains that young investors should invest heavily in the stock market. Furthermore, most models suggest that labor income is more bond-like than stock-like, implying that even higher optimal proportions of wealth should be placed into holdings of the risky asset if labor income is taken into account. An agent’s labor income is co-integrated with the dividend process on the market portfolio, while the individual labor income component is subject to significant permanent idiosyncratic shocks. The optimal portfolio choice for the young investor is to take a substantial short position in the risky portfolio. This occurs because in the value of the claim to labor income is effectively a highly leveraged security with large implicit exposure to the market portfolio.

If one were to incorporate housing into the portfolio choice problem and model the co-integration, the optimal investment in stocks would become even more negative. Further, since in the presence of co-integration the investment horizon has a dramatic impact on portfolio holdings, it would be interesting to explore within an equilibrium model the interaction of various cohorts or overlapping generations of households whose labor income is co-integrated with long-term market performance.

Mau (2009), in his article, “*Back to the Basics: A Process Approach for Managing Portfolio Risk*” has stated that the problem of relying on the quantification of risk has produced some undesirable outcomes. The way one can manage risk is by following a procedure and systematically applying the methodology to risky situations. By incorporating the process framework demonstrated, knowledge can be gained and risk management can be improved.

When economists restrict their investigations to those explanations consistent with the paradigm, to the exclusion of simpler and more reasonable hypothesis, the tool becomes a handicap. As demonstrated, by implementing the process framework, the portfolio manager could consider various aspects of the scenario which include quantitative as well as qualitative aspects of the risky situation. The consideration of the complete story will aid the portfolio manager in determining the appropriate risk management strategy and not strictly rely on computer models and risk quantification.

2.2.2 Review of National Studies

A) Review of Articles

Timilsina (2001), in his article, “*Managing Investment Portfolio*” has confronted with problems of managing investment portfolio particularly in times of economic slowdown like ours. A rational investor would like to diversify his investments in different classes of assets so as to minimize risks and earn a reasonable rate of return.

An investor may have the option of making investment in Government bonds or debentures. This is comparatively risk free investment, but yields low return. An investor has to evaluate the risk and return of each of the investment, alternatives and select an alternative, which has lower degree of risk and offer at least reasonable rate of return. One can draw a safe side conclusion to invest all the money he has only in government securities but this is not a rational

decision. An investor who does not try to maximize return by minimizing the possible risk is not a rational investor. On the other hand one can lose confidence on equity investment and assume high risk by investing the whole money in equity shares. Stock market these days is much dwindling and notoriously unpredictable therefore this too is not a wise decision. Therefore portfolio, which consists of only one class of financial assets, is not a good portfolio.

Shrestha (2002), in his article, “*Portfolio Management in Commercial Banks, Theory and Practices*”, has highlighted the following issues:

- a. The portfolio management becomes very important both for individuals and institutional investor.
- b. Investor would like to select better mix of investment assets subject on these aspects like, higher return that is comparable with alternatives according to the risk class of investor.
- c. Good quality with adequate safety on investment, maximum tax concession, economic efficient mixes.

The article stated that nowadays number of banks and financial institution are operating in this sector are having greater network and access to national and international markets. They have to go with their portfolio management very seriously and superiority, to get success to increase their regular income as well as to enrich the quality service to their clients. In this competitive and market oriented open economy, each commercial banks and financial institution has to play a determining role by widening various opportunities for the sake of expanding of best service to their customers.

The portfolio management activities of Nepalese commercial banks at present is in nascent stage. However, on the other hand most of banks are not doing such activities so far because of following reasons. Such as unawareness of the client about the service available, hesitation of taking risk by the client to

use such facilities, lack of proper techniques to run such activities in the best and successful manner, less development of capital market and availability of few financial investment in the financial market.

Thapa (2003), in his article, "*Managing a Banking Risk*", article has stated that Banking and financial service are among the fastest growing industries in developed world and are also emerging as cornerstones for other developing and underdeveloped nations as well. Bank primary function is to trade risk. Risk cannot be avoided by the bank but can only be managed. There exist two types of risk. The first is the diversifiable risk or the firm specific risk which can be mitigated by maintaining an optimum and diversified portfolio. This is due to the fact that when one sector does optimum and diversified portfolio. This is due to the fact that when one sector does not do well the growth in another might offset the risk. Thus depositor must have the knowledge of the sectors in which their banks have made the lending. The second is un-diversifiable risk and it is correlated across borrower, countries, and industries. Such risk is not under control of the firm and bank.

Further, risk management of the banks is not only crucial for optimum trade off between risk and profitability but is also one of the deciding factors for overall business investment leading to growth of economy. Managing risk not only needs sheer professionalism at the organization level but appropriate environment also needs to develop. Some of the major environment problems Nepalese banking sector is under government intervention, relatively weak regulatory frame, if we consider the international standard, meager corporate governance & the biggest of all is lack of professionalism. The only solution to mitigate the banking risk is to develop the badly needed commitment eradication of corrupt environment especially in the disbursement of lending, and formulate prudent and conducive regulatory frame work.

Mahat (2003), in his article, “*Efficient Banking*”, stated that the efficiency of banks can be measured using different parameters. The concept of productivity and profitability can be applied while evaluating efficiency of banks. The term productivity refers to the relationship between the quantity of inputs employed and the quantity of outputs produced. An increase in productivity means that more output can be produced from the same inputs or the same outputs can be produced from fewer inputs. Interest expense to interest income ratio shows the efficiency of banks in mobilizing resource at lower cost and investing in high yielding assets. In other words, it reflects the efficiency in use of funds.

The analysis of operational efficiency of banks will help one in understanding the extent of vulnerability of banks under the changed scenario and deciding whom to bank upon. This may also help the inefficient banks to upgrade their efficiency and be winner in the situations developing due to slowdown in the economy. The regulators should also be concerned on the fact that the banks with unfavorable ratio may bring catastrophe in the banking industry.

Poudel (2005), in his article “*Government Security Markets Rationale and Development in Nepal*” has concluded that the security markets are the centre of the financial system. Debt securities market in the Nepal is highly dominated by government debt securities. Debt statistics evident that Nepal remained debt free nation till 1950’s. From the beginning of 1960’s foreign loans and domestic bonds been alternative means of debt financing in Nepal as a result total debt as a percentage of GDP widened from 1% in 1950 to 65.3% in 2004.

Further, NRB and Commercial Banks are the main holders of government bonds. In this article he suggested following improving area in debt securities market in Nepal:

- a. To make government securities active instruments of open market operation coupon rate on government securities has to be fixed closely

- to the market rate of interest.
- b. Exchange of government securities at the market price have to be encouraged.
 - c. Products of government debt securities need to be diversified to meet investor's demands.
 - d. Like equity shares the marketable government securities needs to be exchange in the floor of Nepal stock exchange at competitive price.

B) Review of Thesis

Sijapati (2000), has conducted a study entitled, "*Risk and Return Analysis of Common Stock Investment.*" The main objective of her study was to analyze the risk, return and other relevant variables that help in making decisions about stock and investment in Insurance Companies. The other specific objectives of her study were;

- a. To understand and identify the problems faced by individual investor and insurance companies.
- b. To calculate risk and return of common stocks and their portfolio.
- c. To analyze the volatility of different stocks and their companies and other relevant variables that should be considered while deciding investment in stocks.

The major findings of the study were;

- a. Based on Market Capitalization, the size of Nepal Insurance Company (NIC) is the biggest one.
- b. Expected return on the common stock of National Life and General Insurance Company Limited (NLIG) is maximum (i.e., 65.39%). Expected return on common stock of Himalayan General Insurance Company Limited (HGI) is lowest with negative value. In overall industrial sector, expected return of Finance and Insurance sector is highest.
- c. Overall market expected return is over 50%. NLGI's expected return is

highest which ultimate the standard deviation (risk) to be the highest and Everest Insurance Company's risk and return is the lowest one.

- d. The stock of NLGI is highly sensitive with market due to its greater degree of beta coefficient. In addition, stock of United Insurance Company (UIC) moves opposite with market because of its negative beta coefficient.
- e. There was no significance difference between the portfolio return of Insurance Companies' stock and overall market portfolio.

Basnet (2002), has conducted a study entitled, "*Portfolio Management of Joint Venture Banks in Nepal.*" The main objective of the study was to identify the situation of portfolio management of Joint Venture Banks in Nepal. The other specific objectives were;

- a. To analyze the risk and return ratio of Commercial Banks.
- b. To evaluate the financial performance of Joint Venture Banks.
- c. To survey the existing situation of portfolio management.
- d. To provide the suggestive package based on the analysis of the data.

The major findings of the study were;

- a. The mean investment to total deposits ratio of Nepal Bangladesh Bank Limited is lowest i.e. 12.87% where as Everest Bank Limited has highest i.e. 29.36% among four Joint Venture Banks.
- b. The mean liquidity fund balance to total deposits ratio shows Standard Chartered Bank Nepal Limited has good liquidity position among selected banks.
- c. The ratios of Everest Bank Limited are more consistent among four Joint Venture Banks. However, Everest Bank Limited is investing very high amount of fund on government securities. It also has the highest risky asset in comparison to the four banks.

Joshi (2002), has conducted a study entitled, “*Investor Problem in Choice of Optimum Portfolio of Stock Exchange.*” The main objective of the study was to identify the investor gets problems in choosing the optimum portfolio. The other specific objectives were;

- a. To analyze the investment pattern of listed companies of NEPSE.
- b. To examine the portfolio risk and portfolio return of the selected company.

The major findings of the study were;

- a. Due to lack of sufficient information proper investment is not possible. Proper investment needs huge information internal as well as external. The stock market of Nepal is also in growing stage only. The only one stock exchange is located in Kathmandu.
- b. Traditionally cry system for trading stock. Limited number of security broker, lack of opportunity of investment and many other reasons are there, which is acting as barrier of development of NEPSE.
- c. Investor does not know in which stock to invest, how to formulate the portfolio. Even many stock brokers do not give information to the investor. Investor are purchasing and selling their stocks mostly on the pressure of broker.
- d. Due to lack of sufficient information the decision for purchase and sell of stock has been difficult. It needs special knowledge as well as adequate skills to analyze portfolio.

Bhatta (2003), has conducted a study entitled, “*Portfolio Management of Listed Finance Companies in Nepal*”. The main objective of the study was to identify the present situation of portfolio management of finance companies in Nepal with the help of risk, return and other relevant variables. The other specific objectives of his study were;

- a. To compare the risk and return of common stocks and their portfolio.

- b. To study the volatility of different stocks of finance companies.
- c. To recommend few key practical implications based on the analysis of the data.

The major findings of the study were;

- a. Using Capital Market Line, United Finance and Capital Market Limited (UFCML) has the highest expected portfolio return (11.27%) and risk (32.97%) but Peoples Finance Limited (PFL) has the lowest expected portfolio return (5.43%) and risk (6.20%).
- b. Similarly, National Finance Company Limited (NFCL) has the great performance but Peoples Finance Limited has lower performance.
- c. NFCL stock is highly correlated (0.971) with market than that of other finance companies. In most of cases coefficient of determinants of all these finance companies have greater than 0.50 (50%) means portion of systematic risk is higher than the unsystematic portion.
- d. The portfolio management of listed finance companies in Nepal is not systematically organized. In the context of portfolio risk and return of finance companies, investors have to bear higher portfolio risk to increase little bit of portfolio return.

Shrestha (2003), has conducted a study entitled, “*Portfolio Analysis on Investment of Nepalese Commercial Banks.*” The main objective of his study was to analyze, examine and interpret portfolio technique followed by Commercial Banks on their investment in various sectors. The other specific objectives were;

- a. To evaluate comparative financial performance of selected Commercial Banks in terms of investment strategies.
- b. To analyze the way commercial banks manage their risk and return on investment using portfolio concept.
- c. To find out trend of investment in different sectors.

The major findings of the study were;

- a. Commercial Banks wanted to invest in short-term basis in which return is not fixed. They hesitate to invest in long-term government securities that provide regular constant return.
- b. The total investment to total deposit ratio of selected Commercial Banks shown that Standard Chartered Bank Nepal Limited (SCBNL) is the most successful in utilizing its resources on investment than other Commercial Banks.
- c. Similarly, on the basis of return on total assets, SCBNL utilized its overall resources efficiently than other banks. To some extent, all Commercial Banks seem to be interested in using their deposits in purchasing government securities, even there is less return.
- d. The risk and return on shares and debentures are higher than other assets. The annual rate of return on shares and debentures of Commercial Banks show wide fluctuations ranging from -23.78% to 104.50%. These fluctuations in returns are caused mainly by the volatility of capital yield.

Sharma (2004), has conducted a study entitled, “*Portfolio Management of Listed Commercial Banks and Insurance Companies in Nepal.*” The main objective of his study was to analyze the risk and return of the common stock of Commercial Banks and Insurance Companies. The other specific objectives were;

- a. To analyze the investment trend of commercial banks and insurance companies.
- b. To analyze the diversifiable and un-diversifiable risk of common stock as well as portfolio return and risk.

The major findings of the study were;

- a. Based on risk and return, the shares of all the Commercial Banks are attractive for investment compared to Insurance Companies.

- b. The conflicting political and economic scenario has the adverse impact on economic activities of the companies. Therefore, Insurance Companies are unable to effectively manage its portfolio.
- c. The risk per unit of return of market is very high. So the overall market return can be regarded as attractive with respect to its risk.
- d. The unsystematic risk of all the companies was high in comparison to total risk.

Shrestha (2005), has conducted a study entitled, “*Portfolio Analysis on Common Stock of Commercial Banks in Nepal.*” The main objective of the study was to find out the level of portfolio risk and return on investment of common stock of Commercial Banks. The other objectives were;

- a. To find out the trend of NEPSE index.
- b. To analyze the risk and return of common stock of reviewed banks
- c. To find out the best portfolio from NEPSE.

The major findings of the study were;

- a. The expected return of HBL stock is highest i.e. 53.68% and NABIL is lowest i.e. 32.72% among the banks.
- b. The risks of NBBL is highest i.e. 93% and SCBNL has a lowest risk i.e. 55.42%.
- c. The correlation of stock, return and market shows that all of the banks’ stocks are highly positive correlated with the market. The correlation values of common stock of all bank with the market is nearly equal to +1.
- d. The stock price of all four listed Commercial Banks was higher than NEPSE average price of stock. Similarly, the stock prices of four commercial banks were in fluctuating trend than NEPSE index.

Rai (2009), has conducted a study entitled, “*Portfolio Management in Joint Venture Banks.*” The main objective of the study was to analyze the current

situation on investment portfolio of joint venture banks in Nepal. The specific objectives were:

- a. To analyze the risk and return ratios of sampled banks on individual assets and portfolio assets.
- b. To evaluate the financial performance of joint venture banks.
- c. To study investment portfolio structure of joint venture banks.
- d. To examine the relationship of investment and total deposits.
- e. To examine the preference given by JVBs while taking investment decision.

The major findings of the study were;

- a. In average, NABIL bank received 4.84% of the total investment in government securities as return, while the return for that on SCBNL was 4.40% and that on HBL was 3.34%.
- b. However, the investment amount in government securities of SCBNL (Rs. 7808.34 millions) was highest than that of NABIL (Rs. 3568.65 millions) and HBL (Rs. 5594.46 millions).
- c. HBL disbursed highest amount of loans & advances, i.e. Rs. 16021.22 millions, than NABIL (Rs. 14087.33 millions) and SCBNL (Rs. 9815.03 millions), and thus earned highest amount of interest, i.e. Rs. 1184.07 millions, than NABIL (Rs. 1048.63 millions) and SCBNL (Rs. 667.51 millions).

CHAPTER – III

RESEARCH METHODOLOGY

3.1 Research Design

As per the nature of the study, to achieve the objective, descriptive and analytical research design have been used. Some financial and statistical tools have been applied to examine facts and descriptive techniques have been adopted to analyze the portfolio performance of commercial banks.

3.2 Population and Sample

Currently there are 27 commercial banks operating in Nepal. The study of all these banks in this study is almost impossible. So 4 commercial banks, namely Nepal Arab Bank Limited, Standard Chartered Bank Nepal Limited, Nepal Investment Bank Limited and Nepal State Bank of India Limited have been selected randomly as sample of the study.

3.3 Nature and Sources of Data

The study is based secondary data. To analyze the portfolio performance of the commercial banks, mainly loan and advances, investment and money at short call and notice have been focused. The data have been extracted from the annual reports of NABIL, SCBNL, NIBL and SBI. Besides annual reports, the official website of sampled banks, NEPSE, SEBON and NRB have also been reviewed.

3.4 Periods Covered

For the convenience, the study covers only five fiscal years period, i.e. from the fiscal year 2003/04 to 2007/08. Since the annual reports for the fiscal year 2008/09 have not been published yet, the study covers data up to the fiscal year 2007/08.

3.5 Data Analysis Tools

The data collected from various sources leads to the logical conclusion, only if the appropriate tools and techniques are adapted to analyze such data. The collected data have no meaning if such data are not analyzed. To analyze the data in this research, the researcher has used some statistical and financial tools which are explained here.

3.5.1 Financial Tools

The major financial tools used in this research are as follows;

A) Mobilization of Fund

To achieve the financial success, effective mobilization of fund is crucial. The bank mobilizes the fund mainly in loan and advances, investment in different sectors, money at short call and notice, fixed assets and other assets. However, for the study only loan and advances, investment and money at short call and notice, which give direct income, have been analyzed.

$$\text{Loan \& Advances to Total Fund} = \frac{\text{Total Loan and Advances}}{\text{Total Fund}}$$

$$\text{Investment to Total Fund} = \frac{\text{Total Investment}}{\text{Total Fund}}$$

$$\text{Money at Short Call \& Notice to Total Fund} = \frac{\text{Total MSCN}}{\text{Total Fund}}$$

B) Return on Loan and Advances

The bank grants loan and advances to earn interest income. The higher the interest amount, the greater will be the return on loan and advances. High return is widely preferable in loan and advances. The return on loan and advances is calculated by;

$$\text{Return on Loan and Advances} = \frac{\text{Total Interest on Loan and Advances}}{\text{Total Loan and Advances}}$$

C) Return on Investment

The bank invests mainly in government securities to earn interest, corporate shares to earn dividend and capital gain, debentures to earn interest and in others like mutual fund to earn interest. The return on investment is given by;

$$\text{Return on Investment} = \frac{\text{Total Income on Investment}}{\text{Total Investment}}$$

Where,

$$\begin{aligned} \text{Total Income} = & \text{Interest in Government Securities and corporate Debentures} \\ & + \text{Dividend and Capital Gain in Corporate Shares} \\ & + \text{Interest in Other investment} \end{aligned}$$

D) Return on Money at Short Call and Notice

Besides loan and advances and investment, money at short call and notice is the other source of income of bank. The return on money at short call and notice is given by;

$$\text{Return on Money at Short Call \& Notice} = \frac{\text{Total Interest on MSCN}}{\text{Total MSCN}}$$

E) Risk on Assets

To analyze the portfolio performance, calculation of risk is equally important. Risk is defined as the variability in return. It is also called as the standard deviation in statistical terms. The risk on assets is calculated by using the following formula;

$$\text{Risk } (\sigma) = \sqrt{\frac{\sum(R - \bar{R})^2}{N - 1}}$$

F) Portfolio Return

Portfolio return is the weighted average of the expected returns of the individual assets in the portfolio. The weights are the proportion of investor's wealth invested in each asset. The portfolio return is calculated by;

$$R_p = W_A R_A + W_B R_B + \dots + W_N R_N$$

Where,

- R_p = Portfolio Return
- W_A = Weight of investment invested in stock "A"
- W_B = Weight of investment invested in stock "B"
- R_A = Return in stock "A"
- R_B = Return in stock "B"

G) Portfolio Risk

Portfolio risk is the function of the proportions invested in the assets, the risk of the assets and correlation of returns on the assets. It is also called as the standard deviation. The portfolio risk is calculated by using the following formula;

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2 W_A W_B r_{AB} \sigma_A \sigma_B}$$

Where,

- σ_p = Portfolio Risk
- σ_A = standard deviation on return on assets A
- σ_B = standard deviation on return on assets B
- W_A = weight of assets A
- W_B = weight of assets B
- r_{AB} = correlation coefficient between rate of return on assets A and assets B

3.5.2 Statistical Tools

To achieve the objectives of the study set out in first chapter, the following statistical tools have been efficiently utilized in fourth chapter to analyze the data.

A) Mean

The arithmetic mean (or simply the mean) of a list of numbers is the sum of the list divided by the number of items in the list. The mean is the most commonly-used type of average and is often referred to simply as the average.

$$\text{Mean}(\bar{X}) = \frac{x_1 + x_2 + \dots + x_n}{N}$$

B) Standard Deviation

Standard deviation is a widely used measure of the variability or dispersion, being algebraically more tractable though practically less robust than the expected deviation or average absolute deviation. It may be thought of as the average difference of the scores from the mean of distribution, how far they are away from the mean. A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data are spread out over a large range of values.

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum(X - \bar{X})^2}{N - 1}}$$

C) Coefficient of Variation

The coefficient of variation represents the ratio of the standard deviation to the mean, and it is an useful statistic for comparing the degree of variation from one data series to another, even if the means are drastically different from each other.

$$\text{C.V.} = \frac{\text{Standard Deviation} \times 100}{\text{Mean}}$$

D) Correlation Coefficient

Two variables are said to have correlation, when they are so related that the change in the value of one variable is accompanied by the change in the value of the other. One of the widely used mathematical methods of calculating the

correlation coefficient between two variables is Karl Pearson's correlation coefficient (r), which is defined by;

$$r = \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum(X - \bar{X})^2} \sqrt{\sum(Y - \bar{Y})^2}}$$

E) Probable Error

The probable error denoted by P.E. is used to measure the reliability and test of significance of correlation coefficient. Significance of relationship has been tested by using the probable error (P.E.) and it is denoted by the following model:

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1 - r^2}{\sqrt{n}}$$

Where, r = the value of correlation coefficient

n = number of pairs of observations

if $r < \text{P.E.}$, it is insignificant, i.e. there is no evidence of correlation

if $r > 6 \text{ P.E.}$, it is significant

F) Regression Line

Regression line refers to any approach to modeling the relationship between one or more variables denoted Y and one or more variables denoted X , such that the model depends linearly on the unknown parameters to be estimated from the data. The simple regression line of Y on X is given by;

$$Y = a + bX \dots \dots \dots (i)$$

Where, Y = Dependent Variable

a = Constant

b = Regression Coefficient

X = Independent Variable

CHAPTER – IV

DATA PRESENTATION AND ANALYSIS

This part of the study includes analysis of mobilization of fund, risk and return in individual assets, portfolio risk and return, correlation and regression analysis. At the end, the major findings of the analysis have been presented.

4.1 Mobilization of Fund

Effective fund mobilization plays crucial role in the sustainability of the organization. So, in banking sector also, each bank has to make shrewd decision to mobilize the available fund in the most fruitful sector. Mainly the bank mobilizes its fund in loan and advances, investment; government securities, corporate share and debentures, others, and money at short call and notice to gain return.

4.1.1 Nepal Arab Bank Limited

The mobilization of fund available in loan and advances, investment and money at short call and notice for the five year periods in NABIL bank has been presented in the Table 4.1.

Table 4.1
Mobilization of Fund in NABIL

FY	Loan & Adv.		Investment		Money at Short Call and Notice		Total Fund
	Amount	%	Amount	%	Amount	%	Amount
2003/04	8189.99	48.91	5835.95	34.85	918.73	5.49	14944.67
2004/05	10586.17	62.04	4275.53	25.06	868.43	5.09	15730.13
2005/06	12922.54	57.87	6178.53	27.67	1734.90	7.77	20835.97
2006/07	15545.78	57.04	8945.31	32.82	563.53	2.07	25054.62
2007/08	21365.05	57.54	9939.77	26.77	1952.36	5.26	33257.18
Mean	13721.91	56.68	7035.02	29.43	1207.59	5.13	21964.51
S.D.	5069.96	4.78	2338.42	4.19	601.25	2.03	7524.83
C.V.%	36.95	8.43	33.24	14.23	49.79	39.55	34.26

(Source: Appendix – I)

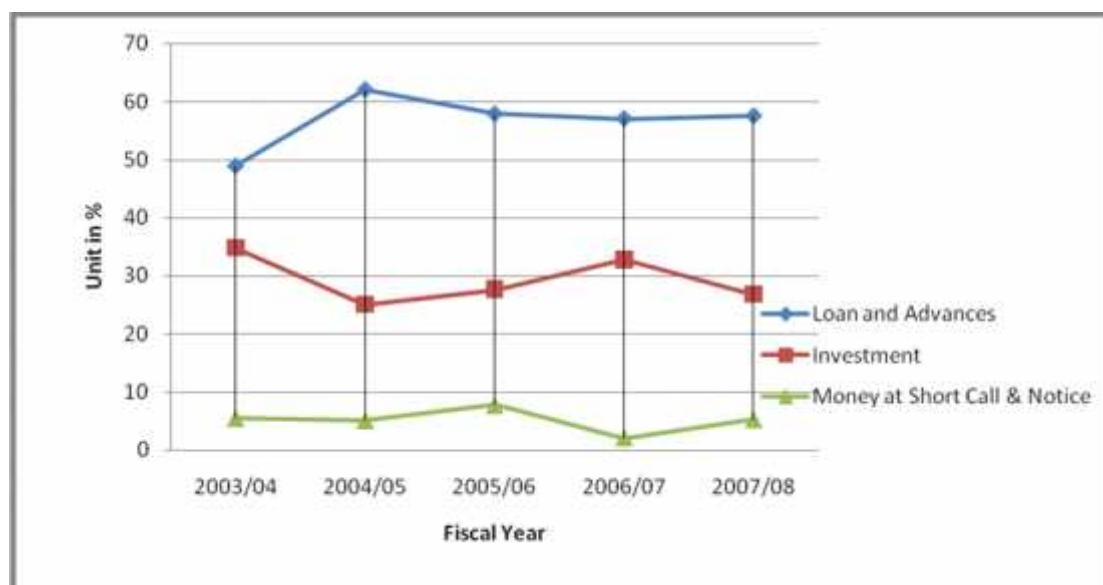
The Table 4.1 showed that NABIL mobilized major portion of its fund in granting loans and advances. In each year, the amount of loans and advances disbursed was greater than the investment made and the amount of money at short call and notice. The loans and advances of NABIL was Rs. 8189.99 millions, which followed increasing trend, in the fiscal year 2003/04 and finally reached to Rs. 21365.05 millions in the fiscal year 2007/08. In average, Rs. 13721.91 millions was disbursed in loans and advances within the five years period.

However, the investment amount made in government securities, corporate shares and debentures and others followed increasing trend except in the fiscal year 2004/05. The investment made was Rs. 5835.95 millions in the fiscal year 2003/04, which decreased to Rs. 4275.53 millions in the fiscal year 2004/05 and then followed increasing trend from then and finally reached to Rs. 9939.77 millions in the fiscal year 2007/08. In average, Rs. 7035.02 millions was invested in the five years period.

Also, the money at short call and notice of NABIL also fluctuated within the five years period. The money at short call and notice in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 was Rs. 918.73 millions, Rs. 868.43 millions, Rs. 1734.90 millions, Rs. 563.53 millions and Rs. 1952.36 millions respectively. In average Rs. 1207.59 millions was been mobilized at money at short call and notice.

Since loans and advances, investment and money at short call and notice covered 56.68%, 29.43% and 5.13% of total funds available, it can be concluded that NABIL gave high priority in loans & advances and money at short call and notice received low priority while mobilizing fund.

Figure 4.1
Mobilization of Fund in NABIL



4.1.2 Standard Chartered Bank Nepal Limited

The Table 4.2 depicts the fund mobilization of SCBNL and the respective percentage of the fund mobilized in each sector.

Table 4.2
Mobilization of Fund in SCBNL

(Rs. in Million)

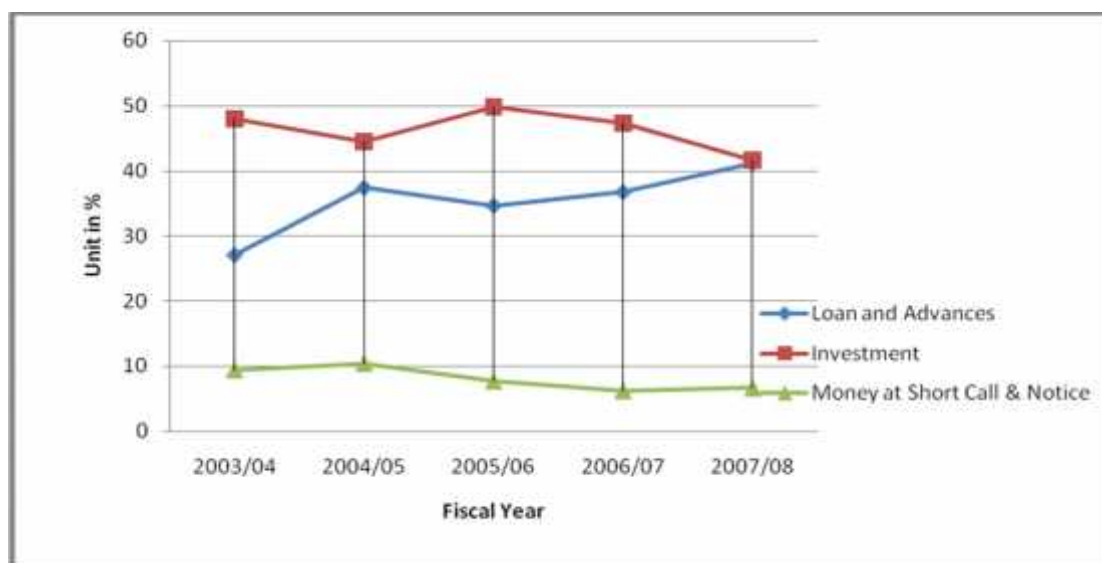
FY	Loan & Adv.		Investment		Money at Short Call and Notice		Total Fund
	Amount	%	Amount	%	Amount	%	Amount
2003/04	6410.24	27.11	11360.33	48.05	2218.60	9.38	23642.06
2004/05	8143.21	37.39	9702.55	44.54	2259.69	10.37	21781.68
2005/06	8935.42	34.67	12847.54	49.84	1977.27	7.67	25776.33
2006/07	10502.64	36.73	13553.23	47.39	1761.15	6.16	28596.69
2007/08	13718.60	41.15	13902.82	41.71	2197.54	6.59	33335.79
Mean	9542.02	35.41	12273.29	46.31	2082.85	8.04	26626.51
S.D.	2761.31	5.20	1736.78	3.20	210.65	1.80	4527.64
C.V.%	28.94	14.67	14.15	6.91	10.11	22.46	17.00

(Source: Appendix – I)

The Table 4.2 showed that unlike NABIL, SCBNL focused to mobilize its fund mainly on investment. The investment amount in each year was greater than the loans and advances disbursed, and money at short call and notice. The investment made by SCBNL increased, except in the fiscal year 2004/05. The investment amount ranged from Rs. 9702.55 millions in the fiscal year 2004/05 to 13902.82 millions in the fiscal year 2007/08. In average, SCBNL made Rs. 12273.29 millions investment in the five fiscal year periods. Similarly, the loans and advances followed increasing trend in the five years period. Initially, the loan and advances disbursed was Rs. 6410.24 millions in the base year 2003/04 and reached to Rs. 13718.60 millions in the fiscal year 2007/08. In average, Rs. 9542.02 millions was disbursed in loan and advances. However, the money at short call and notice followed fluctuating trend in the periods taken for research. The amount was highest (Rs. 2259.69 millions) in the fiscal year 2004/05 and lowest (Rs. 1761.15 millions) in the fiscal year 2006/07. In average, Rs. 2082.85 millions was mobilized in money at short call and notice.

Eventually, in average 46.31%, 35.41% and 8.04% of the total fund available was mobilized in investment, loan and advances and money at short call and notice. However, the highest coefficient of variation in money at short call and notice (C.V. = 22.46%) indicated that there existed highest inconsistency in the representation of total fund in money at short call and notice with comparison to loan and advances (C.V. = 14.67%) and investment (C.V. = 6.91%).

Figure 4.2
Mobilization of Fund in SCBNL



4.1.3 Nepal Investment Bank Limited

The fund mobilization of NIBL mainly in loan and advances, investment and money at short call and notice and their respective percentage has been delineated in the Table 4.3.

Table 4.3
Mobilization of Fund in NIBL

(Rs. in Million)

FY	Loan & Adv.		Investment		Money at Short Call and Notice		Total Fund
	Amount	%	Amount	%	Amount	%	Amount
2003/04	7130.13	53.79	3862.48	29.14	310.00	2.34	13255.50
2004/05	10126.06	63.04	3934.19	24.49	140.00	0.87	16063.54
2005/06	12776.21	59.90	5602.87	26.27	70.00	0.33	21330.14
2006/07	17286.43	62.65	6505.68	23.58	362.97	1.32	27590.84
2007/08	26996.65	69.45	6874.02	17.68	0.00	0.00	38873.31
Mean	14863.10	61.77	5355.85	24.23	176.59	0.97	23422.67
S.D.	7740.95	5.67	1408.83	4.23	155.26	0.92	10222.56
C.V.%	52.08	9.18	26.30	17.46	87.92	94.34	43.64

(Source: Appendix – I)

The Table 4.3 showed that NIBL mobilized major portion of its fund in loans and advances. The loan and advances amount disbursed was in increasing trend and increased by almost by 3.75 times within the five year period. The loan and advances was Rs. 7130.13 millions in the fiscal year 2003/04 and reached to Rs. 26996.65 millions in the fiscal year 2007/08. In average, NIBL disbursed Rs. 14863.10 millions in the five year periods. The loan and advances disbursed represented 53.79%, 63.04%, 59.90%, 62.65% and 69.45% of the total fund in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average 61.77% of the total fund had been mobilized in loans and advances. Thus, loans and advances was the dominant outsource of the fund.

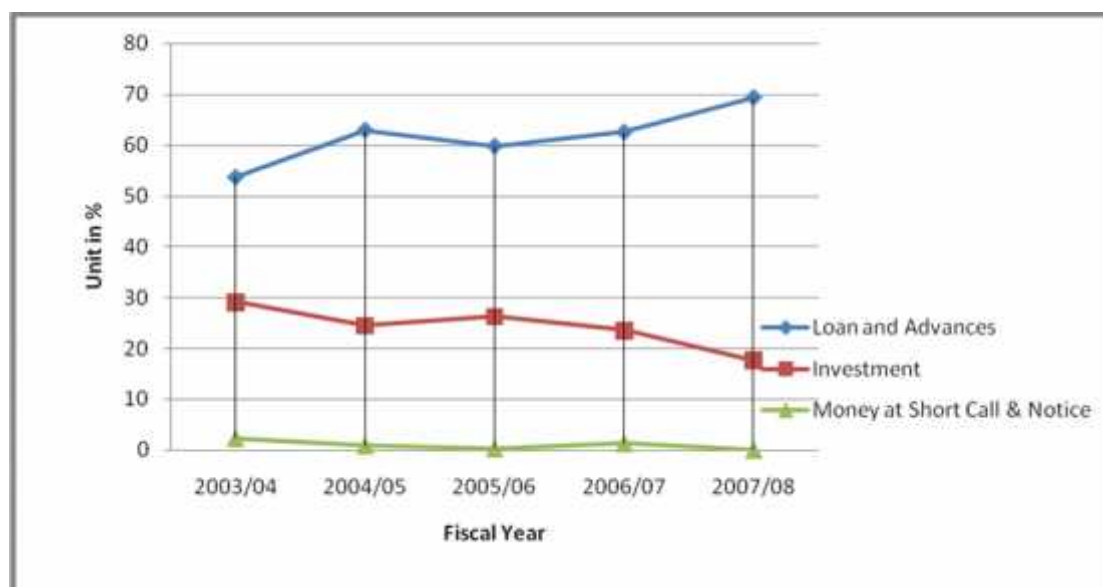
Likewise, the investment amount of NIBL followed also increasing trend within the five year periods. The investment amount was highest (Rs. 6874.02 millions) in the fiscal year 2007/08 and lowest (Rs. 3862.48 millions) in the fiscal year 2003/04. In average Rs. 5355.85 millions was invested by NIBL. However, the representation of investment amount in total fund fluctuated during the entire period. The representation of investment amount on total fund ranged from 17.68% in the fiscal year 2007/08 to 29.14% in the fiscal year 2003/04. In average 24.23% of the total fund had been used in investment.

Similarly, the money at short call and notice was highest (Rs. 362.97 millions) in the fiscal year 2006/07 and lowest (nil) in the fiscal year 2007/08. In average Rs. 176.59 millions had been mobilized in money at short call and notice. Also, the representation of money at short call and notice in total fund ranged from 0% in the fiscal year 2007/08 to 2.34% in the fiscal year 2003/04. In average, the money at short call and notice covered 0.97% of the total fund.

On the basis of above analysis, it can be considered that loans and advances was the major source of mobilizing total fund than investment in various activities and money at short call and notice.

Figure 4.3

Mobilization of Fund in NIBL



4.1.4 Nepal State Bank of India Limited

The fund mobilization process of SBI in loan and advances, investment, and money at short call and notice has been presented in the Table 4.4.

Table 4.4

Mobilization of Fund in SBI

(Rs. in Million)

FY	Loan & Adv.		Investment		Money at Short Call and Notice		Total Fund
	Amount	%	Amount	%	Amount	%	Amount
2003/04	5143.66	60.94	1907.52	22.60	0.00	0.00	8440.41
2004/05	6213.88	62.37	2607.68	26.17	123.11	1.24	9963.02
2005/06	7626.74	58.51	3610.78	27.70	363.20	2.79	13035.84
2006/07	9460.45	68.05	2659.45	19.13	350.00	2.52	13901.20
2007/08	12113.70	70.48	3088.89	17.97	304.01	1.77	17187.45
Mean	8111.69	64.07	2774.86	22.72	228.06	1.66	12505.58
S.D.	2760.49	5.02	630.66	4.25	159.63	1.11	3432.89
C.V.%	34.03	7.83	22.73	18.70	69.99	66.96	27.45

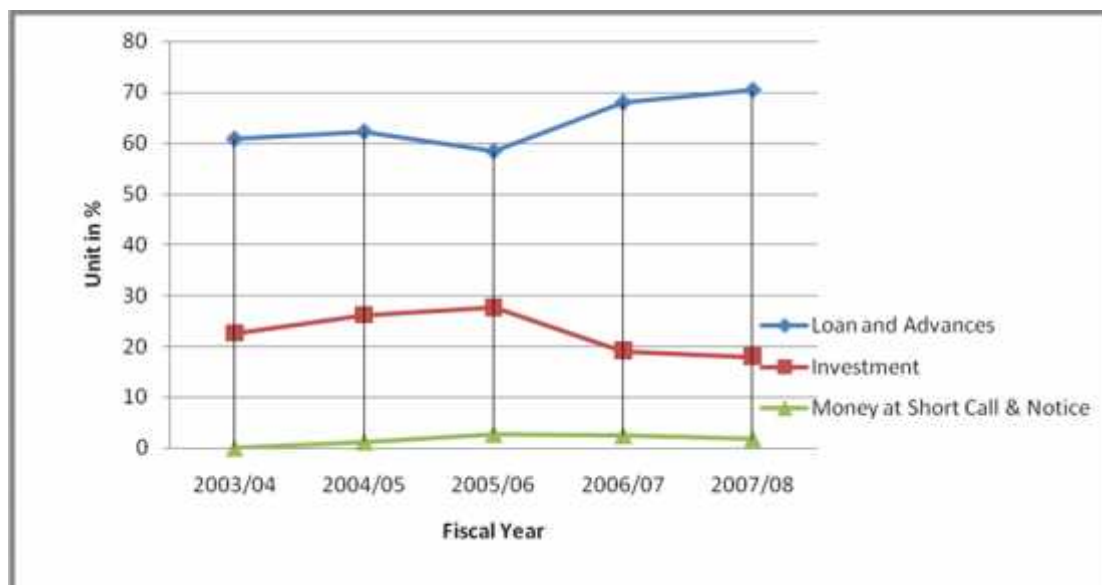
(Source: Appendix – I)

The Table 4.4 revealed that the mobilization of total fund in loan and advances by SBI was greatest than that in investment and money at short call and notice. The loan and advances amount, which was in increasing trend, ranged from Rs. 5143.66 millions in the fiscal year 2003/04 to Rs. 12113.70 millions in the fiscal year 2007/08. Also, the loan and advances representation on total fund ranged from 58.51% in the fiscal year 2005/06 to 70.48% in the fiscal year 2007/08. In average, SBI disbursed Rs. 8111.69 millions in loans and advances, which represented 64.07% of the total fund.

Similarly, except in the fiscal year 2006/07, the investment amount of SBI was also in increasing trend. The investment amount ranged from Rs. 1907.52 millions in the fiscal year 2003/04 to Rs. 3088.89 millions in the fiscal year 2007/08. And the representation on investment amount in total fund ranged from 17.97% in the fiscal year 2007/08 to 26.17% in the fiscal year 2004/05. In average, SBI mobilized Rs. 2774.86 millions in investment, which represented 22.72% of the total fund.

However, the mobilization of fund in money at short call and notice fluctuated during the entire periods. SBI mobilized no amount on money at short call and notice in the fiscal year 2003/04, and in the fiscal year 2004/05, 2005/06, 2006/07 and 2007/08, the money at short call and notice was Rs. 123.11 millions, Rs. 363.20 millions, Rs. 350.00 millions and Rs. 304.01 millions respectively. Also, the money at short call and notice represented 1.24%, 2.79%, 2.52% and 1.77% of the total fund within the same last four years. In average, SBI mobilized Rs. 228.06 millions in money at short call and notice, which represented 1.66% of the total fund.

Figure 4.4
Mobilization of Fund in SBI



4.2 Risk and Return in Individual Assets

In this part of the study, the risk and return in each individual assets, mainly loan and advances, investment and money at short call and notice, of each selected bank has been depicted.

4.2.1 Nepal Arab Bank Limited

4.2.1.1 Risk and Return in Loans and Advances

Loan and Advances is the major source of income of each bank and hence is also the main function of bank. The bank grants loan to gain interest. The interest earned by NABIL in loan and advances, the return rate and the risk associated with the return has been presented in the Table 4.5.

Table 4.5
Risk and Return on Loans and Advances of NABIL
(Rs. in Millions)

FY	Interest	Loans and Advances	Return on LA (R_{LA})
2003/04	761.62	8189.99	9.30
2004/05	831.83	10586.17	7.86
2005/06	988.41	12922.54	7.65
2006/07	1167.26	15545.78	7.51
2007/08	1496.24	21365.05	7.00
Mean	1049.07	13721.91	7.86
S.D. (Risk)	294.72	5069.96	0.86
C.V.%	28.09	36.95	10.97

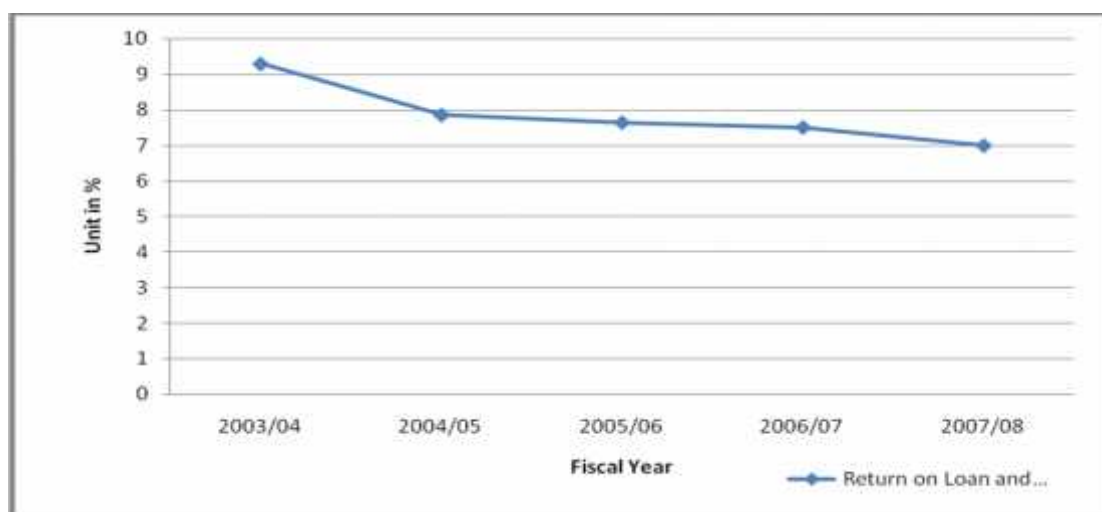
(Source: Financial Reports of NABIL)

The Table 4.5 showed that in each year the amount of interest collection of NABIL was in increasing trend along with the amount of loans and advances disbursed. The interest amount received ranged from Rs. 761.62 millions in the fiscal year 2003/04 to Rs. 1496.24 millions in the fiscal year 2007/08. In average, NABIL collected Rs. 10498.07 millions as interest income from loans and advances.

However, the pace of interest income growth was not same as the pace of loans and advances increment, as a result the return on loans and advances followed decreasing trend. The return on loans and advances of NABIL was 9.30%, 7.86%, 7.65%, 7.51% and 7.00% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, NABIL earned 7.86% of the total loans and advances disbursed as interest income. The coefficient of variation on return on loan and advances was 10.97%, which indicated quite consistency in the return. The table also showed that the risk in return on loan and advances of NABIL was 0.86% only.

Figure 4.5

Return on Loans and Advances of NABIL



4.2.1.2 Risk and Return on Investment

The bank makes investment mainly in government securities, corporate shares and debentures and others. From government securities and debenture, the bank gets interest income, while from share, the bank gets dividend income and capital gain. The income, return and risk in investment of NABIL have been presented in the Table 4.6.

Table 4.6

Risk and Return on Investment of NABIL

(Rs. in Millions)

FY	Income	Investment	Return on Inv. ($R_{Inv.}$)
2003/04	230.36	5835.95	3.95
2004/05	194.47	4275.53	4.55
2005/06	264.21	6178.53	4.28
2006/07	389.25	8945.31	4.35
2007/08	451.12	9939.77	4.54
Mean	305.88	7035.02	4.33
S.D. (Risk)	109.43	2338.42	0.24
C.V.%	35.77	33.24	5.67

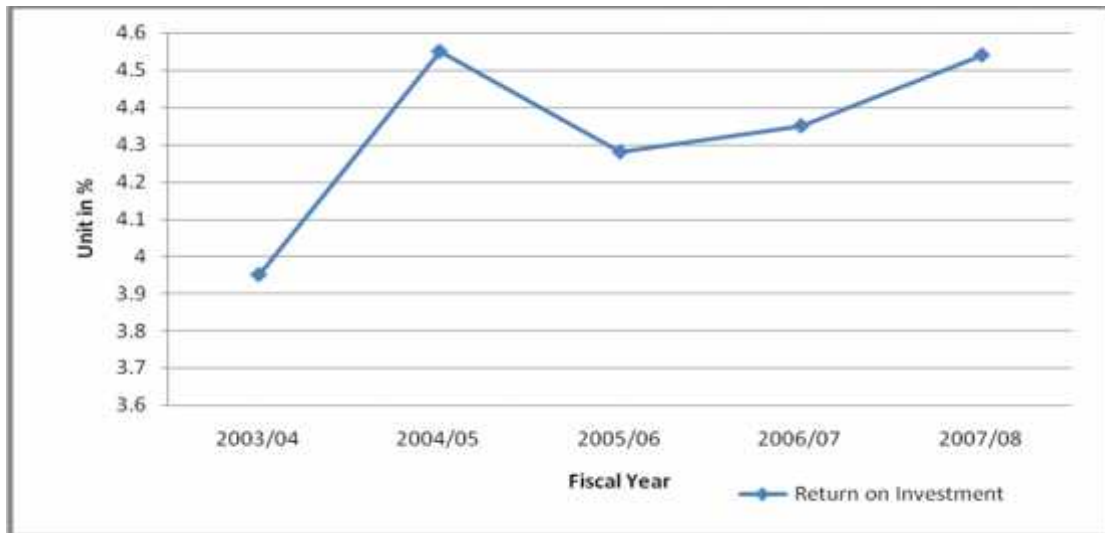
(Source: Financial Reports of NABIL)

The Table 4.6 showed the income earned by NABIL from investing in different sectors like in government securities, in corporate shares and debentures and in others. The table showed that except in the fiscal year 2004/05, the income earned on investment followed increasing trend. The income earned from investment in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 was Rs. 230.36 millions, Rs. 194.47 millions, Rs. 264.21 millions, Rs. 389.25 millions and Rs. 451.12 millions respectively. In average, NABIL earned Rs. 305.88 millions from Rs. 7035.02 millions investment.

Similarly, the return on investment ranged from 3.95% in the fiscal year 2003/04 to 4.55% in the fiscal year 2004/05. In average, NABIL earned 4.33% of the total investment. Also, the coefficient of variation of 5.67% indicated that there existed higher consistency in the ratio. Further, the risk on return on investment of NABIL was 0.24% only.

Figure 4.6

Return on Investment of NABIL



4.2.1.3 Risk and Return on Money at Short Call and Notice

Money at short call and notice is also the other income generating investment of bank. The return and risk in money at short call and notice of NABIL have been presented in the Table 4.7.

Table 4.7**Risk and Return on Money at Short Call and Notice of NABIL****(Rs. in Millions)**

FY	Interest	Money at Short Call and Notice	Return on MSCN (R_{MSCN})
2003/04	10.19	918.73	1.11
2004/05	21.44	868.43	2.47
2005/06	39.48	1734.90	2.28
2006/07	62.94	563.53	11.17
2007/08	35.41	1952.36	1.81
Mean	33.89	1207.59	3.77
S.D. (Risk)	19.96	601.25	4.17
C.V.%	58.90	49.79	110.71

(Source: Financial Reports of NABIL)

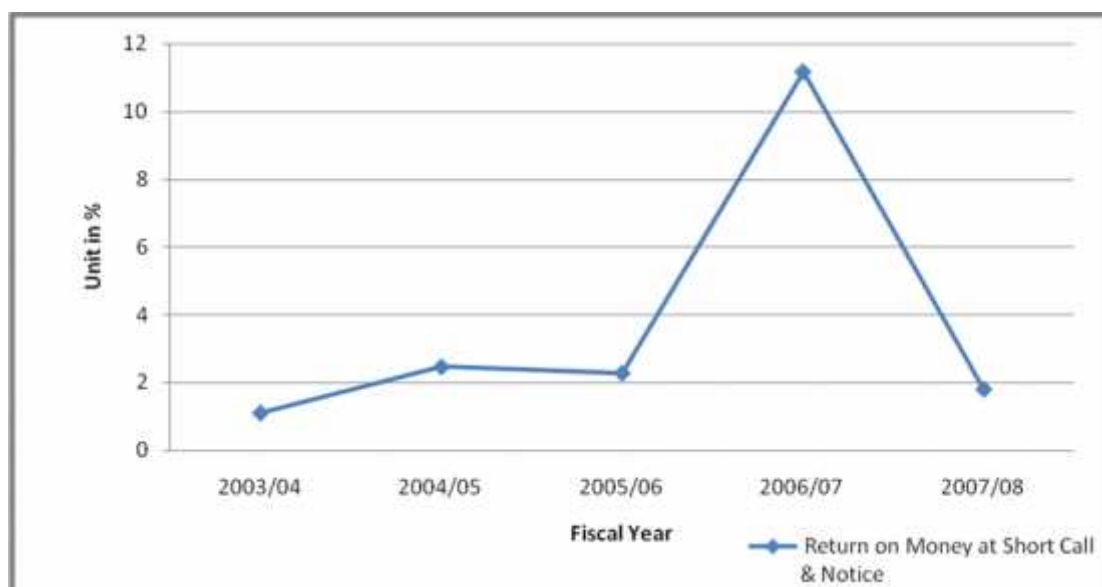
The Table 4.7 showed that the interest income earned by NABIL from money at short call and notice was increasing trend up to the fiscal year 2006/07, i.e. from Rs. 10.19 millions in the fiscal year 2003/04 to Rs. 62.94 millions in the fiscal year 2006/07, and decreased in the fiscal year 2007/08, i.e. Rs. 35.41 millions in the fiscal year 2007/08. However, the amount on money at short call and notice was in fluctuating trend. In average, NABIL earned Rs. 33.89 millions as interest income in money at short call and notice. However, the coefficient of variation on such interest earning showed higher inconsistency (C.V. = 58.90%).

Likewise, the return on money at short call and notice (R_{MSCN}) was in fluctuating trend. The return was 1.11%, 2.47%, 2.28%, 11.17% and 1.81% of money at short call and investment in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average NABIL earned 3.77% of the total amount of money at short call and notice and the coefficient of variation was also 110.71%, which indicated higher inconsistency in the return.

Further, the standard deviation on the return on money at short call and notice was 4.17%, which also indicated higher risk.

Figure 4.7

Return on Money at Short Call and Notice of NABIL



4.2.1.4 Comparison of Risk and Return of NABIL

Under this topic, the risk and return on different individual assets of NABIL have been compared.

Table 4.8

Comparison of Risk and Return on Individual Assets of NABIL

Particulars	Loan & Adv.	Investment	Money at Short Call & Notice	Favorable
Average Income	1049.07	305.88	33.89	LA
Return %	7.86	4.33	3.77	LA
Risk %	0.86	0.24	4.17	Inv.

(Source: Table 4.5, Table 4.6 & Table 4.7)

The Table 4.8 showed the comparative average income, return and risk on each individual assets of NABIL. Further, on the basis of average return, the loan and advances was most fruitful, since it yield the highest return (7.86%). While for risk averter, the investment of NABIL was most desirable, since the investment carried lowest risk (0.24%). Thus, to improve the portfolio

management NABIL should increase the amount in both loan and advances and investment and should decrease the amount in money at short call and notice, which carried highest risk.

4.2.2 Standard Chartered Bank Nepal Limited

4.2.2.1 Risk and Return on Loans and Advances

The risk and return associated with the granting of loan and advances of SCBNL have been presented in the Table 4.9.

Table 4.9
Risk and Return on Loans and Advances of SCBNL

(Rs. in Millions)

FY	Interest	Loans and Advances	Return on LA (R_{LA})
2003/04	558.01	6410.24	8.70
2004/05	581.66	8143.21	7.14
2005/06	596.62	8935.42	6.68
2006/07	728.59	10502.64	6.94
2007/08	872.69	13718.60	6.36
Mean	667.51	9542.02	7.16
S.D. (Risk)	132.49	2761.31	0.91
C.V.%	19.85	28.94	12.69

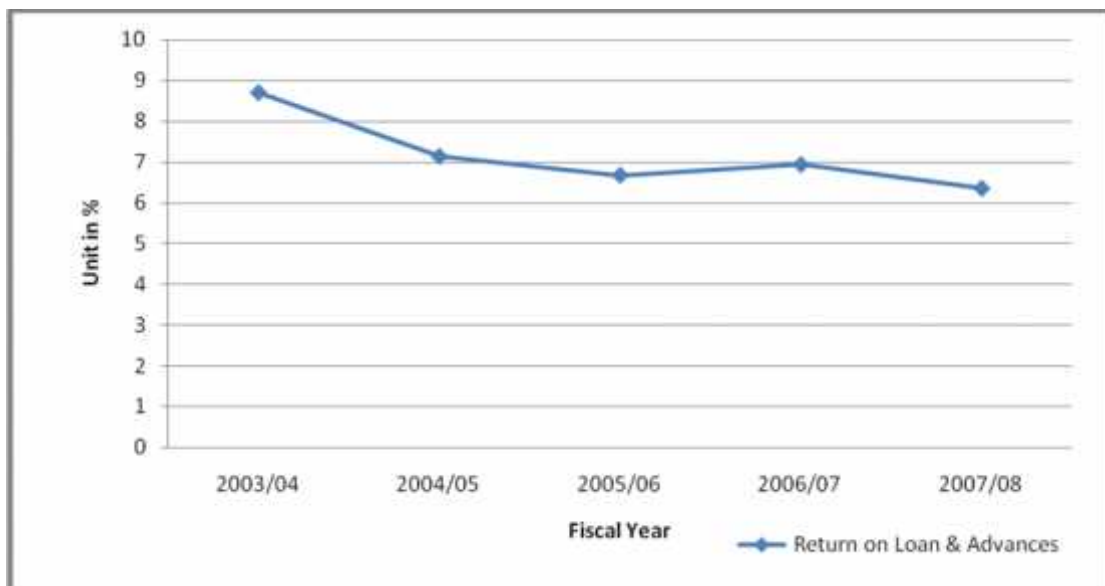
(Source: Financial Reports of SCBNL)

The Table 4.9 showed that the interest income earned by SCBNL in loans and advances disbursed was in increasing trend. The interest income on loans and advances of SCBNL was Rs. 558.01 millions, Rs. 581.66 millions, Rs. 596.62 millions, Rs. 728.59 millions and Rs. 872.69 millions in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, SCBNL earned Rs. 667.51 millions as interest income on loans and advances. However, the coefficient of variation of 19.85% indicated inconsistency in the interest amount.

The table showed that along with the increment in loans and advances disbursed, the interest amount earned also increased. But the pace of growth in interest amount received was not same as the pace of growth of loan and advances disbursed, as a result the return on loan and advances of SCBNL did not follow the increasing trend. The return on loan and advances decreased for the first three years, i.e. from 8.70% in the fiscal year 2003/04 to 6.68% in the fiscal year 2005/06, and then slightly increased in the fiscal year 2006/07, i.e. 6.94%, and finally decreased to 6.36% in the fiscal year 2007/08. In average, SCBNL achieved 7.16% of the loans and advances as return. Also, the risk on return was 0.91% only and the coefficient of variation (12.69%) indicated quite uniformity in the ratio.

Figure 4.8

Return on Loans and Advances of SCBNL



4.2.2.2 Risk and Return on Investment

SCBNL has mobilized greatest portion of its fund in investment. So the risk and return on investment of SCBNL have been depicted in the table below.

Table 4.10
Risk and Return on Investment of SCBNL
(Rs. in Millions)

FY	Income	Investment	Return on Inv. (R_{Inv.})
2003/04	447.74	11360.33	3.94
2004/05	438.95	9702.55	4.52
2005/06	548.38	12847.54	4.27
2006/07	608.39	13553.23	4.49
2007/08	644.30	13902.82	4.63
Mean	537.55	12273.29	4.37
S.D. (Risk)	92.63	1736.78	0.27
C.V.%	17.23	14.15	6.28

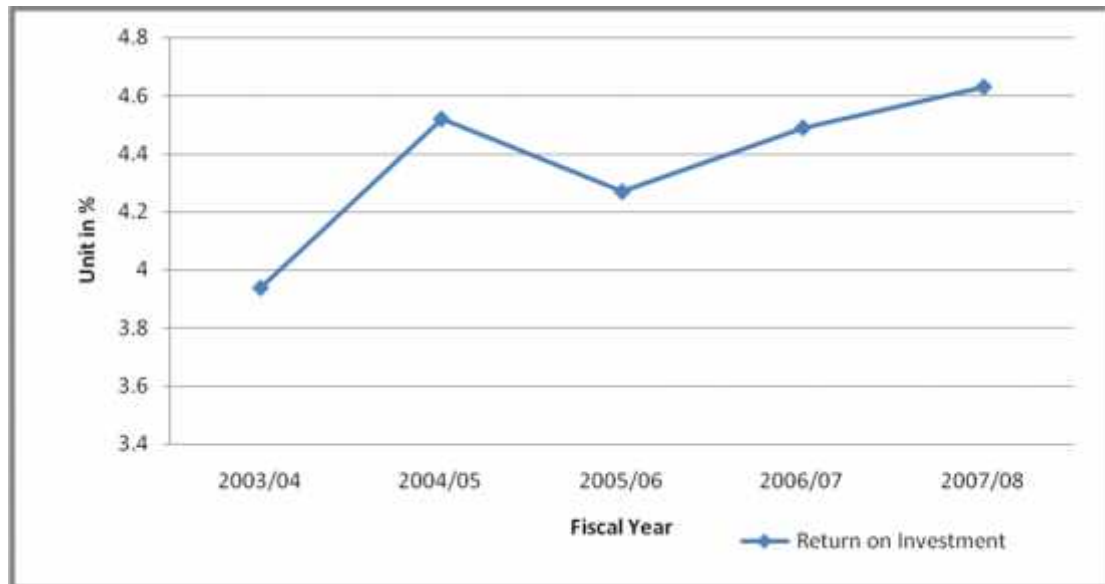
(Source: Financial Reports of SCBNL)

The Table 4.10 showed that the income earned by SCBNL by investing in various sectors, such as government securities, corporate shares and debentures, mutual fund, foreign banks, was in increasing trend. The income on investment was initially Rs. 447.74 millions in the fiscal year 2003/04 and reached to Rs. 644.30 millions in the fiscal year 2007/08. In average, SCBNL earned Rs. 537.55 millions as income on investment. Regardless of decrease in investment amount in the fiscal year 2004/05, the income on investment in that specific year increased.

However, excluding fiscal year 2005/06 it can be considered that the return on investment of SCBNL was in increasing trend. The return on investment of SCBNL was 3.94%, 4.52%, 4.27%, 4.49% and 4.63% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, SCBNL earned 4.37% of the total investment amount as return. And the risk on such investment return was 0.27% only, which was quite low.

Figure 4.9

Return on Investment of SCBNL



4.2.2.3 Risk and Return on Money at Short Call and Notice

The risk and return in money at short call and notice of SCBNL bank have been presented in the Table 4.11.

Table 4.11

Risk and Return on Money at Short Call and Notice of SCBNL

(Rs. in Millions)

FY	Interest	Money at Short Call and Notice	Return on MSCN (R_{MSCN}.)
2003/04	35.31	2218.60	1.59
2004/05	53.30	2259.69	2.36
2005/06	56.48	1977.27	2.86
2006/07	95.18	1761.15	5.40
2007/08	80.32	2197.54	3.65
Mean	64.12	2082.85	3.17
S.D. (Risk)	23.63	210.65	1.46
C.V.%	36.85	10.11	45.87

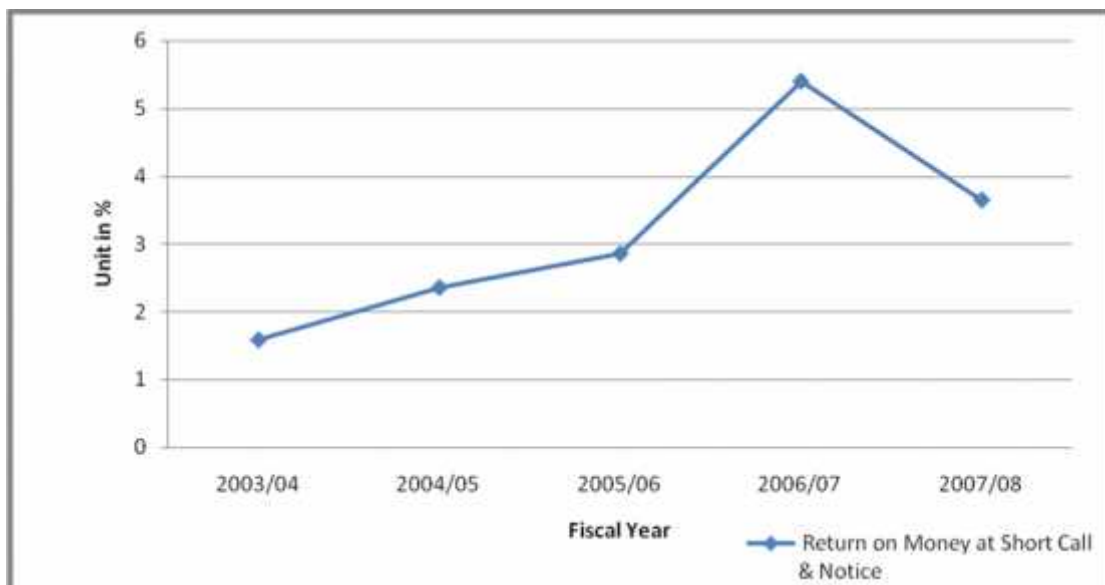
(Source: Financial Reports of SCBNL)

The Table 4.11 showed that the interest income earned on money at short call and notice was more than doubled within the five years period. The interest income on money at short call and notice was Rs. 35.31 millions in the fiscal year 2003/04, which increased to Rs. 53.30 millions in the fiscal year 2004/05, Rs. 56.48 millions in the fiscal year 2005/06, Rs. 95.18 millions in the fiscal year 2006/07 and Rs. 80.32 millions in the fiscal year 2007/08. In average, Rs. 64.12 millions interest was earned by SCBNL on money at short call and notice.

Similarly, the return on money at short call and notice increased for the first four years, i.e. from 1.59% in the fiscal year 2003/04 to 5.40% in the fiscal year 2006/07, and then decreased in the final year, i.e. 3.65%. In average, the return on money at short call and notice of SCBNL was 3.17% and the standard deviation on such return was 1.46%, which indicated high risk, and the coefficient of variation was 45.87%, which represented high inconsistency in the return.

Figure 4.10

Return on Money at Short Call and Notice of SCBNL



4.2.2.4 Comparison of Risk and Return of SCBNL

Under this topic, the risk and return of various individual assets of SCBNL have been compared to recognize the highest returning assets and the lowest risk associated assets.

Table 4.12

Comparison of Risk and Return on Individual Assets of SCBNL

Particulars	Loan & Adv.	Investment	Money at Short Call & Notice	Favorable
Average Income	667.51	537.55	64.12	LA
Return %	7.16	4.37	3.17	LA
Risk %	0.91	0.37	1.46	Inv.

(Source: Table 4.9, Table 4.10 & Table 4.11)

The Table 4.12 showed that the loan and advances of SCBNL yielded highest return (7.16%) than investment (4.37%) and money at short call and notice (1.46%). In addition, the table showed that the investment carried lowest risk (0.37%) than loan and advances (0.91%) and money at short call and notice (1.46%). Thus, to enhance the portfolio management, SCBNL should divert the amount of money at short call and notice in loan and advances and in investment.

4.2.3 Nepal Investment Bank Limited

4.2.3.1 Risk and Return on Loan and Advances

Like NABIL, NIBL has also given more preference to loan and advances while mobilizing the fund. So to recognize whether the loan and advances of NIBL is really fruitful and has low risk, the calculation of risk and return is essential.

Table 4.13

Risk and Return on Loans and Advances of NIBL

(Rs. in Millions)

FY	Interest	Loans and Advances	Return on LA (R_{LA})
2003/04	663.02	7130.13	9.30
2004/05	769.20	10126.06	7.60
2005/06	964.69	12776.21	7.55
2006/07	1302.12	17286.43	7.53
2007/08	1907.26	26996.65	7.06
Mean	1121.26	14863.10	7.81
S.D. (Risk)	502.23	7740.95	0.86
C.V.%	44.79	52.08	11.02

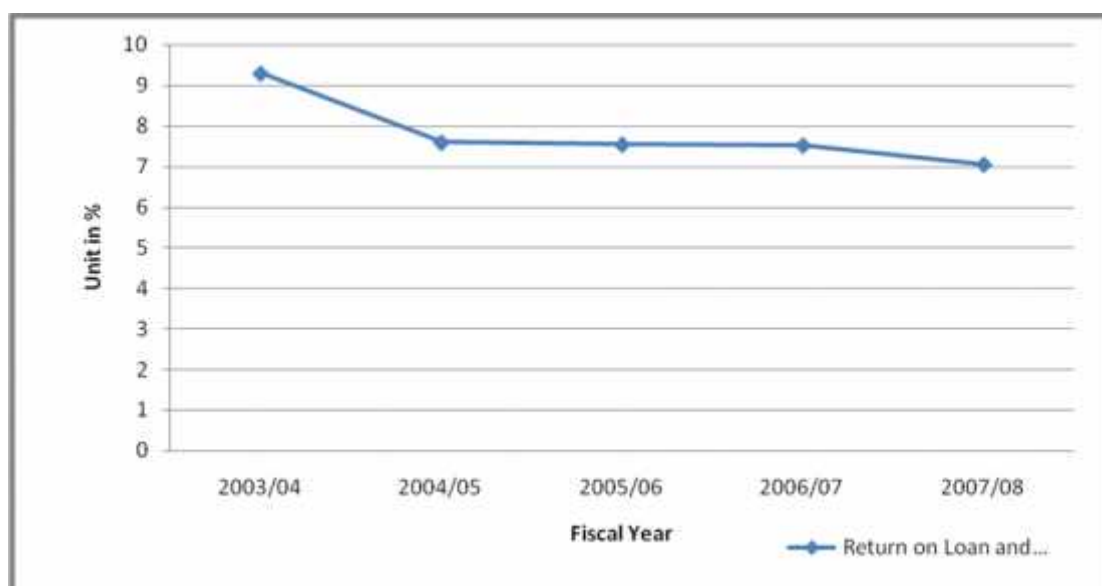
(Source: Financial Reports of NIBL)

The Table 4.13 revealed that the interest income earned by NIBL on loan and advances disbursed was in increasing trend along with the loan and advances disbursement. The interest earned on loans and advances was Rs. 663.02 millions, Rs. 769.20 millions, Rs. 964.69 millions, Rs. 1302.12 millions and Rs. 1907.26 millions respectively. In average, NIBL earned Rs. 1121.26 millions as interest income in loan and advances.

Since the return on loan and advance was in decreasing trend, it can be considered that the speed of the growth of the interest income was lower than the speed of the growth of the loan and advances. The return on loan and advances ranged from 7.06% in the fiscal year 2007/08 to 9.30% in the fiscal year 2003/04. In average, NIBL achieved 7.81% of the total loan and advances as interest return. And the standard deviation of 0.86% indicated that there existed lower risk in the return.

Figure 4.11

Return on Loans and Advances of NIBL



4.2.3.2 Risk and Return on Investment

The return on investment of NIBL and the risk associated with it has been presented in the Table 4.14.

Table 4.14

Risk and Return on Investment of NIBL

(Rs. in Millions)

FY	Income	Investment	Return on Inv. ($R_{Inv.}$)
2003/04	47.32	3862.48	1.23
2004/05	70.51	3934.19	1.79
2005/06	94.01	5602.87	1.68
2006/07	107.40	6505.68	1.65
2007/08	157.35	6874.02	2.29
Mean	95.32	5355.85	1.73
S.D. (Risk)	41.58	1408.83	0.38
C.V.%	43.62	26.30	22.05

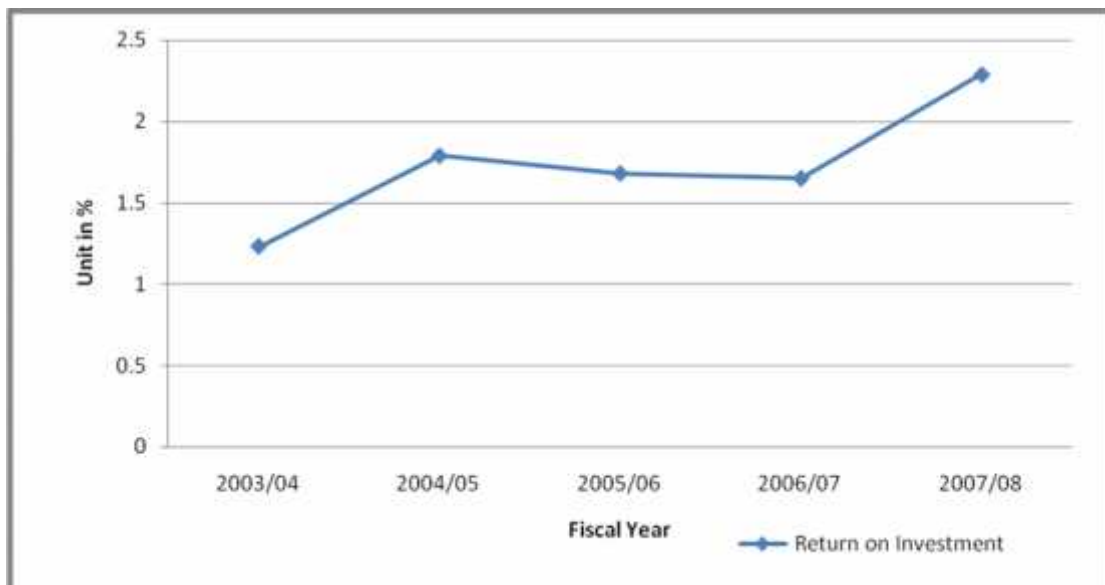
(Source: Financial Reports of NIBL)

The Table 4.14 depicted that the income earned on investment activities like investment in government securities, corporate shares and debentures, and others was in increasing trend. NIBL earned Rs. 47.32 millions, Rs. 70.51

millions, Rs. 94.01 millions, Rs. 107.40 millions and Rs. 157.35 millions as income in investment in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The average earning on investment within these five year periods was Rs. 95.32 millions and the coefficient of variation on such earning was 43.62%, indicating high inconsistency.

However, the return on investment of NIBL was found to be in fluctuating trend. The return on investment of NIBL in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 was 1.23%, 1.79%, 1.68%, 1.65% and 2.29% respectively. Also, the average return on investment was 1.73% and the coefficient of variation was 22.05%. Finally, the risk on return on investment was 0.38%, which was quite low.

Figure 4.12
Return on Investment of NIBL



4.2.3.3 Risk and Return on Money at Short Call and Notice

Money at short call and notice got the third priority while mobilizing fund in NIBL. The risk and return in money at short call and notice of NIBL have been presented in the Table 4.15.

Table 4.15**Risk and Return on Money at Short Call and Notice of NIBL****(Rs. in Millions)**

FY	Interest	Money at Short Call and Notice	Return on MSCN (R_{MSCN}.)
2003/04	20.03	310.00	6.46
2004/05	46.94	140.00	33.53
2005/06	16.42	70.00	23.46
2006/07	183.07	362.97	50.44
2007/08	0.00	0.00	0.00
Mean	53.29	176.59	22.78
S.D. (Risk)	74.48	155.26	20.41
C.V.%	139.76	87.92	89.60

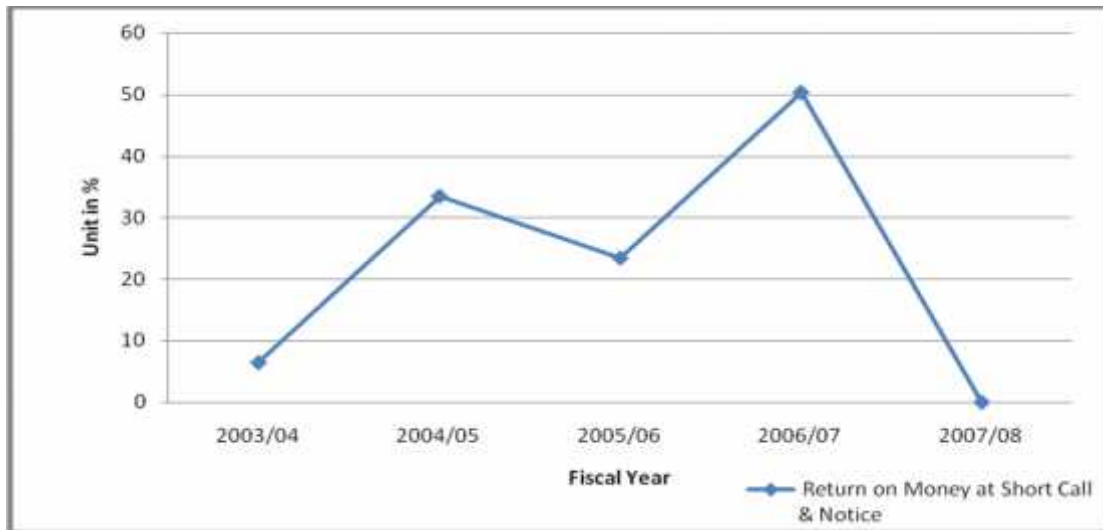
(Source: Financial Reports of NIBL)

The Table 4.15 showed that the interest earned on money at short call and notice by NIBL was in increasing trend for the first four year periods, except in the fiscal year 2005/06. And in the last year 2007/08, bank did not put any amount in money at short call and notice as a result the return was nil. The interest income earned by NIBL in the fiscal year 2003/04, 2004/05, 2005/06 and 2006/07 was Rs. 20.03 millions, Rs. 46.94 millions, Rs. 16.42 millions and Rs. 183.07 millions respectively. In average the interest earned was Rs. 71.29 millions.

Also, the return on money at short call and notice of NIBL in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 was 6.46%, 33.53%, 23.46%, 50.44% and nil respectively. The average return earned by NIBL in money at short call and notice was 22.78% and the risk on such return was 20.41%.

Figure 4.13

Return on Money at Short Call and Notice of NIBL



4.2.3.4 Comparison of Risk and Return of NIBL

The comparison between the risk and return of individual assets of NIBL to recognize the most fruitful assets has been done in the Table 4.16.

Table 4.16

Comparison of Risk and Return on Individual Assets of NIBL

Particulars	Loan & Adv.	Investment	Money at Short Call & Notice	Favorable
Average Income	1121.26	95.32	53.29	LA
Return %	7.81	1.73	22.78	MSCN
Risk %	0.86	0.38	20.41	Inv.

(Source: Table 4.13, Table 4.14 & Table 4.15)

The Table 4.16 showed that money at short call and notice yielded highest return (22.78%) in comparison with loan and advances (7.81%) and investment (1.73%) in NIBL. However, the money at short call and notice also carried highest risk (20.41%) along with highest return. So, it would be better to mobilize fund in money at short call and notice, if the bank is risk taker, otherwise the bank should go for loan and advances and investment to gain satisfactory return with lower risk.

4.2.4 Nepal State Bank of India Limited

4.2.4.1 Risk and Return on Loan and Advances

The return on loan and advances and the risk associated with such return of SBI have been delineated in the Table 4.17.

Table 4.17
Risk and Return on Loans and Advances of SBI
(Rs. in Millions)

FY	Interest	Loans and Advances	Return on LA (R_{LA})
2003/04	448.28	5143.66	8.72
2004/05	520.43	6213.88	8.38
2005/06	608.32	7626.74	7.98
2006/07	705.63	9460.45	7.46
2007/08	860.19	12113.70	7.10
Mean	628.57	8111.69	7.93
S.D. (Risk)	161.40	2760.49	0.66
C.V.%	25.68	34.03	8.29

(Source: Financial Reports of SBI)

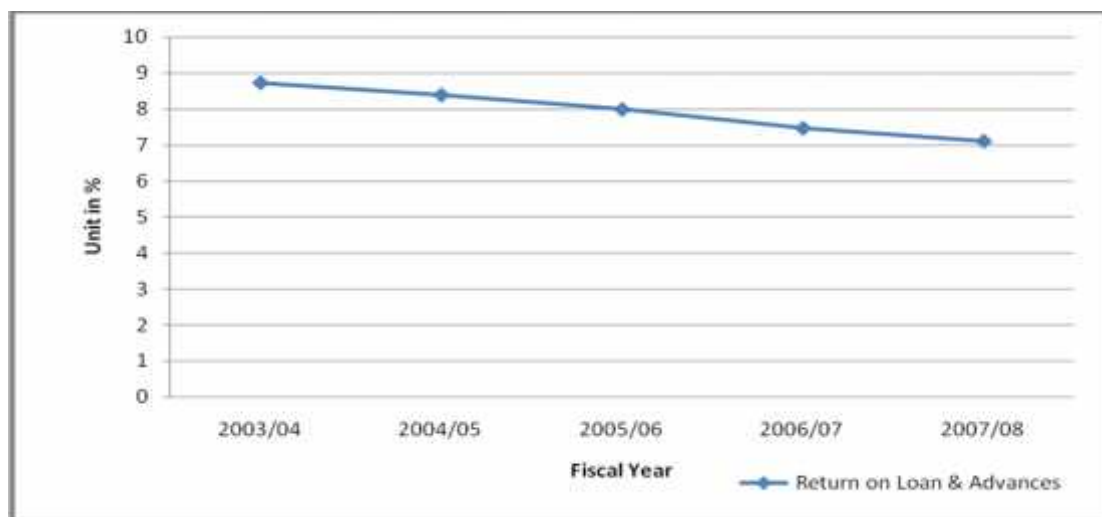
The Table 4.17 delineated that along with the amount of loan and advances disbursed, the interest amount earned on such loan and advances also followed increasing trend. The interest amount earned by SBI in the base year 2003/04 was Rs. 448.28 millions, which increased to Rs. 860.19 millions in the fiscal year 2007/08. In contrast, the return on loan and advances of SBI followed decreasing trend, which indicated that the pace of growth of interest was lower than the pace of growth of loan and advances amount. The return on loan and advances for the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 was 8.72%, 8.38%, 7.98%, 7.46% and 7.10% respectively.

In average, SBI bank earned Rs. 628.57 millions as interest amount and the average return on loan and advances of the bank was 7.93%. The coefficient of variation on interest earned was 25.68%, which indicated inconsistency in the

amount, and the coefficient of variation on return on loan and advances was 8.29%, which indicated uniformity in the return. Also, the risk in return on loan and advances of SBI was 0.66% only.

Figure 4.14

Return on Loans and Advances of SBI



4.2.4.2 Risk and Return on Investment

Similarly, the return on investment and the risk associated with such investment of SBI has been presented in the Table 4.18.

Table 4.18

Risk and Return on Investment of SBI

(Rs. in Millions)

FY	Income	Investment	Return on Inv. ($R_{Inv.}$)
2003/04	38.81	1907.52	2.03
2004/05	50.15	2607.68	1.92
2005/06	90.93	3610.78	2.52
2006/07	112.56	2659.45	4.23
2007/08	94.30	3088.89	3.05
Mean	77.35	2774.86	2.75
S.D. (Risk)	31.37	630.66	0.94
C.V.%	40.56	22.73	34.17

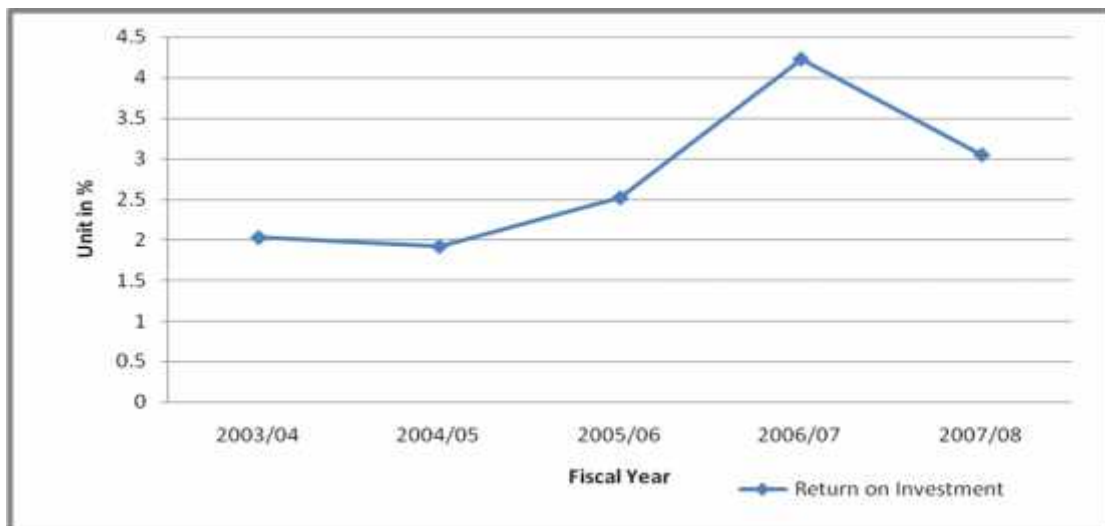
(Source: Financial Reports of SBI)

The Table 4.18 presented the risk and return on investment of SBI. The table revealed that for the first four fiscal years, the income earned by SBI on investment activities was in increasing trend, i.e. from Rs. 38.81 millions in the fiscal year 2003/04 to Rs. 112.56 millions in the fiscal year 2006/07, while in the fiscal year 2007/08, the income on investment decreased to Rs. 94.30 millions. In average, SBI earned Rs. 77.35 millions from investing activities like investment in government securities, corporate shares and debentures and others. The coefficient of variation on such earning was 40.56%, which indicated greater inconsistency.

In contrast, the return on investment of SBI was in fluctuating trend. The return on investment was 2.06%, 1.92%, 2.52%, 4.23% and 3.05% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The coefficient of variation on such return on investment was 34.17%, indicating greater inconsistency and the risk was 0.94% only.

Figure 4.15

Return on Investment of SBI



4.2.4.3 Risk and Return on Money at Short Call and Notice

Besides providing interest income, the money at short call and notice also carries the risk. Thus, the return and risk on money at short call and notice of SBI have been presented in the Table 4.19.

Table 4.19**Risk and Return on Money at Short Call and Notice of SBI****(Rs. in Millions)**

FY	Interest	Money at Short Call and Notice	Return on MSCN (R_{MSCN}.)
2003/04	0.00	0.00	0.00
2004/05	2.37	123.11	1.93
2005/06	5.44	363.20	1.50
2006/07	0.52	350.00	0.15
2007/08	3.51	304.01	1.15
Mean	2.37	228.06	0.95
S.D. (Risk)	2.22	159.63	0.84
C.V.%	93.87	69.99	89.11

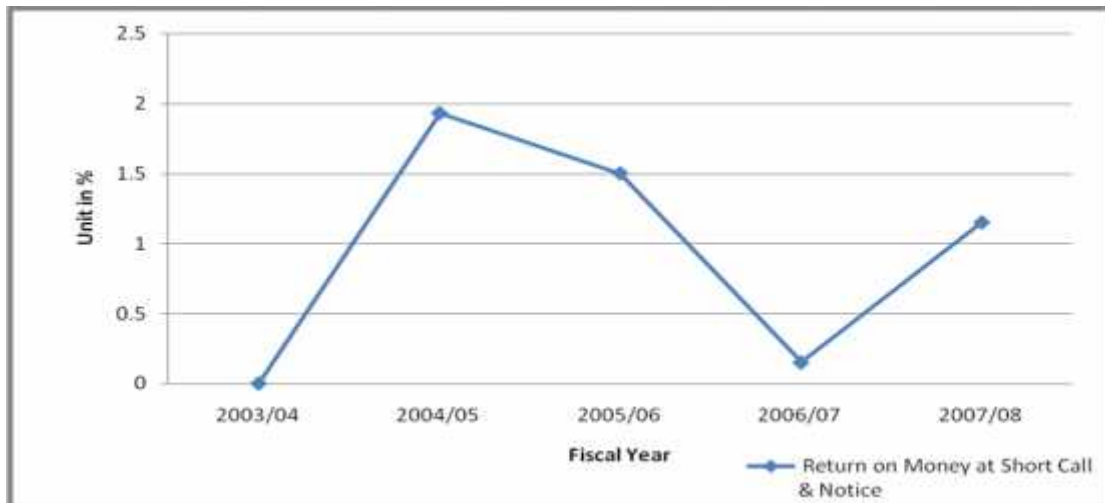
(Source: Financial Reports of SBI)

The Table 4.19 showed that the SBI earned no interest in the fiscal year 2003/04 on money at short call and notice as there was no money at short call and notice in that year. However, in the remaining four successive years, the interest income earned was Rs. 2.37 millions, Rs. 5.44 millions, Rs. 0.52 millions and Rs. 3.51 millions respectively. Similarly, the return on money at short call and notice of SBI in the fiscal year 2004/05, 2005/06, 2006/07 and 2007/08 was 1.93%, 1.50%, 0.15% and 1.15% respectively.

The SBI bank earned Rs. 2.37 millions as interest in money at short call and notice in average, and the average return on money at short call and notice was 0.95%. The coefficient of variation on such return was 89.11%, which indicated higher inconsistency in the return. However, 0.84% standard deviation on the return indicated low risk on the return.

Figure 4.16

Return on Money at Short Call and Notice of SBI



4.2.4.4 Comparison of Risk and Return of SBI

The comparison between risk and return on individual assets of SBI have been made in the table below to recognize the highest return yielding assets and lowest risk bearing assets.

Table 4.20

Comparison of Risk and Return on Individual Assets of SBI

Particulars	Loan & Adv.	Investment	Money at Short Call & Notice	Favorable
Average Income	628.57	77.35	2.37	LA
Return %	7.93	2.75	0.95	LA
Risk %	0.66	0.94	0.84	LA

(Source: Table 4.17, Table 4.18 & Table 4.19)

The Table 4.20 revealed that the return on loan and advances was highest (7.93%) in comparison with that of investment (2.75%) and money at short call and notice (0.95%). Also, the risk on loan and advances was lowest (0.66%) in comparison with that of investment (0.94%) and money at short call and notice (0.84%). So, it would be better if SBI mobilized maximum amount of fund in loan and advances to have sound portfolio.

4.3 Portfolio Risk and Return

Banks mobilize their funds mainly in loan and advances, investments like government securities, corporate shares and debentures and money at short call and notice. The bank is said to have sound portfolio management only if the combination of these assets gives maximum return and bears minimum risk. To measure the sound portfolio management, the portfolio return and portfolio risk are essential. The portfolio risk and portfolio return of NABIL, SCBNL, NIBL and SBI have been delineated in the Table 4.21.

Table 4.21
Portfolio Risk and Return

Bank	Rs.	Wt.	Av. Return	W x R
NABIL				
Loan & Advances	13721.91	0.625	7.86	4.91
Investment	7035.02	0.320	4.33	1.39
Money at Short call & Notice	1207.59	0.055	3.77	0.21
Total	21964.52	Portfolio Return (R_p)		6.51
		Portfolio Risk (p)		0.45
SCBNL				
Loan & Advances	9542.02	0.399	7.16	2.86
Investment	12273.29	0.514	4.37	2.24
Money at Short call & Notice	2082.85	0.087	3.17	0.28
Total	23898.16	Portfolio Return (R_p)		5.38
		Portfolio Risk (p)		0.22
NIBL				
Loan & Advances	14863.10	0.729	7.81	5.69
Investment	5355.85	0.263	1.73	0.45
Money at Short call & Notice	176.59	0.009	22.78	0.20
Total	20395.54	Portfolio Return (R_p)		6.34
		Portfolio Risk (p)		0.51
SBI				
Loan & Advances	8111.69	0.730	7.93	5.79
Investment	2774.86	0.250	2.75	0.69
Money at Short call & Notice	228.06	0.021	0.95	0.02
Total	11114.61	Portfolio Return (R_p)		6.49
		Portfolio Risk (p)		0.33

(Source: Appendix – II)

The Table 4.21 showed the portfolio risk and return of the selected commercial banks. The table revealed that the portfolio return of NABIL ($R_p = 6.51\%$) was highest compared to the portfolio return of SCBNL ($R_p = 5.38\%$), NIBL ($R_p = 6.34\%$) and SBI ($R_p = 6.49\%$). However, the portfolio risk of NIBL ($\sigma_p = 0.51\%$) was greatest than that of NABIL ($\sigma_p = 0.45\%$), SCBNL ($\sigma_p = 0.22\%$) and SBI ($\sigma_p = 0.33\%$). From the viewpoint of portfolio return, the portfolio assets of NABIL was best, since it yield the highest return. But from the viewpoint of risk, the portfolio assets of SCBNL was best, since it has lowest risk. Thus, for risk averter the portfolio management of SCBNL was best and for return seeker the portfolio management of NABIL was best. To enhance the portfolio management each bank should recognize the low returning and high risk carrying assets and thus minimize the fund on such assets.

4.4 Correlation and Regression Analysis

To examine the relationship of net profit with loan and advances, investment and money at short call and notice, the simple correlation and regression analysis have been used.

4.4.1 Correlation and Regression Analysis between Net Profit and Loan and Advances

To investigate whether the net profit moves in the same direction that the loan and advances follows, the correlation between net profit and loan and advances has been calculated. And to know by how much the net profit increases with per rupee increase in loan and advances, the regression line of net profit on loan and advances has been calculated.

Table 4.22
Correlation and Regression Analysis between Net Profit and Loan and Advances

Banks	Correlation Between NP and LA				
	r	r ²	P.E.	6 P.E.	Remarks
NABIL	0.9550	0.9121	0.0265	0.1591	Significant
SCBNL	0.9582	0.9181	0.0247	0.1483	Significant
NIBL	0.9884	0.9770	0.0069	0.0416	Significant
SBI	0.9173	0.8414	0.0478	0.2871	Significant
	Regression Line of NP on LA				
	a	b	Regression Equation		
NABIL	302.32	0.02	NP = 302.32 + 0.02 LA		
SCBNL	257.37	0.04	NP = 257.37 + 0.04 LA		
NIBL	-26.10	0.03	NP = -26.10 + 0.03 LA		
SBI	-115.64	0.03	NP = -115.64 + 0.03 LA		

(Source: Appendix – III)

The Table 4.22 showed that there existed perfect correlation between net profit and loan and advances in each bank, which meant that net profit increases/decreases with the increase/decrease in loan and advances amount. The correlation coefficient between net profit and loan and advances of NABIL, SCBNL, NIBL and SBI was 0.9550, 0.9582, 0.9884 and 0.9173 respectively. The coefficient of determination (r²) indicated that 91.21%, 91.81%, 97.70% and 84.14% change in net profit of NABIL, SCBNL, NIBL and SBI respectively was explained by the change in loan and advances amount.

To test the significance of the relationship between net profit and loan and advances, the probable error had been determined. Since the value of 'r' of NABIL, SCBNL, NIBL and SBI was greater than their corresponding 6 P.E., it can be considered that the relationship between net profit and loan and advances was statistically significant. Similarly, the regression line of net profit on loan and advances indicated that with per rupee increment in loan and advances, the net profit of NABIL increases by Rs. 0.02 if the variable 303.32

remains constant, SCBNL increases by Rs. 0.04 if the variable 257.37 remains constant, NIBL increases by Rs. 0.03 if the variable -26.10 remains constant, and SBI increases by Rs. 0.03 if the variable -115.64 remains uniform.

Comparing four banks, it can be concluded that the relationship between net profit and loan and advances was most strong in NIBL, since the value of 'r' in NIBL (0.9884) was highest. However, the yielding capacity of SCBNL was greatest, since the regression line showed that with same rupee of increment in loan and advances, the increment in net profit of SCBNL (Rs. 0.04) was highest.

4.4.2 Correlation and Regression Analysis between Net Profit and Investment

Let Net profit be the dependent variable (Y) and total investment be the independent variable (X), then the regression line of net profit on total investment and the correlation coefficient between them are presented in the table below.

Table 4.23

Correlation and Regression Analysis between Net Profit and Investment

Banks	Correlation Between NP and Inv.				
	r	r ²	P.E.	6 P.E.	Remarks
NABIL	0.8461	0.7159	0.0857	0.5141	Significant
SCBNL	0.8873	0.7873	0.0642	0.3849	Significant
NIBL	0.9487	0.90002	0.0302	0.1809	Significant
SBI	0.3402	0.1157	0.2667	1.6004	Insignificant
	Regression Line of NP on Inv.				
	a	b	Regression Equation		
NABIL	306.95	0.04	NP = 306.95 + 0.04 Inv.		
SCBNL	-92.37	0.06	NP = -92.37 + 0.06 Inv.		
NIBL	-397.76	0.15	NP = -397.76 + 0.15 Inv.		
SBI	1.39	0.05	NP = 1.39 + 0.05 Inv.		

(Source: Appendix – III)

The Table 4.23 showed that there existed positive relationship between investment and net profit of all the banks. The correlation coefficient between net profit and investment of NABIL, SCBNL, NIBL and SBI was 0.8461, 0.8873, 0.9487 and 0.3402 respectively. The coefficient of determination indicated that 71.59%, 78.73%, 90.002% and 11.57% change in net profit of NABIL, SCBNL, NIBL and SBI respectively was explained by the change in investment amount. Further, the probable error verified that the relationship between net profit and investment of NABIL, SCBNL and NIBL was statistically significant, since the value of 'r' was greater than the calculated 6 P.E. However, in case of SBI, the value of 'r' (0.3402) was lower than the 6 P.E. (1.6004), so there existed no significant relationship between net profit and investment, and hence net profit may not increase with the increase in investment.

The regression line of net profit on investment indicated that with per rupee increase in investment, the net profit of NABIL, SCBNL, NIBL and SBI increases by Rs. 0.04, Rs. 0.06, Rs. 0.15 and Rs. 0.05 respectively, if their corresponding variable remains constant.

Comparing four banks, it can be concluded that there existed strongest relationship between net profit and investment in NIBL than in other banks, and the increment in net profit with same rupee investment was also highest in NIBL.

4.4.3 Correlation and Regression Analysis between Net Profit and Money at Short Call and Notice

To analyze the correlation coefficient and find the regression line between net profit and money at short call and notice, the net profit was assumed to be the dependent variable (Y) on the money at short call and notice, which was assumed to be the independent variable (X).

Table 4.24
Correlation and Regression Analysis between Net Profit and Money at
Short Call and Notice

Banks	Correlation Between NP and MSCN				
	r	r ²	P.E.	6 P.E.	Remarks
NABIL	0.5267	0.2774	0.2180	1.3077	Insignificant
SCBNL	-0.3043	0.0926	0.2737	1.6423	Insignificant
NIBL	-0.4078	0.1663	0.2515	1.5089	Insignificant
SBI	0.7346	0.5397	0.1389	0.8331	Insignificant
Regression Line of NP on MSCN					
	a	b	Regression Equation		
NABIL	481.84	0.10	NP = 481.84 + 0.10 MSCN		
SCBNL	1004.31	-0.17	NP = 1004.31 – 0.17 MSCN		
NIBL	487.58	-0.57	NP = 487.58 – 0.57 MSCN		
SBI	45.08	0.45	NP = 45.08 + 0.45 MSCN		

(Source: Appendix – III)

The Table 4.24 revealed that relationship between net profit and money at short call and notice was positive in NABIL and SBI, and negative in SCBNL and NIBL. The correlation coefficient between net profit and money at short call and notice of NABIL, SCBNL, NIBL and SBI was 0.5267, -0.3043, -0.4078 and 0.7346 respectively.

Since, the value of ‘r’ in each bank was lower than the corresponding value of 6 P.E., it can be considered that the relationship between net profit and money at short call and notice was statistically insignificant, and hence it was not necessary that net profit should move to the same direction that money at short call and notice follows.

However, the regression line of net profit on money at short call and notice indicated that if money at short call and notice increases by Rs. 1, the net profit of NABIL and SBI increases by Rs. 0.10 and Rs. 0.45 respectively and the net profit of SCBNL and NIBL decreases by Rs. 0.17 and Rs. 0.57 respectively.

Hence, it can be concluded that there existed no significant relationship between net profit and money at short call and notice in all the selected banks. Thus, it would be better if each bank diverts the amount of money at short call and notice in other to ensure for profit.

4.5 Major Findings of the Study

On the basis of above analysis, the following major findings of the study have been drawn.

-) Loan and advances has remained the alluring sector for the investment of the collected in the banking sector. However, SCBNL has remained exception from this situation and thus gave more priority for other short term investment.
-) In general, the loan and advances is the highest returnable assets in the banking sector, except in the case of NIBL, where money at short call returned highest. Further, the return rate on loan and advances of each bank was below ten percent in average.
-) Although, money at short call and notice is the least returnable assets in most of the banks, it carried highest risk, except in SBI.
-) Considering the portfolio return, the portfolio assets of NABIL was best, since it yield the highest return. But from the viewpoint of risk, the portfolio asset of SCBNL was best, since it has lowest risk. Thus, for risk averter the portfolio management of SCBNL was best and for return seeker the portfolio management of NABIL was best.
-) There existed sound positive synchronization between the net and loan and advances in the banking sector. Also, in most of the sample firms the relationship between net profit and investment was positively justified. However, the relationship between net profit and money and short call notice was not certain.

CHAPTER – V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Integrated and speedy development of the country is possible only when competitive banking and financial service reach corner of the country. Meticulous formulation of investment is prime essential for the success of the banks. Eventually, good investment policy has a positive impact on the economic development of the country and vice-versa.

In its broad sense, an investment is a sacrifice of the current money or other resources for future benefits. Numerous avenues of investment opportunities are available today. A good investment policy has positive impact on the economic development of the nation and the investor too but some of the sources of uncertainty that contribute to the investment risk are interest rate risk, market risk, default risk, political risk and industry risk. As an investor, everyone has a wide area of the investment avenues available such as common stock, preferred stock, debt, derivative securities, hybrid securities, real assets, mutual fund etc. Investment comprises both long term and short term investment. To gain the optimal profit, bank needs to have sound portfolio management. Portfolio means diversification of the amount in various sectors in such a way that such diversification yields high profit.

For the study, the investment of banks in different sectors like in granting loan and advances to earn interest income, keeping money at short call and notice to earn interest income, and short term investment like investment in government securities, corporate shares and debentures and others to gain interest income and dividend and capital gain, have been taken. Further, the portfolio performance analysis of the bank has also been to meet the objectives set out.

The main objective of the study is to analyze the portfolio performance of the commercial banks of Nepal. Since, the analysis of the portfolio of all the banks operating in Nepal is not possible, only four banks, namely Standard Chartered Bank Nepal Limited, Nepal Arab Bank Limited, Nepal Investment Bank Limited and Nepal SBI Bank Limited, are chosen for the study.

All the data used in the study are secondary data. The data, which are of secondary nature, are collected from the official websites of the concerned banks. Further the official website of the Nepal Stock Exchange has also been visited. The financial data thus collected have been analyzed using the financial tools, mainly related to risk and return, and the statistical tools.

5.2 Conclusion

Considering the major findings drawn and the analysis made in the previous chapter it can be concluded that the banks gave high priority in loans & advances and low priority to money at short call and notice, while mobilizing fund. The reason behind such allocation of fund by the banks is somewhat justifiable, since loan and advances has remained the major source of income of in most of the banks. Further, the highest return yielded by loan and advances and lowest return yielded by money at short call and notice also buttress such decision of the banks. In addition, it can be concluded that although money at short call returns least, the risk on such asset is highest. However, the short term investment like in government securities, corporate shares and bonds, bears lowest risk.

Similarly, on the basis of portfolio return and portfolio risk, it can be concluded that, the portfolio assets of NABIL was best from the viewpoint of portfolio return, since it yield the highest return. But from the viewpoint of risk, the portfolio assets of SCBNL was best, since it has lowest risk. Thus, for risk averter the portfolio management of SCBNL was best and for return seeker the portfolio management of NABIL was best.

On the basis of statistical analysis, it can be concluded the banks are quite success in making good bind between the net profit and loan and advances, and the net profit and short term investment. However, the banks fail to have sound relationship between net profit and money at short call and notice. This further verifies that the money at short call and notice has the highest risk comparing to other assets of the bank.

5.3 Recommendations

On the basis of the major findings drawn and the conclusion made, the following recommendations have been provided for the enhancement of the banking performance;

-) Among four banks, three banks gave more priority in loan and advances. Thus, these banks should analyze whether they were able to get at least the opportunity cost that they might have got from the other investment assets.
-) The loan and advances of NABIL returned highest income and investment carried lowest risk, thus to improve the portfolio management, NABIL should increase the amount in both loan and advances and investment and should decrease the amount in money at short call and notice, which carried highest risk.
-) The loan and advances of SCBNL yielded highest return than investment and money at short call and notice, and investment carried lowest risk than loan and advances and money at short call and notice. Thus, to enhance the portfolio management, SCBNL should divert the amount of money at short call and notice in loan and advances and in investment.
-) Money at short call and notice yielded highest return along with highest risk in comparison with loan and advances and investment in NIBL. So, it would be better to mobilize fund in money at short call and notice, if the bank is risk taker, otherwise the bank should go for loan and advances and investment to gain satisfactory return with lower risk.

-) The return on loan and advances was highest and the risk was on such loan and advance was lowest in comparison with that of investment and money at short call and notice. So, it would be better if SBI mobilizes maximum amount of fund in loan and advances to have sound portfolio.
-) The short term investment of bank is limited to government securities, corporate shares and debentures, foreign banks, mutual fund and SWIFT. Thus, to have sound portfolio the banks should quest the investment opportunities in other sectors as well.

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