CHAPTER – I

INTRODUCTION

1.1 Background of the Study

For strengthening the economy of any country both the private and public sector should play a great role. Both private and public sector have been contributing to our nation. Integrated and speedy development of the country is possible only when competitive banking service reaches nook and corners of the country. Commercial banks occupy an important place in the framework of every economy because they provide capital for the development of industry, trade, business and other resources deficit sectors by investing the saving collected as deposits. All the economic activities of each and every country are greatly influenced by the commercial banking business of the country.

Commercial banks are the major financial institutions which occupy very important place in the framework of every economy. They play a vital role in the capital formation, proper utilization of the collected resources and provide a host of banking services. Commercial banks collect money from the public providing sound interest and subsequently gain profit through lending it in business organization, industry, agriculture sectors etc. Hence it can be stated the main task of commercial banks is to mobilize idle resources in productive areas by collecting it from scattered sources for generation of the profit. Bank plays the intermediary role between saving and investment caters the credit needs of the customers and the investment requirements of the savers. Thus it is evident that the efficient and stable banking systems are essential for an orderly economic growth.

Successful formulation and effective implementation of the investment policy is the prime requisite for refined performance of the commercial banks. In the similar manner, a good investment policy has a positive impact on the economic development of the country and vice-versa. Bank should attract its customers through implementing the best or competitive investment policy. It helps increase the quality of the banking service as well as quality deposit and investment in various sectors. Investment management of a bank is guided by the investment policy adopted by the bank. The bank investment policy fosters the investment operation of the bank to be efficient and profitable by minimizing the interest risk. Thus the commercial bank should mobilize its deposits and the other funds to profitable, secured, stable and marketable sectors to earn a good profit.

Investment portfolio is the collection of securities. It simply represents the practice among investors having their funds on more than one asset. Portfolio theory deals with the selection of optimal portfolio. In other words, portfolio provides the highest possible return for any specified return. The income or profit of the bank entirely depends upon the investment decision. Considering the fact, the bank should never invest its funds in individual security alone, which is subject to massive depreciation and fluctuations. Banks should accept those types of securities which are commercial, marketable, stable, liquid and profitable. A bank should not lay all its eggs in one basket, which means, to minimize risk a bank must diversify its investment on different sectors and different securities.

1.2 Statement of the Problem

Commercial banks are the backbone of the Nepalese economy at present. Nepal being listed among least developed countries, the establishment of commercial bank in this sector has added more bricks in the construction of Nepalese economy. Its investment range from small-scale cottage industries

to large industries in making investment in loans and government securities one may always wonder which investment is better. It can be hypothesized that bank portfolio variables like loans, investment, cash reserve, deposit and borrowing affects the national income. And also how the government policy affects these variables, such as the effect of an interest rate on the banks portfolio variables is of great concern. Therefore, when monitoring money and credit conditions, the central bank has to keep an eye on bank portfolio behavior. The investments planning of the commercial banks in Nepal heavily depend upon the rules and regulation provided by the central banks. The composition of asset portfolio of the banks is influenced by the policy of the central bank.

Nowadays Nepalese commercial banks do not seem to be capable to invest their funds in more profitable sector where there is risk. They are found to more interest in investment in less risky and liquid sector i.e. treasury bills, development bonds, National savings, Shares and Debenture etc. according to short/ long term investment policy. They have to follow all the instruction and guidelines of NRB to have clear vision towards investment portfolio. They have to pay attention towards proper matching of deposit and investment portfolio, which decreases financial problem enforcing commercial banks.

With the prevailing economic recession in the country, there has been lower investment in the agriculture, manufacturing, industrial and financial sectors. Lower volume of investment is causing lower growth of gross domestic product and hence foreign trade deficit is increasing day by day. Commercial banks are also directly affected by this economic turmoil and are facing difficulties in furnishing their loans and advances towards the profitable sectors. Due to heavy rules and regulation by government policy, there are most important problems in investment climate prevailing in Nepal.

There are various problems in resources mobilization by commercial banks in Nepal. The most important problem is poor investment climate prevailing in Nepal due to heavy regulatory procedure uncertain government policy portfolio analysis between various types of investment made by commercial banks are most important subject, which helps to minimize risk by diversifying total risk to different sectors. But portfolio management activities of Nepalese commercial banks are in developing stage. There are various reasons behind not using such activities openly by commercial banks; such as unawareness about portfolio management and it's usefulness, hesitation of taking risk, lack of proper techniques to run such activities in the best and successful manner; less developed capital market, very limited opportunity for exercising the portfolio management. NRB has also played important role to make commercial banks as well as financial institutions to invest their funds in good sector, which affect the investment portfolio. NRB has imposed many rules and regulations so commercial banks can have sufficient liquidity and security. Banking competition is increasing day per day but investment opportunity is not comparatively extended. Now, commercial banks have to face competition with each other's and many more financial institutions.

Under such situation, the present study will try to analyze investment of commercial banks, portfolio analysis of commercial banks in their investment, return on various types of investment, portfolio risk and return. Therefore, this study will deal with the following issues.

- What is the relationship of investment with total deposits, loan and advances, net income?
- How do commercial banks manage their risk and return using portfolio diversification?
- Which bank has the largest degree of financial risk measured in terms of portfolio risk?

- How do the banks behave for portfolio variables?
- Is investment portfolio directed towards objectives of profit maximization?

1.3 Objectives of the Study

The general objective of the present study is to analyze the investment of joint venture commercial banks in Nepal. The specific objectives are as follows.

- To analyze how commercial banks manage their risk and return on investment using portfolio investment concept.
- To analyze the risk and return ratios of sampled banks on individual assets and portfolio assets.
- To evaluate the financial performance of JVBs in term of investment strategies.
- To examine the relationship of investment and total deposits.

1.4 Significance of the Study

Banks play vital role in the economic development of the country. Without banking facilities, the growth and the economic development becomes slow. The main objectives of commercial banks is to earn profit by proper mobilization of resources in Nepalese commercial banks, they don't have clear view towards effective investment. They are found to be making investment only on short term basis, only few banks invest on long terms nowadays. There is hesitation to invest on long terms projects because they are much more safety minded. They do not seem to be capable to invest their funds in more profitable sector. They are found to be more interested in investment in less risky and highly liquid sectors. There are various ways to minimize risk, but the bank are not aware of this and do not pay any attention toward such field i.e. they do not think about portfolio investment.

The main significance of this study of investment policy of Nepalese commercial banks is to see how to minimize risk on investment and maximize return through portfolio analysis. The researcher has undertaken this study to analyze the existing portfolio investment of Nepalese commercial banks and point out the various weakness and defects inherent in it and provide package of suggestion for its improvement.

1.5 Limitations of Study

The major limitations of the study are;

- Among the various commercial banks, only joint venture banks are taken under study.
- The study covers a period of 5 fiscal years which will be tabulated and processed for drawing conclusion.
- The accuracy of the research work will be dependent on data provided by concerned organization.
- Time factor is major limitation of this study.
- This study concentrates only on those factors, which are related with investment analysis and available in the form required for analyzing the different issues.

1.6 Organization of the Study

This study has been organized over altogether five chapters. Starting from Introduction, Review of Literature, Research methodology, Presentation and Analysis of data and summary, to conclusion and recommendation as get of the entire study. A brief outline of this chapter has been outlined as under.

Chapter I "Introduction": It introduces the subject, present the research problem, reason for studying, objective of the study, along with limitation.

Chapter II “Review of Literature”: It concerns with the study of investment, and the related previous work have been reviews and presented.

Chapter III “Research Methodology”: It comprises research designs, nature and source of data, data gathering method and analytical tools used.

Chapter IV “Presentation and Analysis”: This chapter deals with the presentation and analysis of data and scoring the empirical finding out the study through definite course of research methodology.

Chapter V “Summary, Conclusion and Recommendation”: It is followed by the basic conclusion of the study based in the fourth chapter on the basic of these conclusions and recommendation has also been presented for consideration

CHAPTER – II
REVIEW OF LITERATURE

2.1 Conceptual Framework

2.1.1 Concept of Investment

"Investment, in its broadest sense, means the sacrifice of current dollars for future dollars. Two different attributes are generally involved: time and risk. The sacrifice takes place in the present and is certain. The reward comes later, if at all, and the magnitude is generally uncertain." *(Sharpe, Alexander, and Bailey; 2001:1)*

Investment is a commitment of money and other resources that are expected to generate additional money or resources. Return is the primary motive of investment, but it always entails some degree of risk.

"Investment generally involves real investment or financial investment. Investment in tangible assets like buildings, automobiles, machinery and factories is real investment. Investment in financial assets liker common stocks, bonds and debentures is financial investment. Real assets are generally less liquid than financial assets." *(Basnet; 2002: 28)*

Investment involves long-term commitment and waiting for reward. "An investment may be defined as the current commitment of funds for a period of time to derive a future flow of funds that will compensate the investing unit for the time funds are committed, for the expected rate of inflation and also for the uncertainty involved in the future flow of funds." *(Frank and Reilly; 1972: 13)*

"The word investment brings fourth vision of profit, risk, speculation and wealth." *(Cheney & Mosses; 1992: 6)* The above definition is broader, because Cheney and Mosses have concluded all behaviors consisted of profit, risk, speculation and wealth as investment. According to this, certain profit is gained after some risk bearing with view to maximize wealth and managing speculation of wealth.

Therefore, these definitions quoted above, suggest that an investment regards with the allocation and mobilization of funds for certain coming time-intervals, so as to generate some extra benefit or extra attachment with mobilized funds.

2.1.2 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;

2.1.2.1 Equity Securities

a) Common Stock

"Commons 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 liquidable, 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)*

2.1.2.2 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.

A) 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)*

B) 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)*

2.1.2.3 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 pre-determined (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

"Futures 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)*

2.1.2.4 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)*

2.1.2.5 Hybrid Securities

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

2.1.2.6 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)*

2.1.2.7 Other Investment Alternatives

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

2.1.3 Factors to be considered while choosing Investment Alternatives

"Investing in all alternatives available in the market will not be a wise decision. So, before making investment, investor should seriously consider following factors:" *(Brealy & Mayers; 1991: 64)*

a) Investment Objectives

"Investment objectives of all investors cannot be same. Some investors want regular return for their retire age, some for near future, some for their children's education etc. If an investor wants regular return in their retire age, they have to choose long term securities like common stock having high potential growth. But if an investor wants return in short period he/she should

choose short term securities like T-bill, which are highly liquid, so according to the investment objectives, investor should choose alternatives available." *(Brealy & Mayers; 1991: 64)*

b) Rate of Return

"Different securities have different rate of return. Future of nay asset is not sure. So on the basis of past records of return, investor should estimate future expected return however expected future return may not be exact. So, expected rate of return from the security is another important factor for choosing security." *(Brealy & Mayers; 1991: 64)*

c) Risk Analysis

"The variability in return is known as risk and each investor should analyze it seriously. Risk is the chances of incurring losses. Standard deviation & co-efficient of variation are tools to analyze risk of any asset. Government securities, municipal bonds are risk less securities. Each investor has different degree of risk bearing. Some investors prefer less risk while some more. So investors always determined the risk of security and match with his risk preference." *(Brealy & Mayers; 1991: 65)*

d) Taxes

"Except government securities and municipal bond, government taxes income received from most investment alternatives. And amount of taxes to be paid also depends on the tax status of the investor. So investors who are in high tax bracket should invest in tax free assets. Taxes are important factors on which investors should think seriously." *(Agrawal; 1987: 52)*

e) Investment Horizon

"Length or duration of investment is another important factor to be considered. If the objective of investment is long horizon, long term securities should be selected but if the horizon is short, short term securities should be selected." *(Agrawal; 1987: 52)*

f) Investment Strategies

"Combination of selection, timing and diversification is investment strategies. Investor should select best investment alternatives. Selection strategy may be influenced by efficient market securities. Only in perfect market, investors are selective in their investment decision." *(Klise; 1972: 28)*

g) Timing

"Investors should first study the suitable timing of investment to increase wealth. He should identify different situations so that return may be increased even in less investment. If investment is made during improper time, it may both produce an attractive return. Selling or holding the securities depends upon analysis of scenario. So, timing is also an important factor." *(Klise; 1972: 28)*

h) Diversification

"Among various investment alternatives available in market, investor can form different set of securities to reduce investment risk. This process of investing in more than one asset for reducing investment risk is diversification. Portfolio of assets with negative correlation coefficient is considered most efficient." *(Klise; 1972: 29)*

2.1.4 Investment Process

"Investment is a risky task because investors invest at present for future return. So every investor should follow certain process and procedure seriously. The set of procedures, which an investor follows while making investment is known as investment process. Investment process includes formulation of investment objectives, construction of portfolio, and revision of portfolio and evaluation of portfolio performance. Some important steps in investment process are discussed below." *(Roy; 1974: 35)*

a) Set investment Objective

Of course major objective of each investor is to maximize his wealth. But such objective may both be useful in decision-making. Whether the return is required in short period or long it should be clear first. For what purpose, is the investment made for what expected return should be clearly defined. In market,

various alternatives with variety of characteristics can be found. Investment policy helps to select suitable investment alternatives. So setting investment policy is the important step in investment.

b) Perform Security Analysis

Each possible financial asset should be examined individually in terms of risk and return. Technical analysis and fundamental analysis can be performed for this. Prediction of variability in price of stocks based on historical data and number of securities traded in past should be analyzed. Yield to maturity, coupon rate, liquidity, tax etc. should be analyzed seriously. Securities, which are less risky and gives higher rate of return should be selected.

c) Construction of Portfolio

Construction of portfolio is a wise investment decision. Investor should select number of securities for investment. It involves selecting specific assets in which to invest and how much to invest in each security. It consists some technical analysis, so investor should have knowledge of statistical tools also. Investor can choose active or passive portfolio strategy.

d) Portfolio Revision

Portfolio constructed once cannot always be efficient. Over time, objectives of investor may change. So some of existing securities can be dropped out and some new entries can be made. Securities investment horizon can be changed. According to changed scenario, bonds and stocks can be replaces to each other. So time-to-time, portfolio should be revised for handsome return.

e) Portfolio Performance Evaluation

Return and risk of portfolio may change according to the time period. Portfolio is evaluated in terms of risk and return. Evaluation and control mechanism makes this process more effective.

2.1.5 Investment Portfolio

"Portfolio is a collection of different types of securities in different sectors." *(Weston & Brigham; 1982: 245)* Portfolio Management is related to the efficient portfolio investment in financial assets. Portfolio Analysis considers

the determination of future risk and return in holding various blends of individual securities.

"Portfolio theory deals with the selection of optimal portfolios; that is portfolio that provides the highest possible return for any specified degree of risk or the lowest possible risk for any specifies rate of return." *(Weston & Copeland; 1992: 47)* It has been developed for the financial assets, including equity shares, preference shares and debentures of companies. Thus making investment from the selected optimal portfolio i.e. the portfolio that provides the highest rate of return with least possible amount of risk is the real investment portfolio.

"Portfolio investment refers to an investment that combines several assets. The modern portfolio theory explains the relationship between assets risk and return. The theory is founded on the mechanics of measuring the effect of an asset on risk and return of portfolio. Portfolio investment assumes that the mean and variance of returns are the only two factors that the investor cares. Based on this assumption, it can be said that rational investor always prefers the highest possible mean return for a given level of risk or the lowest possible level of risk for a given amount of return. The efficient portfolio is a function of not only risk and return of individual assets included, but also the effect of relationship among the asset on the sum of portfolio risk and return. The portfolio return is straight weighted average of the individual asset. However, the portfolio risk is not the weighted average of the variances of return as well as the covariance between the return of individual assets included in the portfolio and their respective weights." *(Pradhan; 1992: 295)*

Investment portfolio of commercial banks is the holding of securities and investment in financial assets i.e. bond, stock, loan etc. Therefore, commercial banks must invest its deposits and other funds to profitable, secured, stable and marketable sectors. Investment policy helps the bank in efficient investment operation ensuring maximum return with minimum risk. Thus, investment is the most important function of commercial banks. It is the long-term commitment of bank in the uncertain and risky environment. Therefore to

maximize the profit, banks should invest in that type of securities, which are commercial, durable, market stable, transferable and high market price.

Similarly to minimize risk, a bank must diversify its investment in different sectors. If bank invest its fund in different securities, it will be able to reduce risk and maximize the return.

2.1.5.1 Portfolio Analysis

"A portfolio simply represents the practice among the investment of having their funds in more than one asset. The combination of investment assets is called portfolio." *(Weston & Brigham; 1982: 245)* If investor holds a well-diversified portfolio, then his concern should be the expected return and risk of portfolio rather than individual assets or securities. The portfolio theory provides a normative approach to the investors' decision to investment in assets or securities.

"Most financial assets are not held in isolation, rather they are held as parts of portfolios. Portfolio theory deals with the selection of optimal portfolios, i.e. portfolios that provide the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return." *(Weston & Copeland; 1992: 366)*

Portfolio analysis considers the determination of future risk and return in holding various blends of individual securities.

Portfolio risk analysis is the process of measuring and assessing portfolio's exposure to market risk. Financial portfolio offers the views on risk, allowing to compare portfolio to the market portfolio in terms of risk-adjusted return, value-at-risk, and market risk exposure.

The portfolio of assets usually offers advantage of reducing risk through diversification. A sock or securities held, as part of a portfolio is less risky than the same stock held in isolation. Thus, portfolio analysis helps to develop a portfolio that has the maximum return at whatever level of risk the investor considers appropriate.

2.1.5.2 Objective of Portfolio Analysis

The objectives of portfolio analysis are to analyze different individual assets and delineate efficient portfolio. Hence, the portfolio manager's task is to select investment weights that will result in dominant investments, analyze the risk, return data describing each investment candidate, and determine what assets to buy, what to sell. The main objectives of portfolio management are as follows:

A) Primary Objectives:

- Maximization of Profit
- Minimization of Risk

B) Secondary Objectives:

- Regular return
- Stable income
- Appreciation of capital
- Liquidity
- Easy marketability
- Safety of investment
- Tax planning:- Capital gain tax, income tax and wealth tax

2.1.5.3 Portfolio Risk and Return

Portfolio analysis considers the determination of future risk and return in holding various blends of individual securities. "Each asset's expected return and risk, along with the expected return and risk for other assets and their interrelationships, are important inputs in portfolio selection. In order to construct efficient portfolios, the investor must be able to qualify the portfolios' expected return and risk." *(Cheney & Mosses; 1992: 651)*

2.1.5.3.1 Portfolio Return

"The expected return of a portfolio is the weighted average of the expected returns of the individual assets in the portfolio. The weights are the proportion of the investor's wealth invested in each asset and the sum of the weights must equal to one." *(Cheney & Mosses; 1992: 652)*

The portfolio expected return is defined in equation as follows;

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

Where,

R_p = Portfolio expected returns

W_A = Weight of investment invested in stock "A"

W_B = Weight of investment invested in stock "B"

R_A = Expected return for stock "A"

R_B = Expected return for stock "B"

2.1.5.3.2 Portfolio Risk

The portfolio risk is measure 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." *(Pradhan; 1992: 295)*

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

$$\text{Variance } (б^2_p) = w^2_A б^2_A + w^2_B б^2_B + 2\, w_A\, w_B\, r_{AB}\, б_A\, б_A$$

$$б_p = \sqrt{w^2_A б^2_A + w^2_B б^2_B + 2\, w_A\, w_B\, r_{AB}\, б_A\, б_A}$$

where,

$б_p$ = standard deviation of portfolio rate of return

$б_A$ = standard deviation on return on assets A

$б_B$ = 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 of assets A and assets B

2.1.5.4 Diversification of Risk

"Diversification is the one important means that control portfolio risk. Investments are made in a wide variety of assets so that exposure to the risk of any particular security is limited. By placing one's eggs in many baskets,

overall portfolio risk actually may be less than the risk of any component security considered in isolation." *(Bodie & Marcus; 2004: 162)*

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.

Some different diversification techniques for reducing portfolio's risk are as follows:

2.1.5.4.1 Simple Diversification

Simple diversification can be defined as "not putting all the eggs in one basket" or "spreading the risk." *(Francis; 2003: 228)* It 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.

2.1.5.4.2 Diversification across Industries

Diversification can also be experienced by combining securities from different industries. It is certainly better to follow this advice than to select all the securities in a portfolio form one industry. Nevertheless, empirical research has shown that diversifying across industries is not much better than simply selecting securities randomly.

2.1.5.4.3 Superfluous Diversification

Under simple diversification, maximum risk reduction is attained through inclusion of 10 to 15 assets in the portfolio. If we add, further more assets in the portfolio, such diversification is called superfluous diversification and should be avoided. The investor finds it impossible to manage the assets in his portfolio because the management of a large number of assts requires knowledge of the liquidity of each investment return, tax liability and thus becomes impossible without specialized knowledge. Superfluous diversification will usually result in the following portfolio management problems:

i) Impossibility of good portfolio management

ii) Purchase of lackluster performers

iii) High search costs

iv) High transaction costs.

Although more money is spent to manage a superfluous 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.

2.1.5.4.4 Simple Diversification Across Quality Rating Categories

Diversification of portfolio is also possible across the quality rating assets or securities. Different rating agencies rate different companies and their assets based on possibility of default risk. In this technique, assets are selected randomly from the homogeneous quality rating. The standard deviations of portfolios of different homogeneous quality rating attained different level of risk. The highest quality portfolio randomly diversified stocks was able to achieve lower levels of risk than the simply diversified portfolios of lower quality stocks. This result reflects the fact that default risk is part of total risk. The higher-quality portfolios contain assets with less default risk. Thus, portfolio managers can reduce portfolio risk to levels lower than those attainable with simple diversification by not diversifying across lower-quality assets.

2.1.5.4.5 Markowitz Diversification

"Markowitz diversification may be defined as combining assets that are less than perfectly positively correlated in order to reducing portfolio risk without sacrificing portfolio return." *(Weston & Brigham; 1987: 194)* It is more analytical than simple diversification and considers assets correlation or covariance in portfolio formation. It shows that lower the correlation between assets, the more that the diversification will be able to reduce the portfolio risk.

2.1.5.5 Measure of Portfolio Risk

"Portfolio risk can be measured by using covariance of return of securities in portfolio. Covariance is a statistical measure of the relationship between two random variables. A positive value for covariance indicates that the securities returns tend to move in the same direction and negative value indicates that returns of two securities move in opposite side. If the value of covariance is zero, there is little or no relationship between the returns for two securities. The square root of the coefficient of determination is called the correlation coefficient 'r'. Correlation coefficient always lies between -1 and +1. A value of -1 represent perfect negative correlation and a value of +1 represent perfect positive correlation." *(Sharpe, Alexander & Bailey; 2001: 180)*

$$r_{ij} = \frac{\text{Cov}\,(r_i\, r_j)}{б_i\, б_j}$$

Where,

r_{ij} = correlation coefficient between securities 'i' and 'j'

$б_i$ = standard deviation of return for security 'i'

$б_j$ = standard deviation of return for security 'j'

$\text{Cov}\,(r_i\, r_j)$ = covariance of return between securities 'i' and 'j'

2.2 Review of Legal Provisions

The legal provisions have significant impact on the establishment of Commercial Banks, their mobilization and utilization of resources. In Nepal, Nepal Rastra Bank, as a central bank, directs the banks and other financial institutions. Plans, policies, directions, rules and regulations from NRB are major subject to operate the commercial banks. To allocate and mobilize the deposits collected by commercial banks in different sectors and different areas of the country, NRB formulates fundamental rules, regulations, directives, policies etc. For that purpose, NRB has formulated Commercial Bank Act 2031. All the Commercial Banks have to confirm to the legal provisions specified in the Commercial Bank

Act 2031 and other rules and regulations formulated to facilitate the smooth running of commercial banks. These directives have direct or indirect impact while making decision to mobilize bank's deposits in different sectors of the nation. Here, the directions, rules and regulations formulated by NRB in terms of investment by Commercial Banks are briefly mentioned below:

a) Provisions for Investment in Priority Sector

NRB directs Commercial Banks to extend loan and advances amounting at least 12 percent of their total outstanding credit to the priority sector including deprived sector. NRB has included agricultural sector, cottage and small industry sector, service oriented sector and co-operative sectors as a priority sector for investment. This provision is totally based on the objective for uplifting living standard of people in remote and village area.

b) Provision for Investment in Deprived Sector

Commercial banks also compulsorily need to extend their credit and investment in the deprived sectors such as co-operative institution and rural development banks that are licensed by NRB. According to the provision, the commercial banks must require to extend a ratio ranging from 0.25% to 3% of their total outstanding loan to deprived sector depending upon the nature of the bank. Until having the deprived sector lending obligation below the ratio of 3 percent, commercial banks require to increase such ratio by additional 0.5 percent basis point every year until the ratio becomes 3 percent. However, the commercial banks that had already met the lending ratio at 3 percent could continue the same every year.

c) Provision of Capital Fund

Commercial Banks are required to maintain primary capital and capital fund in terms of a percentage of their risk-weighted assets (RWA) as follows:

Table 2.1

Capital Fund to be Maintained

Time period	Capital fund in % on the basis of Total risk weighted assets	
	Core capital	Total capital fund
Up to 2007/08	6.00	12.00
2008/09 to till date	6.00	10.00

(Source: Unified directives 2009/10)

Core Capital

- Paid of Capital
- Share Premium
- Non-redeemable Preference Share
- General Reserves
- Retained Earning

Supplementary Capital

- General Loan Loss Provision for pass loan only
- Exchange Equalization Reserve
- Asset Revaluation Reserve (not exceeding 2% of core capital)
- Hybrid Capital Instruments (that possess character of both debt and equity simultaneously)
- Subordinated Term Debt

d) Loan Classification and Loan Loss Provision

Credits and purchases of bills by the commercial banks have been classified as pass, sub-standard, doubtful and loss for the purpose of adequate provisioning. Accordingly, commercial banks are required to make provisions for possible losses as follows:

Table 2.2

Loan Classification and Loan Loss Provision

Categories	Loan Loss Provision
Pass	1%

Sub-standard	25%%
Doubtful	50%%
Loss	100%%

(Source: Unified directives 2009/10)

e) Directives for Lending and other Facilities

NRB has barred an individual, firm or mutually trusted borrowers' credit limit at 25% of the primary capital in the case of fund-based credit and 50% of primary capital in the case of non-fund-based credit, like Letter of Credit, Guarantee, Acceptance Letter, Commitments etc. For loans made prior to issuance of the directives, banks are required to adjust the ratios by the following dates:

Table 2.3

Limits set for Lending and other Facilities

Cut off date	Fund-based loans	Non-fund-based loans
15 July 2009	Not exceeding 40%	Not exceeding 75%
15 July 2010	Not exceeding 25%	Not exceeding 50%

(Source: Unified directives 2009/10)

f) Guidelines for Investment in Stocks and Securities

Commercial Banks are also required to minimize exposures to risks involved in investing the deposits of the savers and other financial resources at their disposal in earning assets.

g) Statistical Information and Reporting

Commercial Banks are required to compile and submit their financial reports keeping in view.

- Nepal Rastra Bank Act.
- Commercial Bank Act.
- International Accounting System
- Nature and types of their respective transaction
- Directives of the Nepal Rastra Bank

- Monetary and Financial Statistics Manual 2000 of the IMF

h) Investment Management Regulation

A commercial bank formulating a written policy may decide to invest in shares and securities of an organized institution. However, such investment is restricted to 10% of paid up capital of the organization. However, the cumulative amount of such investment in all the companies in which the bank has financial interest shall be limited to 20% of the paid up capital of the bank. Nevertheless, the total amount of investment in share and securities of organized institution is restricted to 30% of the paid up capital of the bank. (Directives to Commercial Bank: 81)

Likewise, Commercial Banks are not allowed to invest in any shares, securities, and hybrid capital investment issued by any banks and financial institutions licensed by NRB. Where such investment exists prior to issuance of this directive, such investment should be brought within the restrictive limitation by the fiscal year 2060/61. However, investment on Rural micro finance development Bank's shares are not comes under such restriction.

i) Provision for Minimizing Liquidity Risk

Commercial Banks are required to monitor their liquidity risk. This is to minimize risk inherent in the activities and portfolio of the banks. According to the regulation, a gap found between maturing assets and maturing liabilities is the liquidity risk. They are monitoring their assets and liabilities based on maturity period. Maturity period such as 0-90, 91-180, 81-270, 271-365 days and above 1 year are classified for the purpose of checking.

2.3 Review of Journals and Articles

Benzoni, Dufresne, & Goldstein (2007), in their article, *"Investment 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.

Bikker, Broeders & Dreuc (2008), in their article, *"Stock Market Performance and Pension Fund Investment Policy: Rebalancing, Free Float, or Market Timing?",* have ascertained that stock market performance influences the asset allocation of pension funds in two ways. In the short term, the outperformance of equities over bonds and other investment categories automatically results in higher equity allocation (and vice versa), as pension funds do not continuously rebalance their asset allocation. In the medium term, outperformance of equities induces pension funds to increase their strategic equity allocation (and vice versa). Overall, the estimates indicate that the investment policy of pension funds is partially driven by the (cyclical) performance of the stock market. Apparently, pension funds suffer from

myopic investment behavior: they tend to base investment decisions on recent stock market performance rather than on long-term trends. The study also finds that pension funds react asymmetrically to stock market shocks. Equity reallocation is higher after underperformance of equity investments than after outperformance.

In particular, only 13 percent of positive excess equity returns is rebalanced, while 49 percent of negative shocks results in rebalancing. The former can be indicated as a "buy on the dip" strategy and the latter as a "the trend is your friend" approach. Thus, pension funds limit any decline in equity allocation in response to underperformance, but they allow higher exposures to equities when these outperform other investments. Apparently, equity portfolio managers are able to convince pension funds both to replenish their funds in bear markets (to profit from low asset prices) and to increase the equity allocation in bull markets (to take advantage of rising markets). Large funds' investment behavior is different from that of small funds. They invest more in equity, and their equity allocation is affected much more strongly by actual equity returns. The latter implies that large funds rebalance less, possibly because managers enjoy more freedom in implementing market-timing strategies. We find asymmetric effects on excess equity returns, where the positive effects increase significantly with pension fund size. The coefficient of positive returns of the largest funds is, in fact, significantly above 1, reflecting "overshooting" of free floating, or "positive-feedback trading." A possible explanation is that managers of large funds have more freedom to respond to market developments and, particularly in bull markets, demonstrate great risk tolerance.

Mau (2009), in his article, *"Back to the Basics: A Process Approach for Managing Investment Risk in Stock"* 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.

Savvides (2010), in her article, *"Risk Analysis in Investment Appraisal",* has stated that risk analysis is a useful tool extending the depth of project appraisal and enhancing the investment decision. Risk analysis enhances decision making on marginal projects. A project whose single-value NPV is small may still be accepted following risk analysis on the grounds that its overall chances for yielding a satisfactory return are greater than is the probability of making an unacceptable loss. Likewise, a marginally positive project could be rejected on the basis of being excessively risky, or one with a lower NPV may be preferred to another with a higher NPV because of a better risk/return profile. Moreover, it screens new project ideas and aids the identification of investment opportunities. Very often a new project concept is formulated that needs to be developed into a business opportunity. Before any real expenses are incurred to gather information for a full feasibility study it is possible to apply risk analysis widening the margins of uncertainty for the key project variables to reflect the lack of data. A substantial investment of human and financial resources is not incurred until the potential investors are satisfied that the preliminary risk/return profile of the project seems to be acceptable. In addition, the risk analysis highlights project areas that need further investigation and guides the collection of information.

Risk analysis can contain the costs of investigation and fieldwork aiming at improving the accuracy of a forecast relating to particular project variables. If the cost for obtaining such information is greater than the expected benefit likely to result from the purchase of the information, then the expense is not justified. Also, it aids the reformulation of projects to suit the attitudes and requirements of the investor. A project may be redesigned to take account for the particular risk predispositions of the investor. It induces the careful re-examination of the single-value estimates in the deterministic appraisal. The difficulty in specifying range limits and probability distributions for risk analysis often resides in the fact that the projected values are not adequately researched. The need to define and support explicit assumptions in the application of risk analysis therefore forces the analyst to also critically review and revise the base-case scenario. Eventually, it helps reduce project evaluation bias through eliminating the need to resort to conservative estimates as a means of reflecting the analyst's risk expectations and predispositions.

Brown, Florax and McNamara (2012), in their article, *"Investment Flows in U.S. Manufacturing",* contribute to the relatively small literature on the regional investment. A conceptual model of location determinants is developed, which considers the importance of agglomeration economies, market structure, labor availability and productivity, infrastructure, and fiscal determinants. A cross-regressive model containing spatially lagged explanatory variables and a spatial Durbin model containing spatially lagged explanatory variables, including the lagged dependent variable, are estimated.

The study find a positive impact associated with local agglomeration economies, market size, labor productivity, and transportation infrastructure. Spatial spillovers are found to be of a competitive nature at the state level, implying that a factor that attracts more investment to a particular state is associated with lower investments in neighboring states. Market structure was found to be the most important factor in investment location, which suggests

that the manufacturing sector as a whole still prefers to locate near demand centers. One potential policy implication is that policy makers should focus on economic development policies that attract people if they wish to attract manufacturing investment. Moreover, the attempts to increase the investment flows in a particular state may have competitive implications for investment flows to neighboring states. This may point to the possibility of unintended consequences on the impact of states' economic development policies as well as any federal transfers used to attract investment.

2.4 Review of Thesis

Joshi (2006), conducted a study on *"Lending Practices: A Study on NABIL, SCB Nepal Ltd and Himalayan bank Ltd."* The main objectives of the thesis are;

a. To determine the liquidity position, the impact of deposits in liquidity and its effect in lending practices.
b. To measure the banks' lending strength.
c. To analyze the portfolio behavior of lending and measuring the ratio and volume of loans and advances made in agriculture, priority and productive sectors.
d. To measure the lending performances in quality, efficiency its contribution in total income.

The major findings of the study are;

a. The liquidity position has revealed the mean current ratio of all the three banks is not widely varied.
b. The measurement of liquidity strength has revealed that the total liability to total assets of SCBNL has the highest ratio. The high ratio is the result of high volume of shareholder equity in the liability mix.
c. Himalayan Bank Ltd. has high volume of saving and fixed deposits in comparing to current deposits resulting to low ratio of non- interest bearing deposits to total deposits ratio as compared to the mean ratio.

d. The loans and advances and investment to deposits ratio has shown that NABIL Bank ltd has deployed the highest proportion of its total deposits in earning activities, which indicate that in fund mobilizing activities NABIL bank is significantly better.
e. The mean volume of net assets and deposits is highest in SCBNL with moderate variation. The volume of net assets of Himalayan bank is the least due to the low share capital, reserve and surplus in its capital mix. Whereas volume contributed by Himalayan Bank is highly appreciable as compared to its net assets.
f. The portfolio analysis has revealed that the flow of loans and advances in agriculture sector is the lowest priority sectors among these commercial banks. The contribution of all the banks in industrial sector is appreciable. The contribution by Himalayan Bank in industrial sector is the greatest than that of SCBNL.

Acharya (2007), conducted the study on *"Investment Policy and Analysis of Commercial Banks in Nepal: A Comparative Study of Standard Chartered Bank Ltd. with Nepal Investment Bank and Nepal Bangladesh Bank ltd.*" The main objectives of his thesis are:

a. To discuss fund mobilization and investment policy in respect to its fee based off balance sheet transaction and fund based on balance sheet transaction.
b. Evaluation of the liquidity, efficiency, profitability and risk position.
c. To evaluate the growth ratios of loans and advances, total investment with financial variables
d. To analyze the trends of deposits utilization towards total investment.
e. For this study the financial, accounting and statistical tools have been used. Here, simple analytical tools such as percentage graph, Karl Pearson's coefficient of correlation, regression, and the method of least square and test of hypothesis are used.

The major findings of the study are;

a. SCBL is comparatively better than NIBL and NIBL has the lowest cash and bank balance deposits.
b. SCBL has good deposits collection. Has made enough investment on government securities but maintained low investment policy.
c. The on balance sheet operation is average successful but the off balance sheet transaction has been strongly maintained by the SCBL.
d. SCBL has successfully maintained and managed its assets towards income generating activities.
e. The profitability ratio of SCBNL is comparatively higher position than the other banks.
f. Thus in conclusion, SCBNL are recommended not to give much importance to the government securities and diversify the investment policy on more yield-based funds.
g. SCBL is recommended to collect a large variety of deposits through schemes

Pathak (2008), conducted a study on *"Investment Analysis of Commercial Banks, A comparative study on HBL and Nepal SBI."* The main objectives of the thesis are;

a. To evaluate the liquidity, assets management, efficiency, profitability and risk position of Himalayan Bank in comparison to that of Nepal SBI.
b. To study the relationship between investment and deposits of the banks.
c. To analyze investment trend, deposits trend and total income and their projection for next five years.

The major findings of the study are;

a. Both the banks should maintain required current ratio, as the current ratio of both banks is not sufficient.
b. They have to consider more on the liquidity of the deposits as they

are for the sake of the bank's reputation.

c. Recommended to increase SBI investment and to increase their profitability in future to compete with other banks.
d. As banks have invested less on shares of other companies so recommended to mobilize its fund for business and industries for industrial support.
e. As ratio of interest income to total income is too high in both banks thus its income should not be limited to interest earned from loan.
f. Also recommended to diversify business to more income generating areas like foreign exchange business, remittance and other commission based business.

Gautam (2009), conducted the study on *"Investment Policy of Commercial Banks with Special Reference to Nepal SBI Bank ltd."* The main objectives of the thesis are;

a. To evaluate the liquidity, assets management efficiency, portfolio management and profitability position of the banks.
b. To analyze deposit utilization and its relationship with total investment and net profit of the bank.
c. To determine the growth rate of the bank in terms of deposits, loans and advances, investment and profitability of the bank.
d. To determine the proportion of loan loss provision to total loans and advances and to evaluate the non – performing assets of the bank.
e. To determine the proportion of the investment made by bank in risky and risk free assets and evaluate off balance sheet operation of the bank.

The major findings of the study are;

a. Liquidity position of bank is found to be high, thus the bank is recommended to look upon new areas of lending and investment.
b. To compromise between the liquidity and credit needs of rural

economy, the bank is highly recommended to expand its credit in this area.

c. As the amount of investments made by the bank is found very little and also inconsistent during the period, the bank is recommended to increase the investment, which help to utilize the idle funds into income generation as well as minimizes risk and also helps to maintain optimal level of liquidity.
d. Increasing amount of investment in government securities also helps the bank to maintain an equilibrium level of risk free a risky assets.
e. The portion of OBS transactions is found decreasing in comparison to loans and advances. Nowadays most of the commercial banks are getting more benefits and increasing their earning through the enactment of fee based OBS transaction. Thus recommended to give more priority to increase fee based OBS transactions to generate more income.
f. The bank is advised to examine carefully from time to time the portfolio management strategies to maintain equilibrium in the portfolio of loans and investment and make continuous efforts to explore new, competitive and high yielding investment opportunities to optimizes the return.
g. The bank is recommended not to expand the business in the industrial and commercial sectors heavily instead it is advised to give more focus to increase its volume of credit to other sectors.

Thapa (2010), conducted a study on *"A comparative Study on Investment Policy of Nepal Bangladesh Bank Limited and other Joint Venture bank."* The main objectives of the thesis are;

a. To evaluate the liquidity, assets management, efficiency profitability and risk position of NB banks in comparison to NABIL and NGBL.
b. To analyze the ratio relationship between loan and advances and total investment with other financial variables of Sample Banks.

c. To examine the fund mobilization and investment policy of NB bank through off balance sheet and on- balance sheet activities in comparison to the other two banks.
d. To study the various risk in investment
e. To analyze the deposit utilization trend and its projection for next five years of sample banks.

The major findings of the thesis are;

a. The liquidity position of NB bank is comparatively better that that of NABIL and NGBL It has the highest cash and bank balance to total deposits, cash and bank balance to current assets ratio. It has good deposits collection and has made enough loan and advances, however made the negligible amount of investment in government securities.
b. The NB bank is not in better position regarding its on balance as well-as off balance activities in comparing to NABIL and NGBL. It does not follow any definite policy regarding the management of asset.
c. The profitability position of NB bank is comparatively worse than that of NABIL and NGBL. Must maintain the high profit margin for the well being in future.
d. NB bank has maintained high growth rate in comparison to other banks though it is not successful to make enough investment.
e. The position of NB bank in regard to utilization of the fund to earn profit is not better in compare to NABIL and NGBL.
f. NB bank has not provided ATM facility, credit facility, any branch bank facilities and web site etc. Though these facilities are being offered by NABIL and NGBL.

Rupakheti (2012), conducted a study on *"Investment Policy Analysis of NIBL and EBL."* The main objectives of this study are;

a. To examine investment policy of EBL and NIBL.
b. To analyze the investment in each sector, i.e. in government securities, corporate shares and debentures and interbank lending.

c. To evaluate the provision on possible losses to total investment.
d. To collect the opinions of bank related personnel for the enhancement necessary for having best investment policy.

The major findings of the thesis are;

- The investment in government securities to total investment is 89.50% in EBL and 44.75% in NIBL in average. Among the various government securities, the treasury bill occupies major portion.
- NIBL has not invested in corporate debenture, while EBL has invested in both corporate shares and corporate debenture from the fiscal year 2007/08. Nonetheless the investment in corporate shares and debentures is comparatively very low to government securities. In average, the investment in corporate shares and debentures to total investment of EBL is 1.32% and NIBL is 0.67%.
- EBL has neglected local interbank lending in most of the years. The interbank lending to total investment of EBL is 9.17% and that of NIBL is 54.57% in average.
- Both the bank has maintained provision for investment. Astonishingly, both the banks have maintained 0.03% of the total investment as the provision for probable loss on investment.

2.5 Research Gap

The most of the previous studies made are concerned with comparing the total investment with the total deposit and do not enlightens on each component of the investment. Tracing this defect, the present study is conducted to analyze the investment priority given by the banks in each component of the investment, such as corporate shares and debentures, corporate securities and debentures, lending and so on. Moreover, this study computes the return and risk on each type of investment and further analyzes the portfolio risk and return on investment of the banks.

CHAPTER – III
RESEARCH METHODOLOGY

3.1 Research Design

"Research design is a plan, structure and strategy of investigations conceived so as to obtain answers to research questions and to control variances." *(Wolf; 1975:51)* It is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Considering the objectives of the study, the analysis is based on certain research design. In order to achieve objectives, descriptive and analytical research design has been adopted. Descriptive research design describes the general pattern of the investors, business environment, problem of portfolio management etc. The analytical research design makes analysis of the information and data. Most of the data and information of the study were concerned with past phenomenon. So it can be regarded as historical research.

It covers the data from the fiscal year 2005/06 to 2009/10. It deals with the study of investment analysis of commercial banks in Nepal. As the title of the study suggests it is more analytical and empirical and less descriptive.

3.2 Population and Sample

The population of the study is all the commercial banks operating in the country. Until now total numbers of commercial banks are 33. Hence, these 32 commercial banks are the population of the study. For this study, three commercial banks are taken as sample. The samples are selected randomly.

The selected sample banks for the analysis are as follows:

a. Nabil Bank Limited (NABIL)
b. Standard Chartered Bank Nepal Limited (SCBNL)
c. Himalayan Bank Limited (HBL)

3.3 Sources of Data

This study is mainly based on secondary data. The various required data for the study are collected from concerned banks, Nepal Rastra Bank, NEPSE,

SEBO/N and different libraries. Similarly, the required micro-level data are derived from annual reports of selected banks and websites of banks as well as NEPSE. In addition to above sources, supplementary data and information was collected from different library such as library of Global College, T.U. Central Library, Library of NRB, NEPSE, SEBO etc. Likewise, various data and information were collected from the periodical economic journals and from other published and unpublished reports.

The major sources of data and information are as follows:

- Economic survey, Ministry of Finance
- Quarterly Economic Bulletin, NRB
- Macro-Economic Indicators of Nepal, NRB
- Annual reports SEBO Nepal
- Journal of Finance
- Journal of Business
- Website of NEPSE
- Website of different Commercial Banks

3.4 Data Analysis Tools

In order to ascertain investment analysis of any firm, various analytical tools can be used. According to the nature of statement of data, suitable or appropriate tools make the analysis more effective and significant for achieving objective. Two tools, financial and statistical, can be used in this study.

3.4.1 Financial Tools

As this study is related to investment analysis, financial tools are more applicable. Financial tools are those, which are used for the analysis and interpretation of financial data. These tools can be used to get the precise knowledge of a business which in turn, are fruitful in exploring the strengths and weaknesses of the investment policies and strategies. For the sake of analysis, following financial tools have been used in order to meet the purpose of the study.

a) Risk and Return on Individual Investment Assets and Investment Portfolio

i) Return on Government Securities

The return on government securities is computed by dividing interest income on government securities by total investment on government securities, which can be presented as:

$$\text{Return on Gov. Securities } (R_G) = \frac{\text{Interest Income on Gov. Securities}}{\text{Total Investment on Gov. Securities}}$$

ii) Return on Share and Debentures

The return on Shares and Debentures considers dividend yield and capital gain yield i.e. change in market price. "The dividend yield is only a partial indication of the return; hence, there turn on Share and Debenture significantly depends on the change in its Share Price."*(Pandey;1997:332)* The formula for calculating the return on Shares and Debentures is as follow:

$$\text{Return on Shr. \& } Deb. \ (R_s) = \frac{P_{t+1} - P_t + D_{t+1}}{P_t}$$

Where,

P_{t+1} = Closing Price per share at Period t+1

P_t = Closing Price per share at Period t

D_{t+1} = Dividend per share at Period t+1

iii) Return on Loans and Advances

The commercial banks provides loan and advances in various sectors like agriculture, industry, commercial sectors and other important sector. The return on loan and advances can be calculated by dividing total interest earned from loan and advances to total amount of loan and advances. This can be stated as:

$$\text{Return on Loans \& } Adv. \ (R_L) = \frac{\text{Interest Income on Loans \& } Adv.}{\text{Total Investment on Loans \& } Adv.}$$

iv) Return on Portfolio

The return on portfolio is simply 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 expected return is defined in equation as follows;

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

Where,

R_p = Portfolio expected returns

W_A = Weight of investment invested in stock "A"

W_B = Weight of investment invested in stock "B"

R_A = Expected return for stock "A"

R_B = Expected return for stock "B"

v) Risk on Individual Assets

The risk of securities depends on the variability of rates of return. The variability of rates of return defined as the extent of the deviation of individual rates of return from the average rate of return. Risk is measured with the help of standard deviation.

Risk on individual assets can be calculated using historical returns with this equation.

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

Where,

R = Rate of return on Individual Assets

n = Number of years of observations

vi) Risk on Portfolio

The expected risk on portfolio is a function of the proportions invested in the components, the risk of the components and correlation of returns on the component securities. It is measured in terms of variance or standard deviation as follows;

$$б_p = \sqrt{w^2_A б^2_A + w^2_B б^2_B + 2\, w_A\, w_B\, r_{AB}\, б_A\, б_B}$$

where,

$б_p$ = standard deviation of portfolio rate of return

$б_A$ = standard deviation on return on assets A

$б_B$ = 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 of assets A and assets B

b) Ratio Analysis

Ratio analysis is used to compare a firm's financial performance and status to that of other firms or to itself on time. Since this study is mainly focused on investment portfolio analysis of commercial banks, only few ratios related to investment of commercial banks are taken to the purpose of the study.

i) Total Investment to Total Deposit Ratio

This ratio is used to measure the ability of banks to successfully mobilize the total deposits of investment. This ratio can be calculated by dividing total investment by total deposits. It can be stated as:

$$\text{Total Investment to Total Deposit Ratio} = \frac{\text{Total Investment}}{\text{Total Deposit}}$$

ii) Investment on Government Securities to Total Investment

This ratio shows that the banks' investment on government securities in comparison to the total investment. It can be calculated by dividing investment on government securities by total investment.

$$\text{Investment on Gov. Sec. to Total Inv. Ratio} = \frac{\text{Inv. on Gov. Sec.}}{\text{Total Investment}}$$

iii) Investment on Loans & Advances to Total Deposit

This ratio shows that the banks' investment on loan and advances out of total deposit collection. It can be calculated by dividing loan and advances by total deposit.

$$\text{Loans \&Adv. toTotalDepositRatio} = \frac{\text{Inv. on Loans \&Advances}}{\text{Total Deposit}}$$

iv) Investment on Shares & Debentures to Total Investment

This ratio shows that the banks' investment on shares and debentures of other companies. It can be calculated by dividing investment on share and debenture by total investment.

$$\text{Investment on Shr. \& Deb. toTotalInv.} = \frac{\text{Investment on Shr. \&Deb.}}{\text{Total Investment}}$$

3.4.2 Statistical Tools

Various statistical tools can be used to analyze the data available to the researcher. To support this study, statistical tools such as mean, standard deviation, co-efficient of variation and trend analysis have been used for analyzing and evaluating various data, which are as follows:

i) Mean

Arithmetic mean or simply a mean of set observations is the sum of all the observations divided by the number of observations. Arithmetic mean is also known as the arithmetic average.

Let x_1, x_2, x_3, ……., x_n be the n values of the variable then their

arithmetic mean be denoted by x is defined by,

$$\bar{x} = \frac{x_1 + x_2 + x_3 + \ldots\ldots\ldots\ldots\ldots\ldots + x_n}{n}$$

Where, n is the number of observations.

ii) Standard Deviation

The standard deviation is the absolute measure of dispersion in which the drawbacks present in other measures of dispersion are removed. It is said to be the best measure of dispersion as it satisfies most of the requisites of a good measure of dispersion.

$$\sigma = \frac{\sum(X - \bar{X})^2}{N}$$

iii) Coefficient of Variation

The coefficient of dispersion based on standard deviation multiplied by 100 is known as the coefficient of variation (C.V.). Less the C.V., more will be the uniformity and more the C.V., less will be uniformity. If x be the arithmetic mean and s.d the standard deviation of the distribution, then the C.V. is defined by,

$$C.V. = \frac{\sigma \text{ x } 100}{\text{Mean}}$$

iv) Correlation Coefficient

When the relationship is of quantities nature, the appropriate statistical tool for discovering and measuring the relationship and expressing it in a brief formula is known as correlation. If the values of the variables are directly proportional then the correlation is said to be positive. On the other hand, if the values of the variables are inversely proportional, the correlation is said to be negative, but the correlation said to be negative, but the correlation coefficient always remains within the limit of +1 to -1. By Karl Pearson, the simple correlation coefficient (R) is;

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

v) Regression Lines

The regression line is the line, which gives the best estimate of one variable for any given value of the other variable. In case of two variables X and Y, we will have two regression lines i.e. lines is called the regression equation and also estimating equations. Since there are two regression lines, there are two regression equations.

Regression equation of Y on X

The regression equation is expressed as;

$$y = a + bx$$

We shall get the normal equation for estimating "a" and "b" as.

$$\sum Y = Na + b \sum X$$

$$\sum XY = a\sum X + b \sum X^2$$

Where,

X = the value of independent variable

Y = the value of dependent variable

a = Y-intercept

b = slope of the trend line/coefficient of regression

N = number of pairs of observations.

vi) T-Statistics

T-test, commonly known as Student's T-Distribution, is used when sample size is equal to or less than 30, the parent population from which the sample is drawn is normal, the population standard deviation is unknown. Moreover, the t-distribution process is a continuous distribution, and the curve is bell shaped and symmetrical, however, for different sample size, the t-distribution is also different and is flatter than the normal distribution. In order to test the significance of an observed sample correlation coefficient, the following procedure has been applied:

The following formula is used to test an observed sample correlation coefficient:

$$t = \frac{r}{\sqrt{1-r^2}} \times \sqrt{(n-2)}$$

Where, r = simple correlation coefficient

N = number of observation

CHAPTER – IV

DATA PRESENTATION AND ANALYSIS

4.1 Return on Individual Investment

4.1.1 Return of Government Securities

Government securities are the fixed income securities issued by the government. These securities are among the safest of all investments as the government is unlikely to default on interest or principal repayments. The return on government securities such as Treasury Bills, Development Bonds, and National Saving Bonds etc. of NABIL, SCBNL and HBL is presented in the Table 4.1, Table 4.2 and Table 4.3 respectively.

Table 4.1

Return on Government Securities of NABIL

FY	Interest Income on Govt. Securities	Investment in Govt. Securities	Return on Govt. Securities (R_g)
2006/07	132.23	4808.35	2.75
2007/08	198.44	4646.89	4.27
2008/09	269.19	3706.1	7.26
2009/10	332.87	7941.55	4.19
2010/11	519.93	8745.23	5.95
Average	**290.53**	**5969.62**	**4.88**

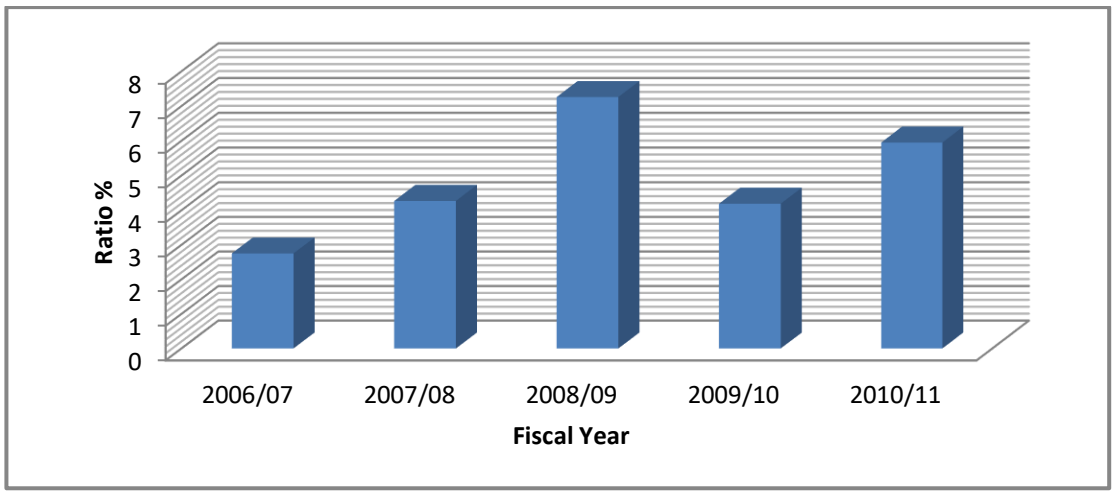
(Source: Annual Reports of NABIL)

The table 4.1 revealed the interest income made by the NABIL bank on the government securities it had invested. The table showed that interest income on government securities had been in increasing trend, and the investment on government securities of NABIL was also in increasing trend in most of the observed periods. However, the return on government securities had fluctuated during the periods. The return on government securities of NABIL was 2.75% in the fiscal year 2006/07, which increased to 4.75% in the fiscal year 2007/08, increased to 7.26% in the fiscal year 2008/09, again decreased to 4.19% in the fiscal year 2009/10 and finally increased to 5.95% in the fiscal year 2010/11. In

average, NABIL bank generated 4.88% of the average investment in the five consecutive fiscal years period. The interest income earned on government securities by the bank in average was Rs. 290.53 millions and the investment made in government securities was Rs. 5969.62 millions in average.

Figure 4.1

Return on Government Securities of NABIL



Similarly, the return on government securities of SCBNL is presented in the table 4.2.

Table 4.2

Return on Government Securities of SCBNL

FY	Interest Income on Govt. Securities	Investment in Govt. Securities	Return on Govt. Securities (R_g)
2006/07	326.55	7107.94	4.59
2007/08	319.61	8137.61	3.93
2008/09	406.33	9998.76	4.06
2009/10	436.31	8531.52	5.11
2010/11	607.86	9957.26	6.10
Average	**419.33**	**8746.62**	**4.76**

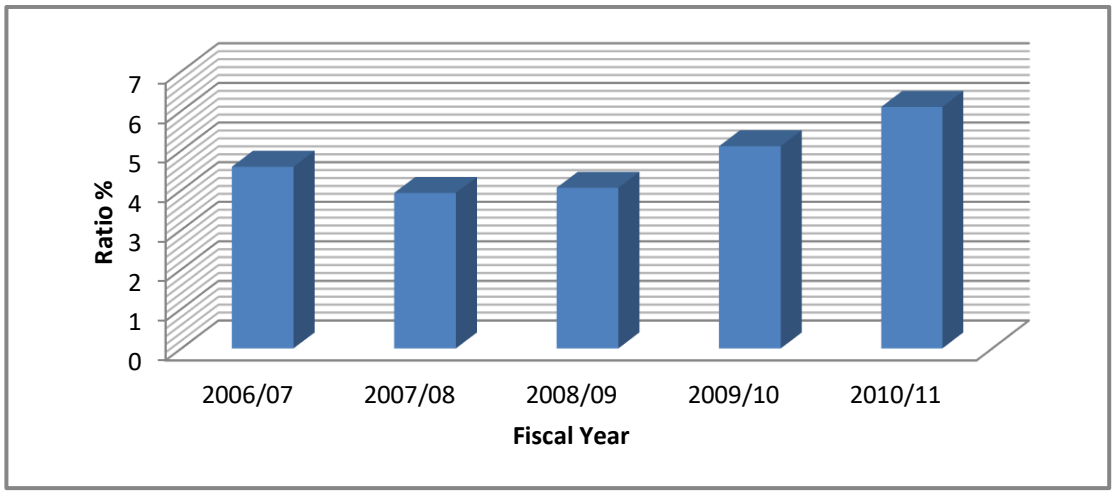
(Source: Annual Reports of SCBNL)

The table 4.2 showed that the interest income on government securities of SCBNL has decreased in the first two fiscal years and then increased in the last three fiscal years. However, the investment in government securities of the

bank has increased in most of the fiscal years. The interest income on government securities has ranged from Rs. 319.61 millions in the fiscal 2007/08 to Rs. 607.86 millions in the fiscal year 2010/11, and the investment in government securities of the bank has ranged from Rs. 7107.94 millions in the fiscal year 2006/07 to Rs. 9998.76 millions in the fiscal year 2008/09. Likewise, the return on government securities of SCBNL has increased except in the fiscal year 2007/08, and thus has ranged from 3.93% in the fiscal year 2007/08 to 6.10% in the fiscal year 2010/11. The table showed that SCBNL generated 4.76% of the total investment it had made on government securities as average return.

Figure 4.2

Return on Government Securities of SCBNL



Also, the return on government securities of HBL is depicted in the Table 4.3.

Table 4.3

Return on Government Securities of HBL

FY	Interest Income on Govt. Securities	Investment in Govt. Securities	Return on Govt. Securities (R_g)
2006/07	191.55	6454.88	2.97

2007/08	201.31	7471.66	2.69
2008/09	354.95	4212.30	8.43
2009/10	216.04	4465.37	4.84
2010/11	389.10	6407.36	6.07
Average	**270.59**	**5802.31**	**5.00**

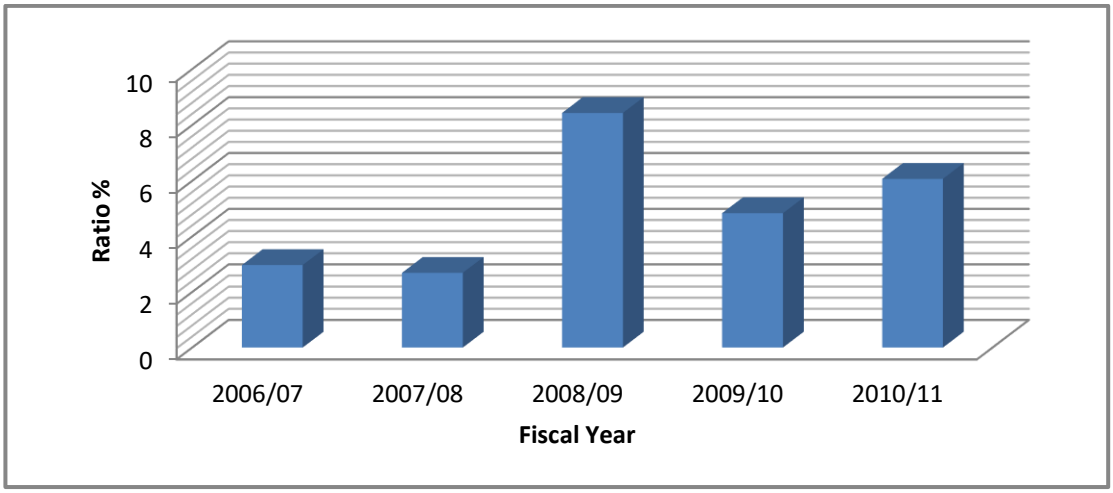
(Source: Annual Reports of HBL)

The table 4.3 showed that all the interest income, investment in government securities and return on government securities of HBL followed fluctuating trend in the five years period taken for research. The table showed that HBL made highest return, 8.43%, in the fiscal year 2008/09 and lowest return, 2.69% in the fiscal year 2007/08 on the investment in government securities. The table also delineated that HBL was able to generate only 5.00% of the total investment in government securities as interest income in average.

Moreover, the interest income on government securities has ranged from Rs. 191.55 millions in the fiscal year 2006/07 to Rs. 389.10 millions in the fiscal year 2010/11 and the investment in government securities has ranged from Rs. 4212.30 millions in the fiscal year 2008/09 to Rs. 7471.66 millions in the fiscal year 2007/08.

Figure 4.3

Return on Government Securities of HBL



As the study is concerned with the comparative study of investment portfolio, the comparison on the return on government securities has been done in the Table 4.4.

Table 4.4

Comparison on Return on Government Securities

Average	NABIL	SCBNL	HBL
Interest Income	Rs. 290.53	Rs. 419.33	Rs. 270.59
Investment	Rs. 5969.62	Rs. 8746.62	Rs. 5802.31
Return (R_g)	4.88%	4.76%	5.00%

(Source: Table 4.1, Table 4.2 & Table 4.3)

Comparing three banks on the basis of return on government securities, it can be concluded that HBL was more efficient in generating interest income in government securities, as HBL achieved the highest average return (5.00%) than NABIL (4.88%) and SCBNL (4.76%) did.

4.1.2 Return on Loans and Advances

Loans and advance are the main source of income for commercial banks. The facility of granting loan and advances is one of the main services, which customers of the commercial banks can enjoy. Hence, in order to realize their objectives, the commercial banks invest in various sectors like agriculture, industry, commercial sectors, service sectors and other important sectors.

Table 4.5

Return on Loan and Advances of NABIL

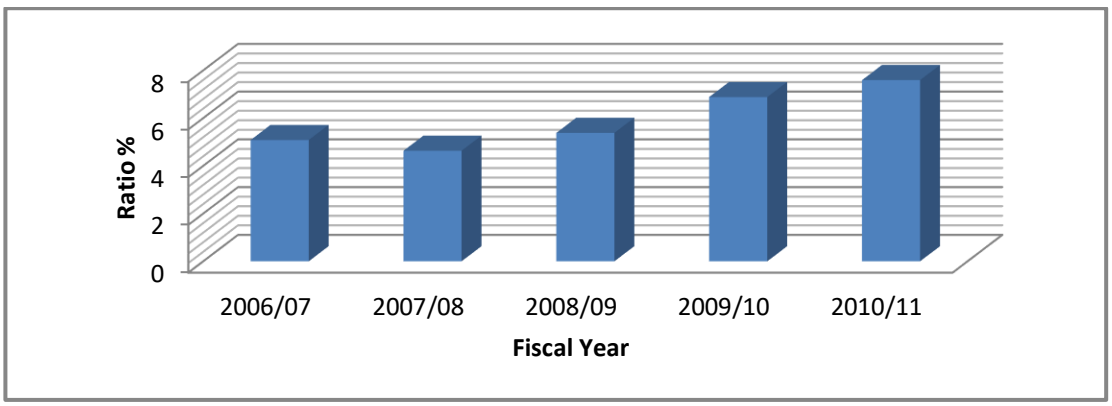
FY	Interest Income on Loan and Advances	Investment in Loan & Advances	Return on Loan & Advances (R_l)
2006/07	789.39	15545.78	5.08
2007/08	989.76	21365.05	4.63
2008/09	1483.04	27589.93	5.38
2009/10	2219.75	32268.87	6.88
2010/11	2885.34	38034.09	7.59
Average	**1673.46**	**26960.74**	**5.91**

(Source: Annual Reports of NABIL)

The table 4.5 delineated the return on loan and investment of NABIL. The table depicted that both the interest income and loan amount of NABIL bank were in increasing trend. In average, NABIL disbursed Rs. 26960.74 millions loan and earned Rs. 1673.46 millions interest. However, the return on loan and advances had increased except in the fiscal year 2007/08. The return on loan and advances has ranged from 4.63% in the fiscal year 2007/08 to 7.59% in the fiscal year 2010/11, however, at the inception of the observed years, it was 5.08%. This verified that the interest income did not increase in the same proportion as the loan and advances increased in some year, which is quite dissatisfactory. However, in average NABIL earned 5.91% interest income on the average loan and investment disbursed.

Figure 4.4

Return on Loan & Advances of NABIL



The return on loans and advances of SCBNL is presented in the Table 4.6.

Table 4.6

Return on Loan and Advances of SCBNL

FY	Interest Income on Loan and Advances	Investment in Loan & Advances	Return on Loan & Advances (R_l)
2006/07	665.16	10502.64	6.33
2007/08	813.19	13718.59	5.93
2008/09	1027.71	13679.76	7.51
2009/10	1265.22	15956.96	7.93
2010/11	1731.02	18427.27	9.39
Average	**1100.46**	**14457.04**	**7.42**

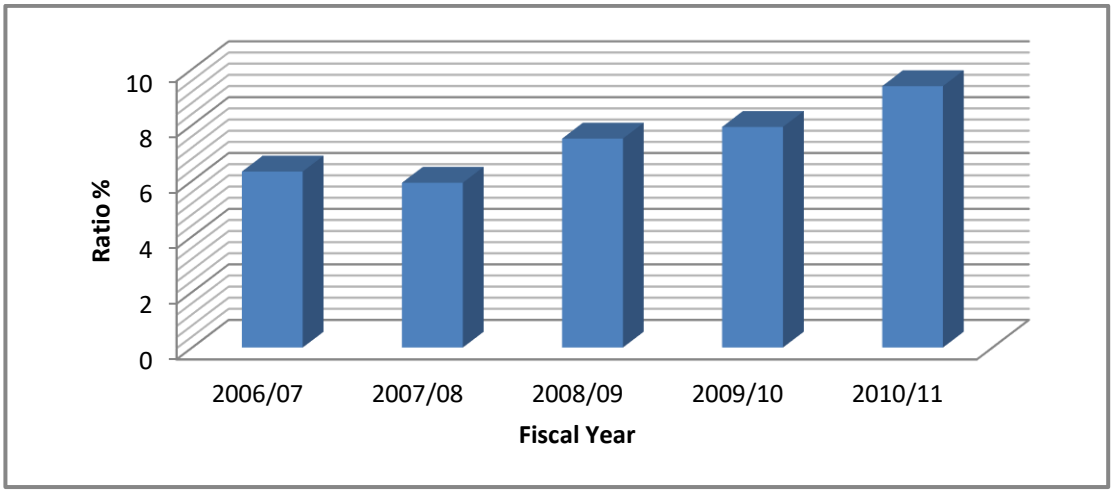
(Source: Annual Reports of SCBNL)

The table 4.6 depicted that the interest income on loan and advances has increased in each year and the investment in loan and advances followed increasing trend in most of the periods, except in the fiscal year 2008/09. The interest income on loan and advances has increased from Rs. 665.16 millions in the fiscal year 2006/07 to Rs. 1731.02 millions in the fiscal year 2010/11 and the investment in loan and advances has ranged from Rs. 10502.64 millions in the fiscal year 2006/07 to Rs. 18427.27 millions in the fiscal year 2010/11. In average NABIL earned Rs. 1100.46 millions interest income and invested Rs. 14457.04 millions loan and advances.

Moreover, the return on loan and advances of SCBNL was also in increasing trend in most of the fiscal years. The return on loan and advances of the bank has gradually increased from Rs. 5.93% in the fiscal year 2007/08 to 9.39% in the fiscal year 2010/11, and in average it has been measured to be 7.42%.

Figure 4.5

Return on Loan and Advances of SCBNL



Similarly, the return on loans and advances of HBL is depicted in the Table 4.7.

Table 4.7

Return on Loan and Advances of HBL

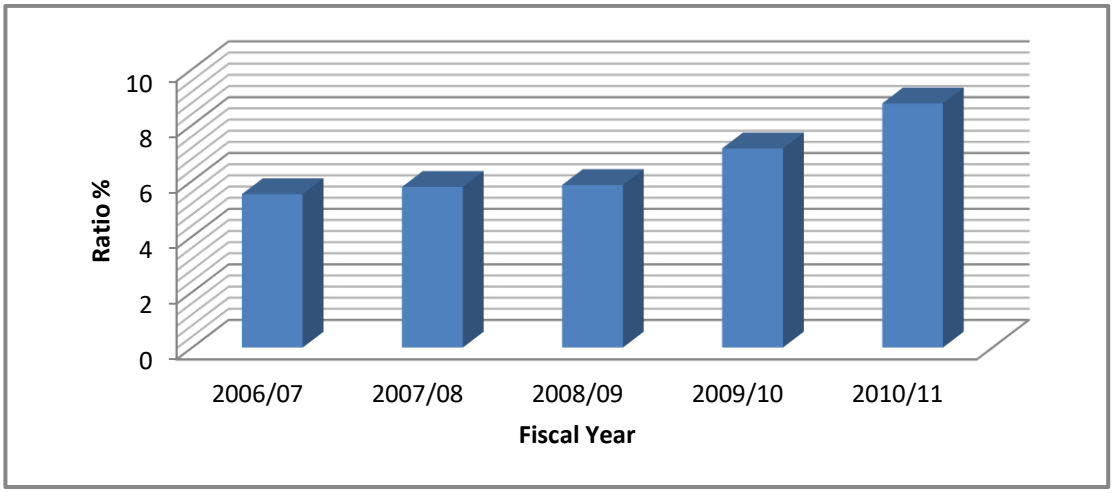
FY	Interest Income on Loan and Advances	Investment in Loan & Advances	Return on Loan & Advances (R_l)
2006/07	938.61	16998.00	5.52
2007/08	1126.11	19497.20	5.78
2008/09	1449.89	24793.16	5.85
2009/10	2003.14	27980.63	7.16
2010/11	2767.67	31566.98	8.77
Average	**1657.08**	**24167.19**	**6.61**

(Source: Annual Reports of HBL)

The table 4.7 showed that HBL earned Rs. 1657.08 millions as average interest income and invested Rs. 24167.19 millions on loans and advances. Both the interest income and loans & advances were in increasing trend. Moreover, the return on loan & advances was in increasing trend. The table explored that HBL made highest return of 8.77% in the fiscal year 2010/11 and lowest of 5.52% in the fiscal year 2006/07. In average, HBL turned 6.61% of the loans and advances as interest income.

Figure 4.6

Return on Loan and Advances of HBL



Finally, the comparison on the return on loans and advances of the three sampled banks has been done in the Table 4.8.

Table 4.8

Comparison on Return on Loans and Advances

Average	NABIL	SCBNL	HBL
Interest Income	Rs. 1673.46	Rs. 1100.46	Rs. 1657.08
Investment	Rs. 26960.74	Rs. 14457.04	Rs. 24167.19
Return (R_1)	5.91%	7.42%	6.61%

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

Comparing three sampled banks, it can be concluded that the investment on loans and advances of SCBNL is most secured and fruitful than the other two banks, since return on loan and advances of SCBNL (7.42%) was highest than that of NABIL (5.91%) and HBL (6.61%). However, the average interest earning of NABIL (Rs. 1673.46 millions) was highest in comparison to that of HBL (Rs. 1657.08 millions) and SCBNL (Rs. 1100.46 millions), this was simply because NABIL disbursed more loan than HBL and SCBNL.

4.1.3 Return on Shares and Debentures

Investors receive dividend as return on investment in shares and interest as return on investment in debentures. Hence, the return on shares and debentures is the combination on interest and dividend received. The higher the return on

shares and debentures, the higher will be the retaining capacity of banks on investors. The return on shares and debentures of NABIL, SCBNL and HBL is presented in the Table 4.9, Table 4.10 and Table 4.11 respectively.

Table 4.9

Return on Shares and Debentures of NABIL

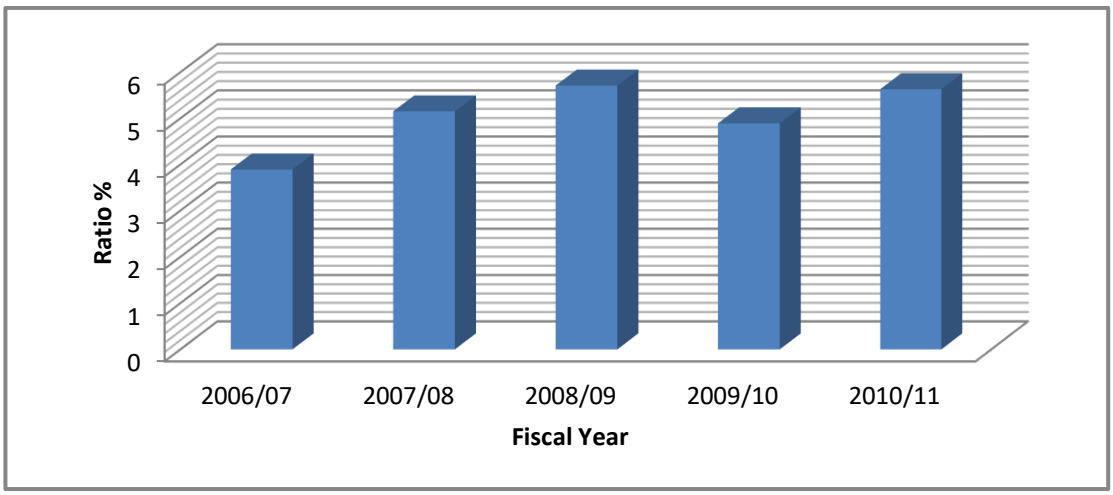
FY	Income on SD	Investment in SD	Return on SD (R_s)
2006/07	11.15	286.95	3.89
2007/08	16.65	323.23	5.15
2008/09	20.27	354.93	5.71
2009/10	7.82	159.86	4.89
2010/11	10.83	192.49	5.63
Average	**13.34**	**263.49**	**5.05**

(Source: Annual Reports of NABIL)

The table 4.9 showed the return on investment in shares and debentures of NABIL. The table showed that NABIL earned highest return in the fiscal year 2008/09, when the return was 5.71% of the total investment in shares and debentures. Similarly, the return on shares and debentures was lowest in the fiscal year 2006/07, which was 3.89%. In average, NABIL earned 5.05% as dividend and interest on the share and debenture investment. Moreover, the average income on share and debenture of the bank was Rs. 13.34 millions, and the average investment on share and debenture was Rs. 263.49 millions.

Figure 4.7

Return on Shares and Debentures of NABIL



The return on shares and debentures obtained by SCBNL on the investment is presented in the Table 4.10.

Table 4.10

Return on Shares and Debentures of SCBNL

FY	Income on SD	Investment in SD	Return on SD (R_s)
2006/07	0.25	44.94	0.56
2007/08	1.31	114.53	1.14
2008/09	3.13	115.42	2.71
2009/10	6.19	115.42	5.36
2010/11	7.11	117.92	6.03
Average	**3.60**	**101.65**	**3.16**

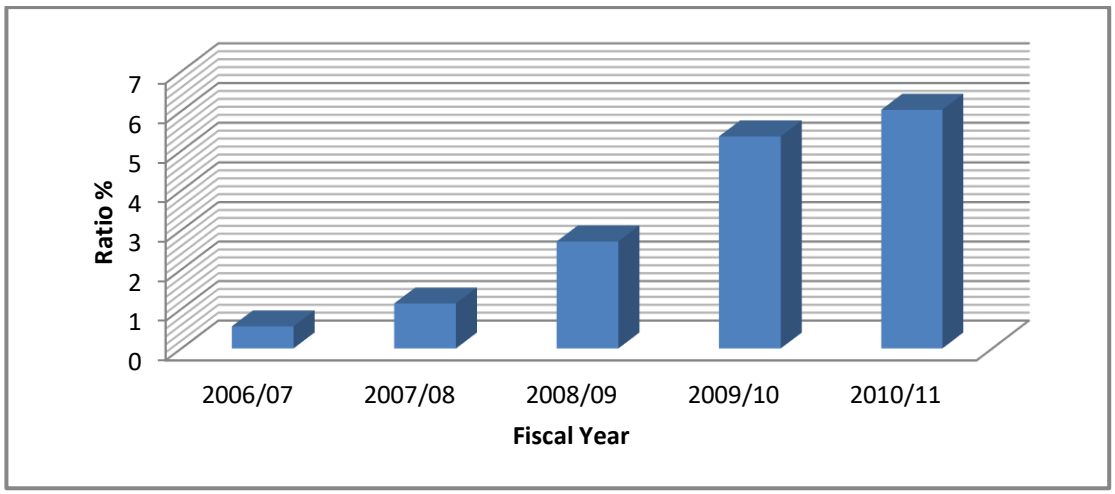
(Source: Annual Reports of SCBNL)

The table 4.10 showed that the return on share and debenture investment of SCBNL had increased in most of the fiscal years, except in the fiscal year 2006/07. Moreover, the income on share and debenture and the investment on it have also increased. The income on share and debenture has ranged from Rs. 0.25 millions in the fiscal year 2006/07 to Rs. 7.11 millions in the fiscal year 2010/11, and the investment in share and debenture of the bank has increased from Rs. 44.94 millions to Rs. 117.92 millions in the same period. The return has been observed to be 0.56% in the fiscal year 2006/07, 1.14% in the fiscal

year 2007/08, 2.71% in the fiscal year 2008/09, 5.36% in the fiscal year 2009/10 and 6.03% in the fiscal year 2010/11. In average, SCBNL earned 3.16% of the investment in shares and debentures as dividend and interest income.

Figure 4.8

Return on Shares and Debentures of SCBNL



Similarly, the return achieved by HBL on the investment in shares and debentures is presented in the Table 4.11.

Table 4.11

Return on Shares and Debentures of HBL

FY	Income on SD	Investment in SD	Return on SD (R_s)
2006/07	0.72	73.42	0.98
2007/08	1.85	89.56	2.07
2008/09	3.44	93.88	3.66
2009/10	7.00	78.88	8.87
2010/11	8.38	88.79	9.44
Average	**4.28**	**84.91**	**5.00**

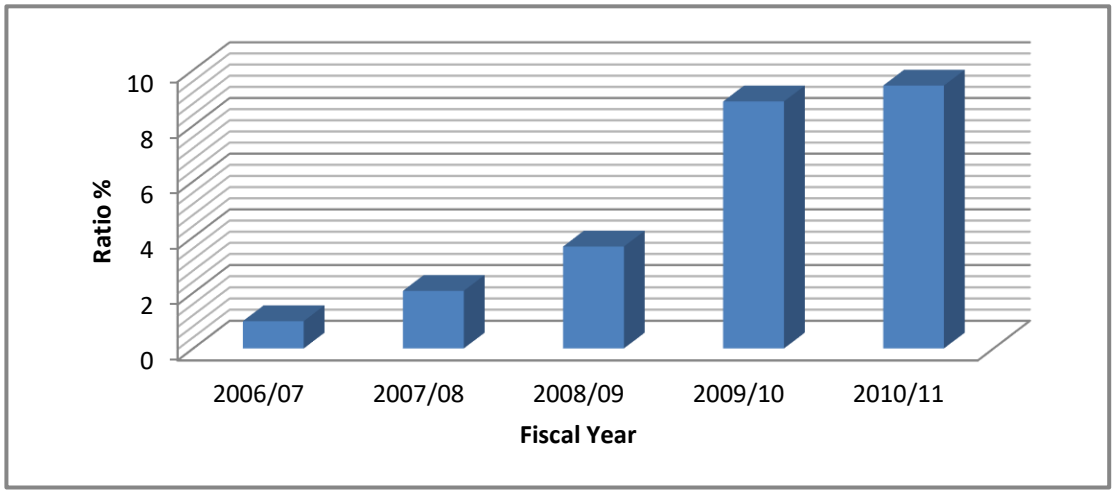
(Source: Annual Reports of HBL)

The table 4.11 showed that the income on share and debenture of HBL has increased in the five year periods, and the investment in share and debenture of has increased for the first three fiscal years. The income on share and debenture

of the bank has increased from Rs. 0.72 millions in the fiscal year 2006/07 to Rs. 8.38 millions in the fiscal year 2010/11, and the investment in corporate share and debentures of the bank has ranged from Rs. 73.42 millions in the fiscal year 2006/07 to Rs. 93.88 millions in the fiscal year 2008/09. Moreover, the return on shares and debentures of HBL has followed increasing trend. The return ranged from 0.98% in the fiscal year 2006/07 to 9.44% in the fiscal year 2010/11. In average, HBL earned 5.00% of the total investment in shares and debentures as interest and dividend.

Figure 4.9

Return on Shares and Debentures of HBL



The comparison on the return on shares and debentures of three banks is presented in the Table 4.12.

Table 4.12

Comparison on Return on Shares and Debentures

Average	**NABIL**	**SCBNL**	**HBL**
Interest & Div. Income	Rs. 13.34	Rs. 3.60	Rs. 4.28
Investment	Rs. 263.49	Rs. 101.65	Rs. 84.91
Return (R_s)	5.05%	3.16%	5.00%

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

Comparing the sampled banks, it can be concluded that NABIL bank's investment in shares and debentures was more fruitful than other banks, since the amount of interest earned by NABIL (Rs. 13.34 millions) was highest in

comparison to that of SCBNL (Rs. 3.60 millions) and HBL (Rs. 4.28 millions) and also the return on shares and debentures of NABIL (5.05%) was highest in comparison to that of SCBNL (3.16%) and HBL (5.00%).

4.2 Risk on Individual Investment

4.2.1 Risk on Government Securities

The risk on government securities is measured by the standard deviation on return on government securities. Higher the variability on the return creates higher the uncertainty and thus higher risk. The risk on government securities of NABIL, SCBNL and HBL is presented in the Table 4.13, Table 4.14 and Table 4.15 respectively.

Table 4.13

Risk on Government Securities of NABIL

FY	Return on Gov. Securities (R_g)	$R - \overline{R}_g$	$(R - \overline{R}_g)^2$
2006/07	2.75	-2.13	4.5540
2007/08	4.27	-0.61	0.3770
2008/09	7.26	2.38	5.6454
2009/10	4.19	-0.69	0.4816
2010/11	5.95	1.07	1.1364
		$\sum(R - \overline{R}_g)^2$	**12.1943**
		Risk (σ_g)	**1.56**

(Source: Appendix I)

The table 4.13 measures the risk on the government securities of NABIL bank. As the variance on return on government securities in the fiscal year 2008/09 was highest, i.e. 5.6454, and least in the fiscal year 2007/08, i.e. 0.3770, it can be considered that the investment in government securities was most risky in the fiscal year 2008/09 and least risky in the fiscal year 2007/09. However there was 1.56% (σ_g) risk in the return on government securities of NABIL.

Table 4.14

Risk on Government Securities of SCBNL

FY	Return on Gov. Securities (R_g)	$R - \overline{R}_g$	$(R - \overline{R}_g)^2$
2006/07	4.59	-0.17	0.0282
2007/08	3.93	-0.83	0.6856
2008/09	4.06	-0.70	0.4872
2009/10	5.11	0.35	0.1239
2010/11	6.10	1.34	1.8010
	$\sum(R - \overline{R}_g)^2$		**3.1259**
		Risk (σ_g)	**0.79**

(Source: Appendix I)

The table 4.14 revealed the risk on government securities of SCBNL. The table showed the risk on generating return on government securities was most in the fiscal year 2010/11 (σ^2_g = 1.8010) and least in the fiscal year 2006/07 (σ^2_g = 0.0282). Similarly, in the five consecutive years there was 0.79% (σ_g) risk in the return in government securities of SCBNL.

Table 4.15

Risk on Government Securities of HBL

FY	Return on Gov. Securities (R_g)	$R - \overline{R}_g$	$(R - \overline{R}_g)^2$
2006/07	2.97	-2.03	4.1209
2007/08	2.69	-2.31	5.3361
2008/09	8.43	3.43	11.7649
2009/10	4.84	-0.16	0.0256
2010/11	6.07	1.07	1.1449
	$\sum(R - \overline{R}_g)^2$		**22.3924**
		Risk (σ_g)	**2.12**

(Source: Appendix I)

The table 4.15 delineated that the risk in return on government securities of HBL was most in the fiscal year 2008/09 (σ^2_g = 11.7649) and least in the fiscal year 2009/10 (σ^2_g = 0.0256). Also, there was 2.12% (σ_g) risk in the return on investment in government securities of HBL.

Table 4.16

Comparison on Risk on Government Securities

Risk	NABIL	SCBNL	HBL
$б_g$	1.56%	0.79%	2.12%

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

Comparing three sample banks, it can be concluded that the risk in return on investment on government securities of HBL (2.12%) was highest in comparison to that of SCBNL (0.79%) and NABIL (1.56%). Nonetheless, the return on government securities of HBL (5.00%) was highest, substantiating the assumed axiom that the higher risk yields higher return.

4.2.2 Risk on Loan and Advances

Loans and advances is considered as the most riskier investment than other. The risk on loans and advances of NABIL, SCBNL and HBL is presented in the Table 4.17, Table 4.18 and Table 4.19 respectively.

Table 4.17

Risk on Loan and Advances of NABIL

FY	Return on Loan & Advances (R_l)	$R - \overline{R}_l$	$(R - \overline{R}_l)^2$
2006/07	5.08	-0.83	0.6922
2007/08	4.63	-1.28	1.6435
2008/09	5.38	-0.53	0.2830
2009/10	6.88	0.97	0.9370
2010/11	7.59	1.68	2.8157
	$\sum (R - \overline{R}_l)^2$		**6.3715**
		Risk (σ_l)	**1.13**

(Source: Appendix I)

The table 4.17 measured the risk in return on loan and advances of NABIL. The table delineated that the risk in loan and advances was highest (σ^2_l = 2.8157) in the fiscal year 2010/11 and lowest (σ^2_l = 0.2830) in the fiscal year 2008/09. In five consecutive reviewed years, there was 1.13% (σ_l) risk in the return on investment in loans and advances of NABIL.

Table 4.18

Risk on Loan and Advances of SCBNL

FY	Return on Loan & Advances (R_l)	$R - \overline{R}_l$	$(R - \overline{R}_l)^2$
2006/07	6.33	-1.09	1.1837
2007/08	5.93	-1.49	2.2141
2008/09	7.51	0.09	0.0085
2009/10	7.93	0.51	0.2621
2010/11	9.39	1.97	3.8888
	$\sum (R - \overline{R}_l)^2$		**7.5573**
		Risk (σ_l)	**1.23**

(Source: Appendix I)

The table 4.18 revealed the risk on loan and advances of SCBNL. The table showed the risk on generating return on loan and advances was most in the fiscal year 2010/11 (σ^2_l = 3.8888) and least in the fiscal year 2008/09 (σ^2_l = 0.0085). Similarly, in the five consecutive years there was 1.23% (σ_l) risk in the return in loan and advances of SCBNL.

Table 4.19

Risk on Loan and Advances of HBL

FY	Return on Loan & Advances (R_l)	$R - \overline{R}_l$	$(R - \overline{R}_l)^2$
2006/07	5.52	-1.10	1.2012
2007/08	5.78	-0.84	0.6989
2008/09	5.85	-0.77	0.5868
2009/10	7.16	0.54	0.2959
2010/11	8.77	2.15	4.6397
	$\sum (R - \overline{R}_l)^2$		**7.4225**
		Risk (σ_l)	**1.22**

(Source: Appendix I)

The table 4.19 depicted that the risk on return in loan and advances of HBL bank was in fluctuating trend. The risk was most high in the fiscal year 2010/11 (σ^2_l = 4.6397) and least in the fiscal year 2009/10 (σ^2_l = 0.2959). In the five fiscal years, the risk in loan and advances of HBL was 1.22% (σ_l).

Table 4.20

Comparison on Risk on Loan and Advances

Risk	NABIL	SCBNL	HBL
$б_l$	1.13%	1.23%	1.22%

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

Comparing three sampled banks, it can be concluded that SCBNL was the most risk taker in investment on loan and advances. Since, the standard deviation (risk) on return in loans and advances was highest in SCBNL (1.23%) in comparison to that of NABIL (1.12%) and HBL (1.22%). Moreover, like risk, the return on loan and advances was highest in SCBNL. This further substantiates the assumed axiom that higher risk yields higher return. Moreover, it can be deducted that SCBNL has better in managing loan and advances than NABIL and HBL do.

4.2.3 Risk on Shares and Debentures

Besides government, foreign securities and loans & advances, shares and debentures is another medium of earning return. Thus, the risk on shares and debentures of NABIL, SCBNL and HBL is measured with the aid of Table 4.21, Table 4.22 and Table 4.23 respectively.

Table 4.21

Risk on Shares and Debentures of NABIL

FY	Return on Shares & Deb. (R_s)	$R - \overline{R}_s$	$(R - \overline{R}_s)^2$
2006/07	3.89	-1.16	1.3549
2007/08	5.15	0.10	0.0092
2008/09	5.71	0.66	0.4303
2009/10	4.89	-0.16	0.0269
2010/11	5.63	0.58	0.3318
	$\sum (R - \overline{R}_s)^2$		**2.1531**
		Risk (σ_s)	**0.66**

(Source: Appendix I)

The table 4.21 measured the risk on the NABIL's return on investment in shares and debentures. The table showed that the risk in investment in shares and debentures was in fluctuating trend in the observed periods. The risk was highest in the fiscal year 2006/07 (σ^2_s = 1.3549) and lowest in the fiscal year 2007/08 (σ^2_s = 0.0092). Similarly, in five years period the risk in investment on shares and debentures was 0.66%.

Table 4.22

Risk on Shares and Debentures of SCBNL

FY	Return on Shares & Deb. (R_s)	$R - \overline{R}_s$	$(R - \overline{R}_s)^2$
2006/07	0.56	-2.60	6.7600
2007/08	1.14	-2.02	4.0804
2008/09	2.71	-0.45	0.2025
2009/10	5.36	2.20	4.8400
2010/11	6.03	2.87	8.2369
	$\sum (R - \overline{R}_s)^2$		**24.1198**
		Risk (σ_s)	**2.20**

(Source: Appendix I)

The table 4.22 depicted that the risk in investment in shares and debentures of SCBNL was highest in the fiscal year 2006/07 (σ^2_s = 6.7600) and lowest in the fiscal year 2008/09 (σ^2_s = 0.2025). However, there was 2.20% risk in the return in investment in shares and debentures in the five years period.

Table 4.23

Risk on Shares and Debentures of HBL

FY	Return on Shares & Deb. (R_s)	$R - \overline{R}_s$	$(R - \overline{R}_s)^2$
2006/07	0.98	-4.02	16.1926
2007/08	2.07	-2.93	8.6084
2008/09	3.66	-1.34	1.8063
2009/10	8.87	3.87	14.9460
2010/11	9.44	4.44	19.6781
	$\sum (R - \overline{R}_s)^2$		**61.2313**

	Risk (σ_s)	**3.50**

(Source: Appendix I)

The table 4.23 revealed that the risk in return in investment on shares and debentures of HBL was highest in the fiscal year 2010/11 (σ^2_s = 19.6781) and lowest in the fiscal year 2008/09 (σ^2_s = 1.8063). In average, there was 3.50% risk (σ_s) in the return in investment in shares and debentures on HBL in the five years period.

Table 4.24

Comparison of Risk on Shares and Debentures

Risk	**NABIL**	**SCBNL**	**HBL**
σ_s	0.66%	2.20%	3.50%

(Source: Table 4.21, Table 4.22 & Table 4.23)

Comparing three sampled banks, it can be concluded that the risk in return on investment on shares and debentures of HBL (3.50%) was highest in comparison to that of NABIL (0.66%) and SCBNL (2.20%). As the return on shares and debentures of NABIL (5.05%) was also highest, it can further be considered that NABIL is much efficient in mobilizing the funds in shares and debentures.

4.3 Ratio Analysis

Ratio analysis is the process of establishing the significant relationship between the variables of financial statement to provide a meaningful understanding of the performance and financial position of the firm. Thus, in this section, the major ratios that are related to the investment mechanism of commercial banks are calculated and analyzed.

4.3.1 Total Investment to Total Deposit Ratio

This ratio is used to measure the ability of banks to successfully mobilize the total deposits of investment. This ratio can be calculated by dividing total investment by total deposits.

Table 4.25

Total Investment to Total Deposit Ratio

Fiscal Year	**NABIL**	**SCBNL**	**HBL**

2006/07	38.32	54.99	39.35
2007/08	31.14	46.74	41.89
2008/09	28.99	56.41	25.12
2009/10	29.53	56.41	22.45
2010/11	26.32	45.42	21.43
Mean	**30.86**	**51.99**	**30.05**
S.D.	**4.04**	**4.88**	**8.75**
C.V.%	**13.09**	**9.38**	**29.13**

(Source: Appendix II)

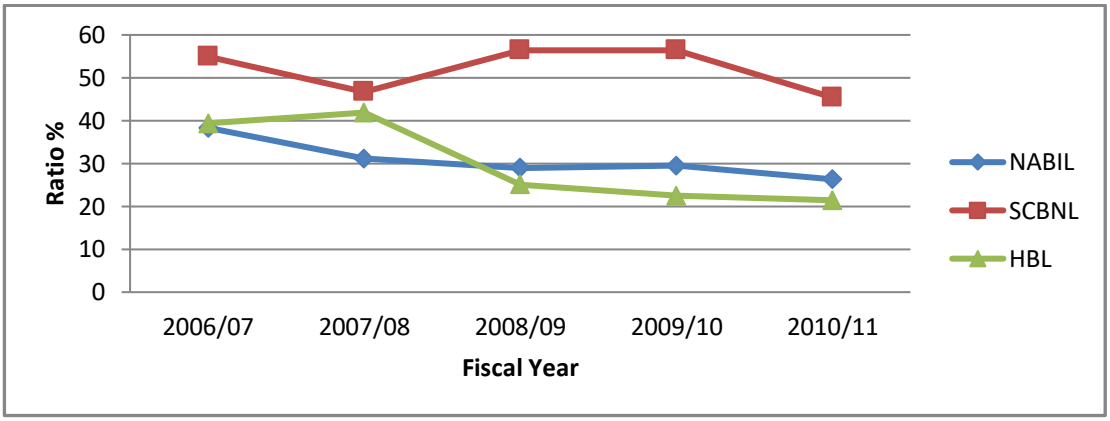
The table 4.25 represented the proportion of the mobilization of total deposit in total investment. The table showed that the trend of mobilizing total deposit in total investment of NABIL gradually decreased in most of the observed periods. NABIL utilized 38.32%, 31.14%, 28.99%, 29.53% and 26.32% of the total deposits in investment activities like government securities, shares and debentures, foreign securities and other in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The table showed that in average 30.86% of the total deposit of NABIL had been utilized for investment purpose. Also, the coefficient of variation in total investment to total deposit was 13.09%.

Similarly, the total investment to total deposit of SCBNL also fluctuated during the period. The table showed that SCBNL mobilized 54.99%, 46.74%, 56.41%, 56.41%, and 45.42% of the total deposit for investment purpose in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. In average, 51.99% of the total deposit had been utilized for investment. And the coefficient of variation in such ratio was 9.38%. Likewise, the total investment to total deposit of HBL fluctuated during the five consecutive years taken for research. The ratio was highest in the fiscal year 2007/08 (41.89%) and lowest in the fiscal year 2010/11 (21.43%). The coefficient of variation was 30.05% and the average ratio was 29.13%.

Comparing three sampled banks, it can be concluded that SCBNL mobilized highest portion of the total deposit in investment (i.e. 51.99%) than NABIL (i.e. 30.86%) and HBL (i.e. 30.05%). Moreover, on the basis of coefficient of variation on the ratio, it can be considered that SCBNL had more stable investment policy than NABIL and HBL, since the coefficient of variation of SCBNL (9.38%) was lowest than that of NABIL (13.09%) and HBL (29.13%).

Figure 4.10

Total Investment to Total Deposit Ratio



4.3.2 Investment in Government Securities to Total Investment

This ratio is very useful to know in which extent the commercial banks are successful in mobilizing their total investment in different types of government securities to maximize the income. This ratio is calculated by dividing investment on government securities by investment. A high ratio indicates the high efficiency of the firm in utilizing collected deposits to government securities and vice-versa.

Table 4.26

Investment in Gov. Securities to Total Investment

Fiscal Year	NABIL	SCBNL	HBL
2006/07	53.75	52.44	54.60
2007/08	46.75	58.53	56.01
2008/09	34.23	49.41	48.36
2009/10	57.95	42.99	52.88
2010/11	66.85	57.69	73.06

Mean	**51.91**	**52.21**	**56.98**
S.D.	**10.98**	**5.71**	**8.44**
C.V.%	**21.14**	**10.94**	**14.82**

(Source: Appendix II)

The table 4.26 measured the proportion of total investment mobilized in the government securities. The table showed that the ratio of NABIL fluctuated during the observed periods, and thus had ranged from 34.23% in the fiscal year 2008/09 to 66.85% in the fiscal year 2010/11. In average, the investment in government securities covered approximately half (51.91%) of the total investment. The coefficient of variation on such ratio was 21.14%.

Moreover, the ratio in SCBNL increased from 52.44% in the fiscal year 2006/07 to 58.53% in the fiscal year 2007/08, then decreased to 49.41% in the fiscal year 2008/09, decreased to 42.99% in the fiscal year 2009/10 and then finally increased to 57.69% in the fiscal year 2010/11. In average, SCBNL invested 52.21% of the total investment amount in government securities.

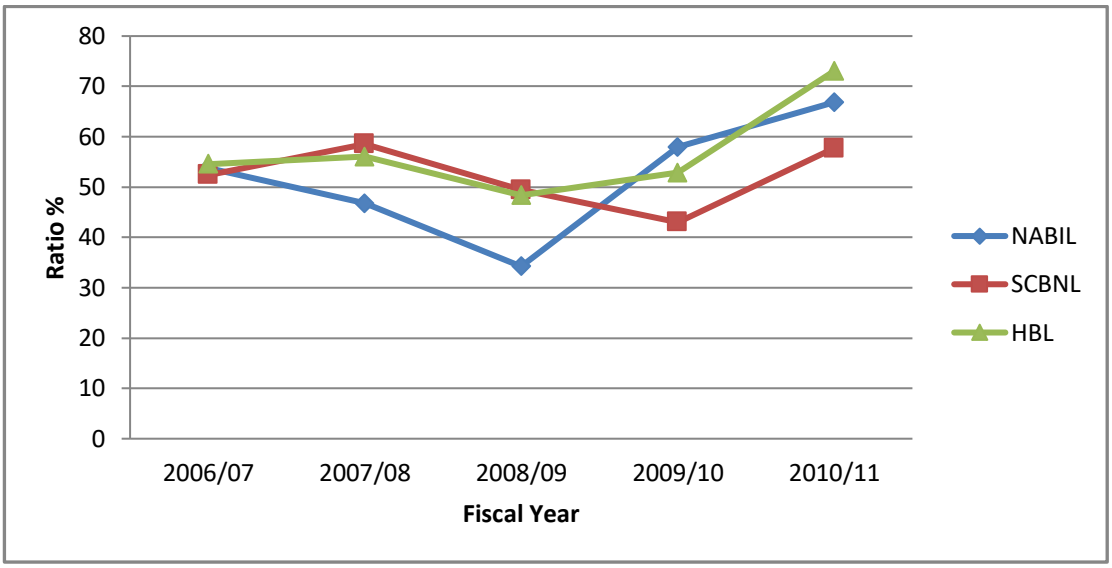
However, the investment in government securities to total investment of HBL followed fluctuating trend in the observed periods. Initially the ratio was 54.60% in the fiscal year 2006/07, which increased to 56.01% in the fiscal year 2007/08 then decreased to 48.36% in the fiscal year 2008/09, and then increased to 52.88% in the fiscal year 2009/10, and finally reached to 73.06% in the fiscal year 2010/11. It seemed that HBL followed aggressive policy to invest in government securities, which is risk free investment. In average, HBL invested 56.98% of the total investment in government securities.

Comparing the sampled banks, it can be concluded that HBL had the practice of investing highest proportion of total investment in government securities than other two banks. In contrast, the lowest coefficient variation of SCBNL (10.94%) than that of NABIL (21.14%) and HBL (14.82%) indicated that

SCBNL had more stable policy in investing government securities than other two sampled banks.

Figure 4.11

Investment in Gov. Securities to Total Investment



4.3.3 Investment in Shares & Debentures to Total Investment

The ratio between investment in shares and debentures to total investment reflects the extent on which the banks are successful to mobilize their total investment on purchase of shares and debentures of other companies.

Table 4.27

Investment in Shares & Debentures to Total Investment

Fiscal Year	NABIL	SCBNL	HBL
2006/07	3.21	0.33	0.62
2007/08	3.25	0.82	0.67
2008/09	3.28	0.57	1.08
2009/10	1.17	0.58	0.93
2010/11	1.47	0.68	1.01
Mean	**2.48**	**0.60**	**0.86**
S.D.	**0.95**	**0.16**	**0.18**
C.V.%	**38.35**	**26.99**	**21.28**

(Source: Appendix II)

The table 4.27 indicated that the investment in shares and debentures to total investment of NABIL fluctuated during the entire period. The ratio ranged from 1.17% in the fiscal year 2009/10 to 3.28% in the fiscal year 2008/09. Moreover, the average ratio was 2.48% only. Also, the coefficient of variation of 38.35% implied that NABIL had no stable policy in investing in shares and debentures.

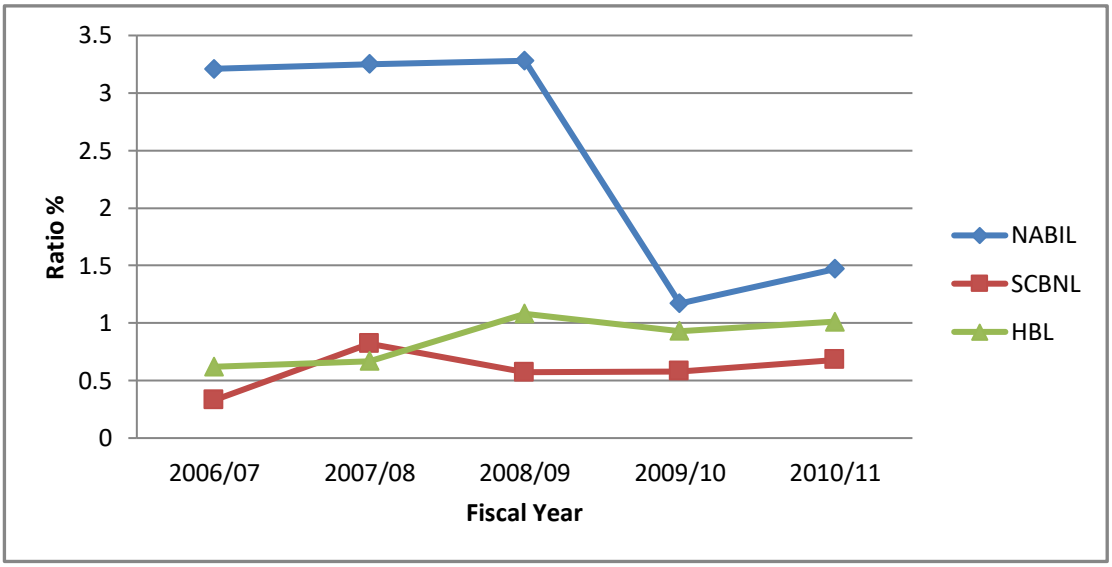
Similarly, the ratio in SCBNL found to be in oscillating trend during the observed periods. The ratio was 0.33% in the fiscal year 2006/07 and finally reached to 0.68% in the fiscal year 2010/11, however, the ratio was highest, 0.82%, in the fiscal year 2007/08, and 0.60% in average. The coefficient of variation of 26.99% indicated inconsistency in the ratio.

Similarly, the ratio in HBL was 0.62% in the fiscal year 2006/07, which increased to 0.67% in the fiscal year 2007/08, 1.08% in the fiscal year 2008/09, and then decreased to 0.93% in the fiscal year 2009/10, and finally increased to 1.01% in the fiscal year 2010/11. In average, 0.86% of the total investment was invested in shares and debentures and the coefficient of variation in such ratio was 21.28%.

Comparing three banks, it can be concluded that NABIL has the policy of investing highest portion of total investment in shares and debentures than SCBNL and HBL.

Figure 4.12

Investment in Shares & Debentures to Total Investment



4.3.4 Investment in Loans and Advances to Total Deposit

This ratio measures the bank's ability in disbursing the collected amount of deposit as loans and advances. Higher the ration indicates higher the chances of earning income in the form of dividend.

Table 4.28

Investment in Loans and Advances to Total Deposit

Fiscal Year	NABIL	SCBNL	HBL
2006/07	66.60	42.61	56.57
2007/08	66.94	46.12	61.23
2008/09	73.87	38.14	71.49
2009/10	69.53	45.35	74.39
2010/11	76.53	48.49	77.14
Mean	**70.70**	**44.14**	**68.16**
S.D.	**3.91**	**3.54**	**7.91**
C.V.%	**5.53**	**8.03**	**11.61**

(Source: Appendix II)

The table 4.28 highlighted the mobilization of total deposits in loans and advances. The table showed that ratio of investment in loans and advances to total deposit of NABIL bank was highest (i.e. 76.53%) in the fiscal year 2010/11 and lowest (66.60%) in the fiscal year 2006/07. In average, 70.70% of the total deposit had been utilized in disbursing loans and advances.

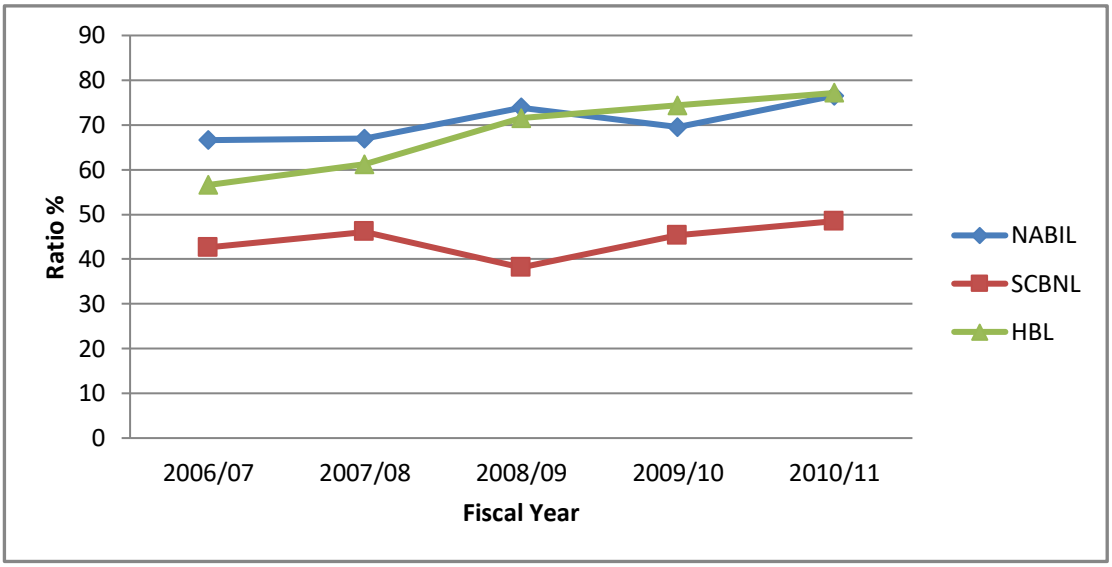
Similarly, the ratio in SCBNL ranged from 38.14% in the fiscal year 2008/09 to 48.49% in the fiscal year 2010/11. In average, SCBNL mobilized 44.14% of the total deposit in loans and advances. The coefficient of variation on such ratio was 8.03% which indicated consistency in the ratio.

Likewise, the total investment in loans and advances to total deposit of HBL has been found to be in increasing trend. The ratio has ranged from 56.57% in the fiscal year 2006/07 to 77.14% in the fiscal year 2010/11. In average, HBL used 68.16% of the total deposit in loans and advances, and the variation in the ratio was 11.61%.

Comparing three banks, it can be considered that NABIL followed more aggressive policy in disbursing loans and advances from total deposits than SCBNL and HBL.

Figure 4.13

Investment in Loans and Advances to Total Deposit



4.4 Portfolio Return on Investment

The expected return on a portfolio (R_p) is simply the weighted average of the expected return on the individual assets in the portfolio with the weights being equal to the proportion of investment in each asset. Commercial Banks invests their funds in government securities, loan and advances and shares and debentures.

Table 4.29

Portfolio Return on Investment of NABIL

Assets	Return (R)	Amount	Weight (W)	W x R
Govt. Sec.	4.88	5969.62	0.18	0.88
Loans & Adv.	5.91	26960.74	0.81	4.80
Shares & Deb.	5.05	263.49	0.01	0.04
		Portfolio Return (R_p)		**5.72**

(Source: Appendix I)

The above table showed that the expected rate of return on portfolio of NABIL was 5.72%, which was greater than the average rate of return on government securities, 5.26% > 4.88%, and shares & debentures, 5.26% > 5.05%, however lower than the average rate of return on loans & advances, 5.26% < 5.91%,

Table 4.30

Portfolio Return on Investment of SCBNL

Assets	Return (R)	Amount	Weight (W)	W x R
Govt. Sec.	4.76	8746.62	0.375	1.786
Loans & Adv.	7.42	14457.04	0.620	4.602
Shares & Deb.	3.16	101.65	0.004	0.014
		Portfolio Return (R_p)		**6.40**

(Source: Appendix I)

The above table revealed that the expected rate of return on portfolio of SCBNL was 6.40%, which was more than the mean rate of return on government securities, 6.40% > 4.76%, and shares and debentures, 6.40% > 3.16%. However, the portfolio return was lower than the mean rate of return on loans and advances, 6.40% < 7.42%.

Table 4.31

Portfolio Return on Investment of HBL

Assets	Return (R)	Amount	Weight (W)	W x R
Govt. Sec.	5.00	5802.31	0.193	0.97
Loans & Adv.	6.62	24167.19	0.804	5.32
Shares & Deb.	5.00	84.91	0.003	0.01
		Portfolio Return (R_p)		**6.30**

(Source: Appendix I)

The above table depicted that the portfolio return on investment of HBL was 6.30%, which was greater than the average return on government securities, 6.30% > 5.00%, and shares and debentures, 6.30% > 5.00%. Moreover, the portfolio return was lower than the mean rate of return on loans and advances, i.e. 6.30% < 6.62%.

Table 4.32

Comparison on Portfolio Return

Portfolio Return	NABIL	SCBNL	HBL
R_p	5.72%	6.40%	6.30%

(Source: Table 4.29, Table 4.30 & Table 4.31)

Comparing the sampled banks on the basis of portfolio return, it can be concluded that SCBNL was more efficient in managing its investment

portfolio, as the portfolio return of SCBNL (6.40%) was higher than that of NABIL (5.72%) and HBL (6.30%).

4.5 Portfolio Risk on Investment

Expected risk on a portfolio is a function of the proportions invested in the components, the risk of the components and correlation of returns on the component securities. It is measured by standard deviation. However, the standard deviation of portfolio is not simply the weighted average of standard deviation of individual securities. The association of movement of returns of two securities affects the portfolio risk. The degree to which the assets return move together is measured by the covariance. Hence, by combining the measures of individual assets risk, relative asset weights and the co-movement of assets returns, the risk of the portfolio can be estimated.

Table 4.33

Portfolio Risk on Investment

Banks	$w^2_g б^2_g$ c_1	$w^2_l б^2_l$ c_2	$w^2_s б^2_s$ c_3	$2 w_g w_l r_{gl} б_g б_l$ c_4	$2 w_l w_s r_{ls} б_l б_s$ c_5	$2 w_g w_s r_{gs} б_g б_s$ c_6	$б^2_p$ $c_1+c_2+c_3+c_4+c_5+c_6$
NABIL	0.079	0.841	0.00003	0.1411	0.0034	0.0027	1.0668
					Portfolio risk (бp)		**1.03**
SCBNL	0.088	0.582	.000092	0.3890	0.0136	0.0046	1.0770
					Portfolio risk (бp)		**1.04**
HBL	0.167	0.96	0.0001	0.2326	0.0178	0.0032	1.3805
					Portfolio risk (бp)		**1.17**

(Source: Appendix I)

The table 4.33 measured the portfolio risk of the three sampled banks. The table depicts that the bank earns highest return by not only carrying highest risk, since as per the portfolio analysis, HBL poses highest portfolio risk, however, SCBNL earned highest portfolio return. Thus, to yield highest return the bank should efficiently mobilize its resources along with taking risk. Although the portfolio return of SCBNL (6.40%) was greater than that of HBL (6.30%), the portfolio risk of SCBNL (1.04%) was lower than that of HBL (1.17%). This implied that the SCBNL was more efficient than HBL in achieving the higher return by taking the low risk and thus more efficient than

HBL in managing the portfolio investment. Finally, HBL can be considered as more risk taker than SCBNL and NABIL do.

4.6 Regression Analysis

The regression lines helps to predict by how much the dependent variable, Y changes with per unit change in the independent variable, X. In this study the regression lines of investment on deposit has been analyzed.

4.6.1 Regression Line of Investment on Total Deposit

Let the investment, dependent variable (Y), be the function of the total deposit, independent variable (X). Then the regression equation of total investment on total deposit is given by;

Table 4.34

Regression Analysis of Total Investment on Total Deposit

Banks	no. of observation (n)	Constant (a)	regression coefficient (b)	T value
NABIL	5	4387.88	0.18	6.32
SCBNL	5	1539.22	0.47	2.38
HBL	5	24200.65	-0.40	-2.19

(Source: Appendix III)

The table 4.34 showed that the beta coefficient of NABIL and SCBNL of the regression line of total investment on total deposit is positive, while such beta coefficient is negative in HBL. The beta coefficient of NABIL, SCBNL, and HBL of the regression line of investment on total deposit is 0.18, 0.47 and -0.40 respectively, which indicates that Rs. 1 increment in deposit collection leads to Rs. 0.18 increment in total investment of NABIL, Rs. 0.47 increment in total investment of SCBNL, and Rs. 0.40 decrement in total investment of HBL.

Similarly, the t-statistics shows that the calculated t-value of NABIL (6.32) is greater than the tabulated t-value (2.78) at 5% level of significance and 4 degree of freedom, which implies that the relationship between deposit and

investment of NABIL is statistically significant and hence investment increases with the increase in total deposit and vice versa in these banks. However, the t-value of HBL (-1.33) and SCBNL (2.38) is lower than the tabulated t-value, thus the relationship of the two tested variables is insignificant in HBL and SCBNL.

Comparing three banks, it can be concluded that the total deposit could have greater impact in total investment of SCBNL than that in other sampled banks, if there existed statistically significant relationship between these two variables, because the per rupee increment in deposit leads to greatest rupee increase in investment in SCBNL (Rs. 0.47) than in NABIL (Rs. 0.18) and in HBL (-Rs. 0.40). Thus, the deposit and investment of only NABIL has statistically significant relationship, and thus deposit has significant role to influence on the decision of investment in this bank.

4.7 Major Findings of the Study

From the analysis of the secondary data, the following major findings have been derived:

- In average, NABIL bank received 4.88% of the total investment in government securities as return, while the return for that on SCBNL was 4.76% and that on HBL was 5.00%. Hence, HBL remained more success in generating income from government securities.
- However, the investment amount in government securities of SCBNL (Rs. 8746.62 millions) was higher than that of NABIL (Rs. 5969.62 millions) and HBL (Rs. 5802.31 millions). Also, the interest amount on government securities of SCBNL (Rs. 419.33 millions) was highest than that of NABIL (Rs. 290.53 millions) and HBL (Rs. 270.59 millions).
- NABIL disbursed highest amount of loans & advances, i.e. Rs. 26960.74 millions, than HBL (Rs. 24167.19 millions) and SCBNL (Rs. 14457.04 millions). Moreover, NABIL earned highest amount of interest, i.e. Rs. 1673.46 millions, than HBL (Rs. 1657.08 millions) and

SCBNL (Rs. 1100.46 millions). Surprisingly, the return rate of SCBNL (7.42%) was higher than that of NABIL (5.91%) and HBL (6.61%).

- Likewise, the investment on shares and debentures of NABIL was highest, i.e. Rs. 263.49 millions, than that of SCBNL (Rs. 101.65 millions) and HBL (Rs. 84.91 millions), as a result the income in the form of dividend and interest of NABIL (Rs. 13.34 millions) was higher than that of SCBNL (Rs. 3.60 millions) and HBL (Rs. 4.28 millions). Also, the return percentage of NABIL (5.05%) was higher in comparison to that of SCBNL (3.16%) and HBL (5.00%).
- The risk on government securities of HBL (2.12%) was highest than that of SCBNL (0.79%) and NABIL (1.56%). However, the investment in loans and advances was much risky in SCBNL (1.23%) compared to that of NABIL (1.13%) and HBL (1.22%). Moreover, the investment in shares and debentures of HBL is considered much risky, i.e. 3.50%, than that of SCBNL (2.20%) and NABIL (0.66%).
- In addition, SCBNL has highly diverted its deposit in investment like government securities, shares and debentures than other two banks, since the investment to total deposit of SCBNL (51.99%) was higher than that of NABIL (30.86%) and HBL (30.05%).
- The investment in government securities covered 51.91%, 52.21% and 56.98% of the total investment of NABIL, SCBNL and HBL respectively. The ratio is much more inconsistent in SCBNL (C.V. = 10.94%) than in HBL (C.V. = 14.82%) and in NABIL (C.V. = 21.14%).
- Also, the investment in shares and debentures covered 2.48%, 0.60% and 0.86% of the total investment in NABIL, SCBNL and HBL respectively. The ratio is much more consistent in HBL (C.V. = 21.28%) than in NABIL (C.V. = 38.35%) and in SCBNL (C.V. = 26.99%).
- NABIL, SCBNL and HBL mobilized 70.70%, 44.14% and 68.16% of the total deposit collected in loans and advances respectively. However, the policy of disbursing loans and advances to total deposit of NABIL is much more stable than that of HBL and SCBNL.

- On the basis of return on investment portfolio, it can be considered that SCBNL's investment portfolio is much fruitful than others, as the return on investment portfolio of SCBNL (6.40%) was higher than that of NABIL (5.72%) and HBL (6.30%). However, the investment of HBL carries highest investment portfolio risk (1.17%) than SCBNL (1.04%) and NABIL (1.03%).
- The regression analysis showed that total investment of NABIL and SCBNL increases and HBL decreases with the increase in deposit. The total investment of NABIL increases by Rs. 0.18 and of SCBNL increases by Rs. 047, while that of HBL decreases by Rs. 0.40 with per rupee increase in deposit collection.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Investment policy plays a key role on the development of countries utmost investment. The political insanity, government rules, tax policy treaty with neighbor country, social and economic condition of the country affect investment policy of bank. To keep up the stability with the foreign policy results the improvement of investment policy.

Designing good investment policy helps to the improvement of investment policy in the country. As political influence, intervention economic scenario and social, economic scenario of the country is dramatically problem for the detection of designing investment policy of bank.

Government policy affects the investment policy of the company, bank and institution. Government intervention in investment policy is custom tariff initiated by the government policy, VAT refund policy and tax holding policy including duty taxes i.e. export and import directly influences investment policy.

Analysis of investment to avoid the risk, risk related investment influence the financial and economic condition of investment. Technical and marketing analyses too reflect the risk measurement. As the investor, the adequate knowledge of investment policy is required. Major problem for applying the investment policies are integrator of the consumer, changing policy of the country, industrial policy and neighbor country's policy.

To examine the investment policy practiced in the commercial banks in Nepal, two banks namely, Nabil Bank Limited, Standard Chartered Bank Nepal Limited and Bank of Kathmandu Limited, have been chosen as sample. The

main objective of the study is to examine the investment policy of the selected banks. The study uses the both financial tools and statistical tools to achieve the objective. Further, the study uses only the secondary data, as it reflects the truly investment position of the banks.

5.2 Conclusion

From the foregone analysis of the investment pattern of the bank, it can be inferred that the loan and advances is the most lucrative sector of investment for the bank. This deductive reasoning has also been evidenced by the huge amount of granting loan and advances rather than in other investment sectors. Further, there is no ambiguity that the bank exists primarily for granting loan and advances to the needy, and therefore acts as the facilitator for flowing the money to the scarce area. To sustain in the long run, the bank needs to make profit, and as the loan and advances is the prime use of the collected deposit, the bank has to pay enough attention for achieving the greater return from loan and advanced. This activity of the bank has thus might have caused the above result. Next to the investment in loan and advances, the investment in shares and debentures, it has been ascertained, has been most profitable to the observed banks, except in SCBNL where the investment in government securities yielded higher than the investment in shares and debentures did. Although, the investment in shares and debentures turned least return in NABIL and HBL, its contribution in increasing the profit of the bank is significant. It can be said that comparatively HBL is much efficient in generating return from government securities, SCBNL is much efficient in loan and advances, and NABIL is much efficient in shares and debentures. Furthermore, the highest risk in government securities of HBL and in loan and advances of SCBNL substantiated the widely accepted principle, the higher the risk the higher will be the return. However, the least risk in shares and debentures of NABIL, despite the highest return in this bank, indicated that NABIL is most efficient in generating high profit by taking less risk.

The ratio analysis aids to conclude that SCBNL is much interested in making high proportion of the short term investment to total deposit, however, the other banks, NABIL and HBL, have paid more concern to the investment in loan and advances. Moreover, it has been revealed that the government securities have became the most enticing sector, might be due to least risk in this investment, to the observing banks for making the short term investment. The investment in shares and debentures by the observed banks reflect only the paltry sum of the total short term investment. The portfolio analysis helps to admit that the portfolio investment of SCBNL is much better than that of other banks, as the portfolio return of this bank is highest and the portfolio risk is lower than that of HBL, and approximately near to that of NABIL. Between HBL and NABIL, HBL is better in terms of portfolio return, however, if portfolio risk is considered, NABIL is better than HBL. Thus, ultimately it can be said that the HBL is much aggressive, also the risk taker, than NABIL, and NABIL on the other side is risk averter. Eventually it can be concluded that SCBNL has the best investment practice than other banks have.

5.3 Recommendations

Based on the analysis of data, findings and conclusions there of the following recommendations are offered to improve the present fund mobilization and investment of the commercial banks under study.

- All selected sample banks seemed invested very low portion of its total short term investment on shares and debentures of other companies. So, it is suggested to all selected sample banks to give priority to investment on shares and debentures.
- It is clear that given sampled banks have not effectively utilized portfolio management concept. The compositions of investment of these banks are highly dominated by loan and advances. It does not generate adequate return for the banks. Therefore, in order to increase the return on investment they should compile an optimum portfolio of different securities. The study shows that the sample banks are not successful to invest their funds on various assets.

- Now a days there are various problems in resource mobilization of commercial banks. The performances of sample commercial banks do not seem to be satisfactory in terms of utilizing its resources efficiently in productive sectors. Therefore, all sample commercial banks need to identify the new investment sectors and make efficient investment in various sectors. In this condition different retail banking such as education loan, housing loan, automobile loan etc. would be profitable sector for investment of commercial banks.
- The total investment fund, comparing it to total deposit of HBL is least. Therefore, it needs to identify the new investment sectors and make efficient investment in various sectors.
- Each bank should identify the much risky assets of portfolio and thus try to reduce the investment amount on that sector and increase the investment amount in other secured assets.
- The investment in shares and debentures of SCBNL is very low and thus yield lower return, hence to compete with other banks, it seems necessary that SCBNL increase the investment amount in buying shares and debentures of profitable corporate.
- HBL has invested lowest amount in government securities than SCBNL and NABIL but received highest return than other two banks. So, it would be worthwhile if HBL increases its investment amount in government securities and thus enjoy much more return.
- SCBNL enjoyed higher return even investing lower amount in loans and advances than HBL & NABIL did. So, it would be worthwhile if SCBNL accentuates its loans and advances amount.
- As the return on investment is not always clear, so the banks need to prepare the strategy so as to face the ongoing challenges in investment. A balanced investment strategy is generally required in the process of investment, which possesses long time period and some risk tolerance.
- An investment strategy in mutual funds is probably the best bet for a

profitable investment. Mutual fund is a pool of money supplied by different investors and in turn used by the mutual fund company to invest in various assets such as stocks and bonds. However, a detailed research has to be conducted by the bank for choosing the mutual fund companies and only those should be considered which have a professional investment manager.

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APPENDIX - I

A) Calculation of mean return, risk & correlation Coefficient of NABIL

Year	R_g	R_l	R_s	$R_G = R_g - \bar{R}_g$	$R_L = R_l - \bar{R}_l$	$R_S = R_s - \bar{R}_s$	R^2_G	R^2_L	R^2_S	$R_G \times R_L$	$R_L \times R_S$	$R_G \times R_S$
2006/07	2.75	5.08	3.89	-2.13	-0.83	-1.16	4.55	0.6922	1.35	1.775	0.968	2.484
2007/08	4.27	4.63	5.15	-0.61	-1.28	0.10	0.38	1.644	0.01	0.787	-0.123	-0.059
2008/09	7.26	5.38	5.71	2.38	-0.53	0.66	5.65	0.28	0.43	-1.264	-0.349	1.559
2009/10	4.19	6.88	4.89	-0.69	0.97	-0.16	0.48	0.94	0.03	-0.672	-0.159	0.114
2010/11	5.95	7.59	5.63	1.07	1.68	0.58	1.14	2.82	0.33	1.789	0.967	0.614
Total	**24.42**	**29.56**	**25.27**				**12.19**	**6.37**	**2.15**	**2.416**	**1.30**	**4.712**

i) Calculation of Mean Return

For Government Securities

$\bar{R}_g = \sum R_g/5 = 4.88$

For Loan and Advances

$\bar{R}_l = \sum R_l/5 = 5.91$

For Shares and Debentures

$\bar{R}_s = \sum R_s/5 = 5.05$

ii) Calculation of Risk (б) on Return

For Government Securities

$$б_g = \frac{\sum R2G}{N} = \frac{12.19}{5} = 1.56$$

For Loans and Advances

$$б_l = \frac{\sum R2L}{N} = \frac{6.37}{5} = 1.13$$

For Shares and Debentures

$$б_s = \frac{\sum R2S}{N} = \frac{2.15}{5} = 0.66$$

iii) Calculation of Correlation Coefficient between Return on,

Government Securities & Loans & Adv.

$$r_{gl} = \frac{\sum RG \times RL}{\sum R2G \sum R2L} = \frac{2.416}{8.815} = 0.27$$

Loans & Adv. and Shares & Deb.

$$r_{ls} = \frac{\sum RL \times RS}{\sum R2L \sum R2S} = \frac{1.304}{3.7039} = 0.35$$

Government Securities & Shares & Deb.

$$r_{gs} = \frac{\sum RG \times RS}{} = 4.712$$

∑R2G ∑R2S 5.124

0.92

B) Calculation of mean return, risk & correlation Coefficient of SCBNL

Year	R_g	R_l	R_s	$R_G =$ $R_g - \bar{R}_g$	$R_L =$ $R_l - \bar{R}_l$	$R_S =$ $R_s - \bar{R}_s$	R^2_G	R^2_L	R^2_S	$R_G \times R_L$	$R_L \times R_S$	$R_G \times R_S$
2006/07	4.59	6.33	0.56	-0.17	-1.09	-2.60	0.03	1.1837	6.76	0.183	2.829	0.437
2007/08	3.93	5.93	1.14	-0.83	-1.49	-2.02	0.69	2.214	4.08	1.232	3.006	1.673
2008/09	4.06	7.51	2.71	-0.70	0.09	-0.45	0.49	0.01	0.20	-0.064	-0.041	0.314
2009/10	5.11	7.93	5.36	0.35	0.51	2.20	0.12	0.26	4.84	0.180	1.126	0.774
2010/11	6.1	9.39	6.03	1.34	1.97	2.87	1.80	3.89	8.24	2.646	5.660	3.852
Total	23.79	37.09	15.8				3.13	7.56	24.12	4.177	12.58	7.049

i) Calculation of Mean Return

For Government Securities

$R_g = \sum R_g/5 = 4.76$

For Loan and Advances

$R_l = \sum R_l/5 = 7.42$

For Shares and Debentures

$R_s = \sum R_s/5 = 3.16$

ii) Calculation of Risk (б) on Return

For Government Securities

For Loans and Advances

$б_g = \sqrt{\frac{\sum R^2_G}{N}} = \sqrt{\frac{3.13}{5}} = 0.79$

$б_l = \sqrt{\frac{\sum R^2_L}{N}} = \sqrt{\frac{7.56}{5}} = 1.23$

For Shares and Debentures

$б_s = \sqrt{\frac{\sum R^2_S}{N}} = \sqrt{\frac{24.12}{5}} = 2.20$

iii) Calculation of Correlation Coefficient between Return on,

Government Securities & Loans & Adv.

$$r_{gl} = \frac{\sum R_G \times R_L}{\sqrt{\sum R^2_G \sum R^2_L}} = \frac{4.177}{\sqrt{4.86}} = 0.86$$

Loans & Adv. and Shares & Deb.

$$r_{ls} = \frac{\sum R_L \times R_S}{\sqrt{\sum R^2_L \sum R^2_S}} = \frac{12.579}{\sqrt{13.501}} = 0.93$$

Government Securities & Shares & Deb.

$$r_{gs} = \frac{\sum R_G \times R_S}{\sqrt{\sum R^2_G \sum R^2_S}} = \frac{7.049}{\sqrt{8.683}} = 0.81$$