CHAPTER- I
INTRODUCTION

1.1 Background of the study

Portfolio is collection of investment securities. Portfolio theory deals with the selection of optimal portfolio; that is, portfolio that provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return. A portfolio is usually defined as a combination of asset.

"A portfolio simply represents the practice among the investor of having their funds in more than one asset. The combination of investment assets is called a portfolio." (Weston and Brigham,1992)

"Portfolio means a collection or group of assets."(Gitman,1990)

Investment portfolio refers to an investment that combines several assets. It is a collection of securities. "Portfolio means the lists of holdings in securities owned by an investor or institution" (Oxford Dictionary,1997). Portfolio is a collection of investment securities for example, if you owned some of Nabil Bank stock, some Alliance Insurance co. ltd. stock, some Soaltee Hotel ltd. stock, some United finance ltd. stock, some Salt trading ltd. stock, some Nepal liver ltd. stock, some Bottlers Nepal ltd. stock you would be holding seven stock portfolios. Portfolio analysis considers the determination of future risk and return in holding various blends of individual securities. Portfolio expected return is a weighted average of the expected return of the individual securities. Investment portfolio is one which the income or profit of the banks depend upon directly. Hence, the banks should never invest its fund in those securities; difference may cause a great loss. It must not invest its funds into speculative businessman who may be bankrupt at once and who may earn millions in a minute. The bank should accept that type of securities which are commercial, durable, marketable stable, transferable and high market prices. A commercial bank can maximize its volume of wealth through maximization of return on their investments and lending. So they must invest their funds where they gain maximum profit. The profit of Commercial banks mainly depends on the interest rate, volume, tenure of loan and nature of investment in different securities. While investing excess funds in different securities or at the lending period, the banks should keep in mind that the people deposit money at the bank in different account with

confidence that the bank will repay their money on demand. Similarly a bank should not lay all its eggs on the same basket i.e. to minimize risk; a bank must diversify its investment on different sectors. Diversification of loan or investment helps to sustain loss according to the law of average because if securities of a company deprived, there may be appreciation in the securities of other companies.

The commercial banks has played a catalytic role in the economic growth. Its investments range from small scale cottage industries to all types of social and commercial loans and large industries. Generally the investment of the commercial banks include the investment on Government securities, like treasury bills, development bonds, national saving bonds, foreign government securities, shares on government owned companies and non-government companies and investment on debentures and investment on other investments, similarly the commercial banks used their funds as loan and advances. The guidelines given by Nepal Rastra Bank play a significant role in the composition of bank portfolio. Since the constraints framework provided by the central bank is for economic enhancement, it can be hypothesized that the composition of bank portfolio has a considerable impact on national economy. Portfolio management activities of Nepalese banks are in developing stage, however, on the other hand most of the joint venture banks are not doing such activities so far.

The concept of banking system was introduced in Nepal with the establishment of Nepal Bank Ltd. in 1937. The financial scenario has changed with introduction of joint venture banks in 1984. The evolution of the organized financial system in Nepal has a more recent history than in other countries of the world. Banking history of Nepal is not more than six decade. In Nepalese context, the history of development of modern bank started from the establishment of "Nepal Bank Ltd." in 1937AD. With put forth effort of government and public, as a commercial bank with 10 million authorized capital. Then the government felt the requirement of a central bank and established "Nepal Rastra Bank" in 1956 AD. As a central bank under NRB act 1956 AD. It played leading role in development of banking in Nepal and also controlled the monetary culture in the country. Likewise, rising of banking function gets popular and more complicated, thus NRB suggested for the establishment of another commercial bank and in 1966 AD. "Rastriya Banijya Bank" was established as a fully government owned commercial bank, now its branches are diversified all over the country. As the

country moved towards economic liberalization in 1980 A.D., foreign banks were invited to operate in Nepal. The financial scenario has changed with the introduction of JVB's in 1984. The number of commercial banks has been increasing. Since then, various financial institution like, JVB's, Domestic commercial banks, Development banks, Finance companies, Co-operative banks Credit Guarantee Corporation, Employee Provident Fund, National Insurance Corporation, NEPAL Stock Exchange have come into existence to cater the financial needs of the country thereby assisting financial development of the country.

In 1990 A.D. after reestablished of democracy, the government took the liberal policy in banking sector. As an open policy of government to get permission to invest in banking sector from private and foreign investor under commercial bank act 1975AD, different private banks are getting permission to establish with the joint venture of other countries. The development of CB's in Nepal is categorized in three phases on the basis of financial institutions policies adopted by the country from time to time.

After the announcement of liberal and free market economic based policy, Nepalese banks and financial sectors are having greater network and access to national and international markets. They have to go with their portfolio management very seriously and superiority. Most of other commercial banks are providing new schemes like Insurance to depositor, which is an extra bonus to encourage them to deposit their surplus in such banks. Credit card system is other attractive feature of commercial banks i.e. NABIL credit card, credit card of NSBI has launched in market for their clients. EBL introduced cumulative deposit scheme (CDS) and facilities for Nepalese living in gulf countries for transfer of their savings to their home in Nepal by entering into drawing arrangements with exchange houses in UAE, Bahrain and Kuwait. And provided housing, vehicle and education loan to people, that means invest in other areas. These days due to keen competition in the market the Banks are launching innovative and dynamic products to the customers. The concept of Universal Banking is also started by many of the existing and newly open Banks in the country.

No doubt, if commercial banks and financial institutions has to gain prosperity without delay, they should immediately start to improve customer service quality and flexibility at high standards to reflect tremendous opportunities in the markets for their customers benefits like managing their risk, giving them the advantage of global

strength, insights and philosophy because this can make the customer take full confidence to expands their transaction further more with best approach and feel secured for each investment made to earn superior returns over time. Therefore commercial banks should be aware and at every moment while providing service to their customers and should have better judgment on the quality of service whether they could satisfy their customers up to their expectation and have been able to attract others as many to meet the objectives or not as a result of the quality in service delivered. Actually for commercial banks the customers act as the soul which helps in correcting the problems of service providers with which the providers can identify the defects of the gaps to minimize them in time through strong and intensive analysis of their service market research team.

1.2 Statement of the problems

With the arrival of liberalization policy by the Government, the banking sector has been growing dramatically and operating with unhealthy competition. However, due to political instability, government couldn't be able to pay sufficient attention in this sector. Regulation, supervision, and monitoring by government have been weakened in banking sector as like other sectors. Commercial Banks in Nepal have been facing various challenges and problems especially in lending and portfolio management.

The directives and guidelines provided by Nepal Rastra Bank (NRB), Central Bank of Nepal, is the major policy statement for Nepalese Commercial Banks. A long term and published policy about their operation is not found in many banks. In case of selected sample banks, Investment Policy announced through Credit Strategy 2061, Credit Policy Guidelines 2061, Credit and Trade Finance Manual 2003, Investment Policy and Assets and Liability Management Guidelines 2008 and many such announced in annual general meetings (AGMs) are the major investment guidelines.

The portfolio performance of many Nepalese banks is not satisfactory. Sample banks are not also exception from that. Thus, this study is mainly concentrated on the following specific problems of selected commercial banks:
  i.   What is the position of investment operation of SCB,NIBL & EBL bank?
  ii. What is the risk and return position of investment?
  iii. What is the financial ratios position related to portfolio management?

1.3 Purpose of the study

The main objective of the present thesis is to identify the current situation of investment portfolio of commercial banks in Nepal. The specific objectives are as follows.

i. To analyze the investment operation of SCB,NIBL & EBL bank.

ii. To measure the risk and return of investment of SCB,NIBL &EBL banks.

iii. To analyze the financial ratio related to portfolio management of SCB, NIBL & EBL bank.

1.4 Significance of the study

The study examine and evaluate the portfolio management of investment of the Nepalese commercial banks. This study has tried to evaluate the portfolio investment thoroughly with applicable implications. Hence, the study may significant in the following ways:

i. This study mainly focused investment and portfolio management of Nepalese commercial banks. Definitely, the study will provide a useful feedback to the policy makers of the bank and also becomes a useful reference for other Commercial Banks of Nepal and the Central Bank (NRB) for the formulation of appropriate strategies.

ii. This study evaluates the Investment Policy of selected commercial banks and finds its loopholes and significantly contributes to make the policy sound. Hence the study is fruitful to the loan managers of the banks to formulate policy of loan.

iii. Portfolio of a bank is the result of investment policy. In this thesis, portfolio behavior of the bank has been analyzed and its portfolio performance has been evaluated. This will be beneficial to all the bankers and policy makers to evaluate their own portfolio.

1.5 Limitations of the study

This study is based on the fundamental analysis of Investment Portfolio pattern of commercial bank of the Nepal. The limitation of the study is as follows:

i. The study only concerned with investment portfolio of sampled commercial banks.

ii. The study cannot address the all aspects of portfolio and investment management, it is based on limited variables of portfolio.

iii. Since the study is fully based on secondary sources of data, the accuracy of the research is based on published sources.

iv. The results is based on only eight years data. The data observed in the study are only from 2013/14 to 2017/18.

v. The study is focused on Nepal Investment Bank Limited, Everest Bank Limited, Standard Chartered Bank Nepal Limited only. Hence, the result may not be similar to other banks.

vi. The study only concerned with risk and return, covariance, correlation and some ratio related with bank performance.

1.6 Chapter plan

In preliminary part, cover page, recommendation letter, viva-voce sheet, declaration, acknowledgement, table of contents, list of tables, list of figures and list of abbreviations of the research. The whole study has been organized into five main chapters.

Chapter I: Introduction: The first chapter deals with introduction, which includes general background, statement of the problem, purpose of the study, significance of the study and limitations of the study.

Chapter II: Literature Review: The second chapter is mainly focused with literature review that includes a discussion on the conceptual framework on investment analysis and review of major-studies relating with portfolio management.

Chapter III: Research Methodology: The third chapter describes the research methodology used to conduct the present research. It deals with research design, sources of data, data processing procedures, population and sample, period of the

study, method of analysis, financial and statistical tools and limitation of the methodology.

Chapter IV: Results: The fourth chapter deals with data presentation and analysis, which includes the presentation and analysis of the data and major findings of the study.

Chapter V: Conclusions: Fifth chapter includes the major findings and conclusion of the study which deals about the main theme of study and portfolio analysis and Investment Policy of selected commercial banks with recommendation for improvement of Investment Policy and efficient management of investment portfolio.

CHAPTER II
LITERATURE REVIEW

Review of literature is an integral mandatory process in research works. It is a crucial part of all dissertations. In other words it's just like fact are finding based on sound theoretical framework oriented towards discovery of relationship guided by experience, resonating and empirical investigation. It helps to find out already discovered things. Review of relevant literature implies putting new spectacle in old eyes to think in new way by posting the problem with new data and information to see that what results are derived. The primary purpose of literature is to learn and it helps researcher to find out what research studies have been conducted in one's chosen field of study, and what remains to be done. For review study, the researcher uses different books and journal, reviews and abstracts, indexes, reports, and dissertation or research studies published by various institutions, encyclopedia etc.

2.1 Conceptual review

Review of supportive text provides the fundamental theoretical framework and foundation to the present study. For this various books, research paper, articles etc. dealing with theoretical aspects of investment and portfolio analysis are taken into consideration.

2.1.1 Investment

The term "investment" can be used to refer to any mechanism used for the purpose of generating future income. In the financial sense, this includes the purchase of bonds, stocks or real estate property. Additionally, the constructed building or other facility used to produce goods can be seen as an investment. The production of goods required to produce other goods may also be seen as investing.

Taking an action in the hopes of raising future revenue can also be an investment. Choosing to pursue additional education can be considered an investment, as the goal is to increase knowledge and improve skills in the hopes of producing more income.

An investment is an asset or item that is purchased with the hope that it will generate income or will appreciate in the future. In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create

wealth. In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or will be sold at a higher price for a profit.

"Investment is any vehicle into which funds can be placed with the expectation that will preserve or increase in value and generated positive returns" (Gitman and Joehnk,1990).

"Investment may be defined as the purchase by an individual or institutional investor of a financial or real asset that produces a return proportional to the risk assumed over some future investment period" (Amling,1994).

Shrestha (2002) write investment as utilization of saving for something that is expected to produce profit or benefits. Investment is employment of funds with the aim of achieving addition income or growth in value. It involves the commitment of resources that have been saved or put away from current consumption, in the hope that some benefits will acquire in the future. Investment generally involves real assets and financial assets. Real assets investment involves some kinds of tangible assets such as building, land, machinery; factory etc. and financial assets investment are pieces of paper representing an indirect claim to real assets held by someone else. Real assets are generally less liquid than financial assets.

"Investment brings forth vision of profit, risk, speculation and wealth. For the uninformed, investing may result in disaster. In general sense; investment means to pay out money to get more. But in the broadest sense, investment means the sacrifice of current money for future more money. 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 Baily, 2003).

"Investment is 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 uncertainty involved in the future flow of the funds" (Frank and Reilly,2004).

2.1.2 Portfolio analysis

"Portfolio analysis is to develop a portfolio that has the maximum return at whatever level of risk the investor deems appropriate. A portfolio is a collection of investment

securities."(Weston and Brigham,1992) The portfolio of asset usually offers advantages of reduction risk through diversification. A stock or securities held, as part of a portfolio is less risky than the same stock held in isolation. The objective of portfolio analysis is to develop a portfolio that has the maximum return at whatever level of risk the investor deems appropriate.

"A portfolio is a bundle of combination of individual assets or securities" (Pandey,1997). 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 under risk. Portfolio expected return is a weighted average of the expected return of individual securities but the portfolio is sharp contrast, can be something less than a weighted average of variance. As a result an investor can reduce portfolio risk by adding another security with greater individual risk than any other securities in the portfolio. The seemingly curious result occur because risk greater on the covariance among the return of individual securities.

Most financial assets are not held in isolation, rather they are held as pars of portfolios. "Portfolio theory deals with 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 and Copeland,2003) Portfolio management is the process of selecting a bundle of securities that provides the investing organization a maximum yield for a given level of risk or alternatively ensuring minimum level of risk for a given level of return. It can be also taken as risk and return management. Its aims to determine an appropriate asset mix which attains optimal level of risk and return. The objective of portfolio management is to analyze different individual assets and delineate efficient portfolios. The group of all efficient portfolios will be called the efficient set of portfolios. The efficient set of portfolios comprises the "efficient frontier". The efficient frontier is the locus of points in risk – return space having the maximum return at each risk class. The efficient frontier dominates all other investments.

"Portfolio theory was originally proposed by Harry M. Markowitz in 1952 A.D." (Cheney and Moses,1995) The theory is concerned with selection of an optimal portfolio by a risk averse investor. A risk adverse investor is an investor who selects a

portfolio that maximizes expected return for any given level of risk or minimizes risk for any given level of expected returns. A risk adverse investor will select only efficient portfolios. Portfolio theory can be used to determine the combination of these securities that will create the set of efficient portfolios. The selection of the optimal portfolio depends on the investor's performance for risk and return.

2.1.3 Market portfolio

"The market portfolio is the unanimously declarable portfolio consisting of all the securities where the proportion invested in each security corresponds to its relative market value. The relative market value of the security divided by the sum of the aggregate market value of all securities. The return on the market portfolio is the weighted average return on all capital assets. Since the market portfolio contains all risky assets in proportion to their market value, it is by definition, a perfectly diversified portfolio. The market portfolio is, therefore subject only to systematic or non-diversifiable risk. The volatility of the market portfolio is due to macroeconomic factors that affect all risky assets and not to economy or industry specific factors. Volatility in return created by unsystematic risk, this risk can be diversified away by adding risky assets to a portfolio" (Cheney and Moses,1995).

The market portfolio holds a special place in modern in theory and practices. It is central to CAPM, which assumes that the market portfolio lies on the efficient set and that all investors hold the market portfolio in combing with a desired amount of risk free borrowing and lending.

2.1.4 Factor affecting investment portfolio decision

An investment is an asset or item that is purchased with the hope that it will generate income or will appreciate in the future. In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth. In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or will be sold at a higher price for a profit (Kothari,2004).

i.   Amount of investment

While determining the investment portfolio the finance managers should actually consider the amount of fund available with organization. Trading and manufacturing

organization deal in securities only for the purpose of best utilization of their available surplus cash resource. The amount of surplus fund available with them will therefore decide the quantum of their investment in securities.

ii. Objective of investment portfolio

While determining the investment portfolio we should be clear about objective of making investment in securities. The objective may differ organization to organization. While an Organization looking for investment of provident fund of its employees can think of having in its investment portfolio only such securities which can assure safety of the fund and its return.

iii. Selection of investment

This is an essential decision which a finance manager has to take. He has to decide the kind of investment in which he has to put his fund. The selection of investment involves deciding about the type of securities, proportion between fixed and variable yield securities, selection of industries, selection of companies etc.

iv. Timing of purchase

To maximize the profit, it is not only important for the finance manager to buy the right security but it is also equally important to buy and sell it at the right time. It is the most intricate and complex decision for finance manager.

2.2 Review of previous works

This section is developed to the review of major related literature concerning portfolio in different countries. But in Nepal there are very few studies can be found in the topic of portfolio analysis on investment of commercial banks in Nepal. For this study, various books, journals, articles and past thesis are reviewed. It is reviewed from international context and Nepalese context.

2.2.1 Review of journals and articles

In this section, effort has been made to examine and review of some related articles in different economic journals, magazines, newspapers and other related books and publication.

Shrestha (2008) has given a short glimpse on article entitled "Portfolio Management in Commercial Banks; Theory and Practices". (Nepal Bank Patrika,2008). Mr. Shrestha in his article has highlighted the importance of portfolio management both

for individuals and institutional investor. Researcher has used analytical research design for the study purpose. He has mention short transitory view on portfolio management in Nepalese commercial banks. In this context he has presented two types of investment analysis techniques i.e. fundamentals analysis to consider any securities such as equity, debenture or bond and other money and capital market instrument. He has suggested that the banks having international joint venture network can also offer admittance to global financial markets. He has pointed out the requirement of skilled labors, proper management information system in joint venture banks and financial institution to get success in portfolio management and customer assurance.

On the basis of his article, the portfolio management activities of Nepalese commercial banks at present is in nascent stage. However, on the other hand most of the banks are doing such activities so far because of following reasons. Such as unawareness of the client about the service available, hesitation of taking risk by the client to use such facilities, lack of proper techniques to run such activities in the best and successful manner, less development of capital market and availability of few financial investment in the financial market.

Timilsina (2013) has published an article on "Managing Investment Portfolio." He is however, confronted with problems of managing investment portfolio particularly in times of economic slowdown like ours. Researcher has used descriptive research design for the study purpose. A rational investor would like to diversify his investments in different classes of assets so as to minimize risks and earn a reasonable rate of return.

An investment in equity share can earn dividend income as well as capital gain, in the form of bonus share and right share until an investor holds it and capital profit when he sells it in the stock market. As returns from equity investments have fluctuated within a very wide range, investors feel it much difficulty to balance risk and reward in their equity portfolio. As a matter of fact, investors in equity shares should invest for a reasonable long time frame in order to manage the risk.

Making investment in fixed deposits with commercial banks is a normal practice among the common people. Normally fixed deposits with banks are considered risk-less, but they also are not 100% free of risk. You should select a bank to put your

deposit therein, which has sound financial health and high credibility in banking business. In times of crisis if you select a sick bank deposit your money there is high probability that your money could be returned back.

An investor may have option of making investment in government bonds or debentures. In history we have examples that a government can nationalize the private property of its citizens, cancel out old currency notes, and can convert the new investment into some conditional instrument. But in democracy there is no probability that the government would default to repay money back. This is comparatively risk free investment, but yields low return.

Thapa (2014) has published an article on The Kathmandu Post daily of 9th march 2014 entitled "Managing Banking Risk", in his article ha has accomplished the subsequent issues. Banking and financial service are among the fastest growing industries in developed world and are also emerging as cornerstones in other developing and undeveloped nations as well. Bank primary function is to trade risk. Risk cannot be avoided by the bank but can only be managed. There exist two types of risk. The first is the diversifiable risk or the firm specific risk which can be mitigated by maintaining an optimum and diversified portfolio. This is due to the fact that when one sector does not do well the growth in another might offset the risk. Thus, depositor must have the knowledge of the sectors in which there banks have make the lending. The second is undiversifiable risk and it is correlated across borrower, countries, and industries. Such risk is not under control of the firm and bank.

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

Mahat (2015) has published an article on The Kathmandu Post daily of 28th April 2015 entitled "Efficient Banking", in his article he has accomplished, the efficiency of banks can be measured using different parameters. The concept of productivity and profitability can be applied while evaluating efficiency of banks. The term productivity refers to the relationship between the quantity of inputs employed and the quantity of outputs produced. An increase in productivity means that more output can be produced from the same inputs or the same outputs can be produced from fewer inputs.

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

2.2.2 Review of previous theses

Mahandhar (2010) in her thesis entitled "Analysis of Risk and Return on Common Stock Investment of Commercial Bank in Nepal" has been done in 2010. The main objective of the study was to analyze risk and return on common stock investment of CBs, to calculate risk and return of their portfolio and to identify stocks of selected bank are over-priced, underprice and equilibrium priced. Focusing on risk and return pattern of the sample taken from the listed companies, Researcher used financial tools to calculate the financial factors like MPS, DPS. To achieve this study researcher used analytical research design. The major financial tools like Holding Period Return (HPR), Expected Rate or Return, Beta coefficient to measure systematic risk, portfolio risk along with other statistical majors. To draw the conclusion, researcher has used Hypothesis test to satisfy the null hypothesis.

Major finding of the study were risks associated with common stock investment of different selected companies are 1.3949, 0.4154, 0.7392, 0.6798 and 0.1429 of BOKL, NABIL, NSBI, NBBL, and NIBL respectively. Stock of all banks in this study are said to be underpriced. These companies' common sticks are worth to

purchase, as their expected return is greater than required rate of return. Portfolio return is greater than portfolio risk of two banks (i.e. NBBL and NSBI)

Shah (2012) in her thesis "Impact of Interest Rate Structure on Investment Portfolio of Commercial Banks in Nepal" has been done in 2012. The main objective of the study was to analyze the interest rates structure and its impact on various activities of commercial banks. Measuring interest rate impact in terms of return in investments, researcher used financial tools to calculate interest returns in savings and fixed deposits as well as the impact on loan distribution patterns. Research gave the key to find out the significance difference of interest rate structure between deposits and loans. Taking the liberalization policy as a marginal impact researcher tried to conclude the research by assessing various ratios in terms of interest.

Study conclude that the interest rates on saving deposit are less or more constant in five years of before liberalization but it started to decline after liberalization. In the same way the fixed deposit rates also started to decline after liberalization. Thus the deposit is increasing at decreasing rate. The lower rates of interest rates decrease deposit. The lending rates on purpose wise loan i.e. industrial sector, agricultural sector increased in average after liberalization but decreased in commercial sector. Increasing in lending rates resulted in the decrease in credit flow, which consequently decreased the profit of commercial banks. The amount of deposit increased after liberalization but the growth rate in average comparison to before liberalization increased only by 0.44%. Thus the deposit had not increased more even after the existence of liberalization is due to the declining deposit rates. CBs investment in government and other securities highly increased in the year liberalization, which is due to the lack of proper utilization of collected resources. But started to decline after two years of liberalization and reached to negative point due to the higher rate and enough promising investment opportunities available in private sectors.

Shrestha (2013) in her thesis entitled "Portfolio Analysis of Common Stock of Commercial Banks in Nepal" has been done in 2013. The main objective of the study was to find out level of portfolio risk and return on stock of commercial bank investment, trend of NEPSE index, market price movement. Researcher has used analytical research design for the study purpose. Various tools are used to analyze the data to support the conclusion. Trend analysis showed the trends of NEPSE Index.

Risk and return tools like Beta coefficient, Portfolio risk and return, Expected return, holding period return along with statistical tools like CV, Standard Deviation, Correlation and Regression are used to find out the relevance of data collected.

The result of the study is the correlation of stock, return and market shows that all of the banks stock are highly positive correlated with the market. The correlation values of common stock of all bank with the markets is nearly equal +1. Stock of NBBL is highest positive correlation which has values of +O.918 and NSBI is lowest positive correlated which has a value of +0.82.All of banks beta of common stock is greater than 1. Beta greater than 1 implies that stocks are more volatile than market or said to be aggressive stock. NBBL has the highest beta i.e. 2.1785 and SCBL has the lowest beta i.e. 1.2142. All of the stocks are aggressive. Among four banks optimal portfolio return and risk shows that return NBBL is highest i.e. 32.7% and return of NSBI is lowest i.e. 24.9% and NSBI has a highest portfolio risk of i.e. 61% and SCBL has a lowest portfolio risk of 34.8%.

Shrestha (2014) in his thesis entitled "A Study on Investment Portfolio of Commercial Banks in Nepal" has been done in 2014. The major objective of this research was to identify the current situation of investment portfolio of CBs in Nepal and examine the trend of investment and to provide complementary measures based on analysis. Methodology used to analyze the data includes common financial tools like return on share and debenture, return on government securities, return on loan and advances and return on portfolio. For risk measurement, it was measured on risk on individual assets and risk on portfolio. The major ratios like return on total asset ratio, total investment to total deposit ratio, loan and advances to total deposit ratio, government securities to total deposit ratio are used. To verify the assumption, there used common statistical tools like standard deviation, arithmetic mean, co- variance, correlation and regression analysis.

The study finding are proper investment on various securities i.e. balance allocation of funds on various government securities such as Treasury bills, National saving bonds, Development bonds etc. and fixed income percentage rate that help to reduce the variability of return. In the analysis of risk and return comparatively SCBNL have more return from investment on government securities like same NABIL has better position on investment on loan and advances. The return on share and debenture of commercial banks shows wide fluctuation. These fluctuations in returns are caused

mainly by the volatility of the shares prices in market and by the changes in dividends in some extent. Comparatively to other assets, share and debenture has higher return and higher risk. Hence, it is cleared from analysis that investment on share and debenture is high risk assets.

Shrestha (2016) has conducted a study on ″Investment Policy and Portfolio Management of NCC Bank Limited.″ The main objective of the study was to appraise the Investment Policy of NCC Bank and to evaluate its portfolio as well. The research was conducted mainly on the basis of secondary data. Researcher has used descriptive research design for the study purpose. It was found that bank has formulated a satisfactory loans and advances policy. Most of the credit related matters were found well incorporated in the policy documents. There was not investment policy for investment on shares, bonds and debentures till the FY 2070/71. All the investments were used to make with the decision of the Treasury Manager and the Chief of the Bank. So, this category of investment operation was not well managed in the bank. As a result of this, there was significant proportion of unmarketable, illiquid and unyielding assets in securities portfolio of bank. Such assets were hampering the liquidity and profitability of banks. Thus, to sum up, the study on investment policy suggested that the bank is following a "Sound" investment policy to conduct its investment function as suggested by policy scores.

Shrestha, (2016) conducted a study on "A Comparative Analysis on investment performance of commercial banks in Nepal" with the objectives to study the asset utilization system, profitability and risk position of commercial banks. The study was mainly focused on secondary data. Major finding of the study were the liquidity position of NIBL was stronger than NABIL and NSBI. At the same time, liquidity position of NIBL was highly fluctuating, which showed that NIBL bore higher risk than other two banks. In the profitability analysis, none of the three banks' profitability position was clearly better. However, NABIL was slightly better profitability. Therefore, their profitability ratios were in moderate position. From the risk point of view, NABIL and NIBL were facing higher risk than NSBI, but the risk level of all three banks seemed almost the same. From the analysis of growth ratios, NIBL's collection of deposit, granting of loans and advances and net profit were better but in terms of investment, NSBI is better.

2.3 Research gap

Portfolio investment refers to an investment that combines several assets. Commercial banks cannot utilize whole of its fund raised through deposit and borrowing into loans and advance. To fulfill the gap between borrowing and lending banks rather goes for investment. From the above study the researcher founds the gap and failed to analyze the financial performance of commercial banks in terms of investment portfolios.

More specifically, researcher has taken the samples which are more bullish in current market and try to find out how they have managed the investment portfolio that made them success in unprecedented way. In this research, researcher has tried to diagnosis that good portfolio investment lead directly on the financial performance of the banks in long run and help to maximize market price of share.

Finally, the sample taken from the research purpose are unique that has hardly taken in previous study in a single batch for study purpose. This study focused overall financial indicators that may or may not affect the financial performance of commercial banks in consideration with portfolio management. So this study will be fruitful to those person, scholar, students, teachers, civil society, stakeholders, businessmen and government for academically as well as policy perspectives.

CHAPTER- III
RESEARCH METHODOLOGY

Research is the plan, structure and strategy of investigations conceived to answer the research question or test the research hypothesis. Research variable is defined as anything that has a quantity or quality that varies. The dependent variable is the variable a researcher is interested in. An independent variable is a variable believed to affect the dependent variable. In this study, investment portfolio is a dependent variable which is resulted by private sector investment, investment on financial institution, non-financial government enterprises and investment bills purchase and discount.

3.1 Research design

The present study is mainly based on two type of research design i.e. descriptive and analytical. Descriptive research design describes the general pattern of the Nepalese investors, business structure, problem of portfolio management etc. The analytical research design makes analysis of the gathered facts and information and makes a critical evaluation of it.

Finally research design is the plan, structure and strategy of investigations conceived so as to obtain answers to research questions and to control variances. To achieve this study descriptive and analytical research designs have been used.

3.2 Population and sample

Under the study of investment portfolio analysis of Nepalese commercial banks, the total number of commercial banks including domestic and joint venture banks operating in the Nepal is the population. Convenience sampling method has been used for the selection of banks. At present there are twenty seven licensed commercial banks are running in Nepal. All 27 licensed Nepalese CBs has considered as the total population out of them this study is concerned with three CBs as a sample.

The selected sample banks for the analysis are as follows;

Standard Chartered Bank Ltd.

Nepal Investment Bank Ltd.

Everest Bank Ltd.

Population size = 27

Sample size = 3

Sample Percentage = 11.11%

A Brief Profile of Sampled Banks

Everest Bank Ltd. (EBL)

Catering to more than 7.5 lacks customers, Everest Bank Limited (EBL) is a name you can depend on for professionalized & efficient banking services. Founded in 1994, the Bank has been one of the leading banks of the country and has been catering its services to various segments of the society. With clients from all walks of life, the Bank has helped develop the nation corporately, agriculturally & industrially.

Everest Bank Limited (EBL) provides customer-friendly services through its wide Network connected through ABBS system, which enables customers for operational transactions from any branches. The bank has 86 Branches,7 province offices, 113 ATM Counters, 3 extension counter & 28 Revenue Collection Counters (as on 4th Nov 2019) across the country making it a very efficient and accessible bank for its customers, anytime, anywhere.

Nepal Investment Bank Limited (NIBL)

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

With the decision of Credit Agricole Indosuez to divest, a group of companies comprising of bankers, professionals, industrialists and businessman, had acquired on april 2002 the 50% shareholding of Credit Agricole Indosuez in Nepal Indosuez Bank Ltd. The name of bank has been change to Nepal Investment Bank Ltd. upon approval of bank's Annual General Meeting , Nepal rastra bank and company Registar's office. NIBL has achieved the bank of the year award for four times by The Banker Magazine. NIBL serves its expanding clientele base with a network of 77 branch offices four extension counters and 8 revenue collection counters, 101 ATM machine At July 2018 ,NIBL has balance sheet of RS 145.billions. It has it's head office located in Durbarmarg Kathmandu.

Standard Chartered Bank Nepal Ltd. (SCBNL)

Standard Chartered Bank Nepal Limited has been in operation in Nepal since 1987 when it was initially registered as a joint-venture operation. Today the Bank is an integral part of Standard Chartered Group having an ownership of 70.21% in the company with 29.79% shares owned by the Nepalese public. The Bank enjoys the status of the largest international bank currently operating in Nepal.

Standard Chartered has a history of over 150 years in banking and operates in many of the world's fastest-growing markets with an extensive global network of over 1700 branches (including subsidiaries, associates and joint ventures) in over 70 countries in the Asia Pacific Region, South Asia, the Middle East, Africa, the United Kingdom and the Americas. As one of the world's most international banks, Standard Chartered employs almost 87,000 people, representing over 115 nationalities, worldwide. This diversity lies at the heart of the Bank's values and supports the Bank's growth as the world increasingly becomes one market.

With 15 points of representation, 26 ATMs across the country and with more than 480 local staff, Standard Chartered Bank Nepal Ltd. is in a position to serve its clients and customers through an extensive domestic network. In addition, the global network of Standard Chartered Group gives the Bank a unique opportunity to provide truly international banking services in Nepal.

3.3 Sources of data

The study is primarily based on secondary sources of data. The required data and information were collected through websites of sampled banks, NRB statistics, and annual publications of sampled commercial banks, etc.

3.4 Data collection and processing procedure

Although, the study mainly used secondary data, high level of efforts and more time was paid to get data. Official publications like Economic Survey, Annual Reports, Banking and Non-Banking Financial Statistics, Economic Bulletin etc. were obtained from respective offices. Mainly most of the data are taken from the library of SEBON. To some extent, informal interview was scheduled and conducted to obtain more information and reality about the various published data, investment policies of the banks, portfolio concept in the field of investment etc.

The data obtained from the various sources are further verified and simplified for the purpose of analysis. Hence, in this study the available data, information, figures and facts were checked, rechecked, edited and tabulated for computation. Similarly, according to the need and objectives, the secondary data were compiled, processed tabulated and graphed if necessary for the better presentation.

3.5 Data analysis tools and techniques

Various financial and statistical tools were used to analyze the data ratio analysis, correlation coefficient, trend analysis, risk and return, standard deviation, hypothesis test, etc. were used in the study. A brief explanations of statistical and financial tools employed in this study is given below.

a) Financial tools

There are several tools which can be applied in order to analyze the performance of CBs. But the following main financial tools are used to analyze.

I. Ratio analysis

The relationship between the two accounting figures expressed mathematically is known as ratio. Ratio analysis is used to compare a firm's financial performance and status to that of other firms or to itself on time (Gitman,1990). Likewise, ratio refers to the numerical or quantitative relationship between two items or variables. In simple language it is one number expressed in term of another and can be worked out by dividing the number to the other i.e. it is calculated by dividing one items of the relationship with the other.

1. Net interest margin

The net interest margin is equal to how much net income or profit is generated as a percentage of revenue. Net profit margin is the ratio of net profits to revenues for a company or business segment. Net profit margin is typically expressed as a percentage but can also be represented in decimal form. The net profit margin illustrates how much of each dollar in revenue collected by a company translates into profit. It is computed as;

$$\frac{\text{Net Profit}}{\text{Total income}}$$

2. Price earnings ratio:

The price to earnings ratio (P/E ratio) is the ratio for valuing a company that measures its current share price relative to its per-share earnings. The price earnings ratio is also known as the price multiple or the earnings multiple.

P/E ratios are used by investors and analysts to determine the relatives value of a company's shares. It's can also be used to compare a company against its own historical record or to compare aggregate markets against one another or over time.

This can be stated as

$$\frac{\text{Market value per share}}{\text{Earnings per share}}$$

3. Net profit to total assets ratio

This ratio is very much crucial for measuring the profitability of funds invested in the bank assets. It measures the return on assets. It is computed by dividing the net profit after tax by total assets. The formula used for computing this ratio is as

$$\frac{\text{Net Profit after Tax}}{\text{Total Assets}} \times 100$$

4. Net profit to loan and advance

Net profit to loan and advance refers to the profit that is earned by lending deposit collection from customers and other financial institutions. This deposit is provided to needy customers and financial institutions through which banks earns higher returns then they provide to the depositors. This can be stated as

$$\frac{\text{Net Profit}}{\text{Loan and Advance}}$$

5. Credit to deposit ratio

It is the ratio of how much a bank lends out of the total deposits it has mobilized. It indicates how much of a bank's core funds are being used for lending, the main banking activities. A higher ratio indicates more reliance on deposit for lending and vice-versa.

This ratio is calculated by dividing total credit by total deposit investment this can be stated as,

Total Credit

Total Deposit

II. Risk and return analysis

1. Risk and return analysis

The return on share and debenture considers dividend yield and capital gain yield. The dividend yield is only a partial indication of the return hence, return on share and debenture significantly depends on the change in its share price. It is calculated as follows

$$\text{Return on share and debenture}\,(R_s) = \frac{P_t - P_{t-1} + D_t}{P_{t-1}}$$

2. Return on other investments

This ratio indicates how efficiently the bank has employed its resources to earn good return from other investment. This ratio is computed by dividing interest income on other investment by other investments. This can be expressed as;

$$\frac{\text{Interest income on other investments}}{\text{Other investments}} \times 100$$

3. Risk on individual assets

The riskiness of assets depends on the variability of rates of return, which is defined as the extent of the deviation of individual rates of return from the average rate of return. Risk on individual assets can be calculated as;

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

4. Return on portfolio

The return of a portfolio is the weighted average of the returns of the individual assets in the portfolio. The weights are proportion of the investors wealth invested in each asset, and sum of the weights must be equal one.

$$\text{Portfolio return}\,(R_p) = W_A R_A + W_B R_B + \dots\dots\dots\dots + W_N R_N$$

5. Risk on portfolio

The portfolio risk is measured by either variance or 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.

The portfolio risk can be calculated in term of its standard deviation as;

$$\sigma_p = \sqrt{W_A^2\sigma_A^2 + W_B^2\sigma_B^2 + W_C^2\sigma_C^2 + 2Cov_{AB}\times W_A \times W_B + 2Cov_{AC}\times W_A \times W_C + 2Cov_{BC}\times W_B \times W_C}$$

6. Co-variance

The covariance measure how two variables co-vary. It is a measure of the absolute association between two variables. How the returns of individual stocks and market co-vary measured by covariance between the return of individual stocks and market return. If two variables are independent, their covariance will zero. It computed as;

Cov $(R_n, R_m) = \dfrac{\sum(R_n - \overline{R_n})(R_m - \overline{R_m})}{n-1}$

7. Coefficient of variation

We know that standard deviation is the absolute measure of dispersion of rate of return. The relative measure of dispersion based on the standard deviation is known as the coefficient of standard deviation.

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

The CV thus defines the risk associated with each dollar of expected return in terms of ratio of the standard deviation of return to the expected return (Pradhan, 2000).

b) Statistical tools

The process of analyzing and evaluating various data statistical tools has been used. In this study, statistical tools such as standard deviation, mean, coefficient of variation, coefficient of correlation between different variables, as well as hypothesis test have been used, which are as follows;

I. Karl Person's coefficient of correlation

Correlation Coefficient is statistical tools for measure of the relative association between two variables series; it describes how much linear co-movement exits between two variables. The correlation coefficient is calculated as follows:

Corr. (R_n, R_m) or r $= \dfrac{Cov(R_n, R_m)}{\sigma_n \sigma_m}$

The value of correlation coefficient 'r' lies between -1 to +1

II. Mean

It can also be denoted by AM or simply a mean of a set of observations is the sum of all the observation divided by the number of observations. AM is also known as the arithmetic average. AM is the most popular one among the different measures of the averages. e.g., the AM of x of N observation $x_1, x_2, x_3 \ldots \ldots x_n$ is given by

$$\overline{X} = \frac{1}{N}\left(x_1 + x_2 + x_3 + \ldots\ldots + x_n\right)$$

$$\overline{X} = \frac{\sum x}{N}$$

CHAPTER – IV
RESULTS

The main theme of this chapter is to analyze and interpret the data by using financial and statistical tools. In this chapter, the concern is given in the presentation and analysis part of data in detail. As data presentation and analysis is the crucial part of any research, the purpose is to organize the collected data so that it can be used for interpretation whereas analysis of the data is to convert it from a crude form to an easy and understandable presentation. It is so obvious that the presentation of the data and its analysis help us to draw valid conclusion.

There are a number of methods which can be used to simplify the data. It is being felt that the easiest way to understand the data is by examining it through charts, tables and graphs. Necessary tables and figures are personated to achieve the objectives of the study. Here, all possible data are collected from Nepal Stock Exchange (NEPSE) and Security Board (SEBON). Similarly, some of the data are also collected from Internet, Journals and other concerned sources.

4.1 Data presentation and analysis

Investment is the most important functions of CBs because investment policy provides several inputs, through which banks can handle their investment operation efficiently and maximize return with, minimize risk which is the success path for the banks. CBs must mobilize it funds to profitable, secured, and marketable sector, so that it can earn more profit. CBs must fulfill the credit needs of various sectors of the economy including industry, commercial, social service, securities and agriculture sector.

The investments held by the Bank comprise following 3 categories:

i. **Investments held for trading (HFT):** These are the marketable investments and held with the primary intention of resale over a short period of time. These investments are initially measured at cost and subsequently recognized at market value. Gain or losses arising from trading/revaluation are recognized in profit or loss account(Income Statement)

ii. **Investments available for sale (AFS):** These are the investments held with the primary intention to recover value of investments through sale rather than continuing to hold. These investments are initially measured at cost and subsequently recognized at market value. Gains or losses arising from sale/revaluation are recognized on Investment Adjustment Reserve/Retained Earnings. The investments, which are classified under this category however not listed in stock exchange, are carried at cost at the Balance Sheet. Amount equivalent to at least 2% of such investments are earmarked on Investment Adjustment Reserve from the Retained Earnings in line with the requirement of NRB.

iii. **Investments held till maturity (HTM):** These investments are primarily intended to hold until the maturity and are stated at cost and carried at these values in the Balance Sheet until the maturity. Any impairment losses arising in such investments are provisioned and charged in the Profit or Loss Account (Income Statement). Premiums paid while acquiring HTM Investments is recognized as the part of initial cost and subsequently amortized as reversal of interest income on proportionate basis until the maturity.

All investments are subject to periodic review as required by NRB Directives.

Nowadays most of the banks depend upon the investment strategies. By which the CBs are playing the vital role in the economic development of the country. This chapter investment operation of CBs deals with the pinpointing analysis related to the investment of the CBs of Nepal on securities, cash placement with banks and financial institutions , loan and advances prepared in various economic sectors.

4.1.1 Investment on securities

The investment of the CBs on securities includes the investment on treasury bills, development bonds, national savings bonds, insurance bond etc. In some extent all CBs seem to be interested to use their deposits by purchasing government securities.

The Central Bank has also made mandatory provision to Invest in Government Securities for Banks and Financial Institution. As per the new provision introduced through Monetary Policy, commercial banks, development banks, finance companies and finance companies not authorized for operating current account deposits are required to maintain 15 percent, 11 percent, 10 percent and 6 percent SLR respectively. In the context of permission granted to class "D" financial institutions

for deposit mobilization, those who have already started deposit mobilization from general public are also required to maintain the 4 percent SLR. The investment on government security, cash in vault; deposit held with the NRB including cash reserve ratio of bank and financial institutions will be eligible for counting SLR. However, commercial banks, development banks and finance companies must maintain 5.5 percent cash reserve ratio whereas finance companies not accredited to operate current account must maintain 2 percent cash reserve ratio. Likewise, class "D" financial institutions that mobilize public deposits must also maintain 2 percent cash reserve ratio. Table 4.1 represents the structure of investment on securities held by CBs.

Table 4.1
Structure of investment on securities held by CBs

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	9391379	8383529	9972342	27747250
2014/15	5976993	10141904	10437615	26556512
2015/16	10213822	15767779	9085179	35066780
2016/17	4810675	14659802	7652705	27123182
2017/18	4660993	17369129	15292314	37322436
Total	35053862	66322143	52440155	153816160
Average	7010772	13264429	10488031	30763232

Note: Annual Reports of Sampled Banks from FY 2013/14 to 2017/18

Table 4.2
Percentage of investment on securities of each Banks

FY	SCBL	NIBL	EBL
2013/14	33.85%	30.21%	35.94%
2014/15	22.51%	38.19%	39.39%
2015/16	29.12%	44.97%	25.91%
2016/17	17.74%	54.05%	28.21%
2017/18	12.49%	46.54%	40.97%
Average	23.14%	42.78%	34.08%
S.D.	0.65%	0.66%	0.68%
C.V.	0.262	0.319	0.297

Note: Table 4.1 and Appendix 1. (d)

Figure 4.1
Percentage coverage of securities held by CBs
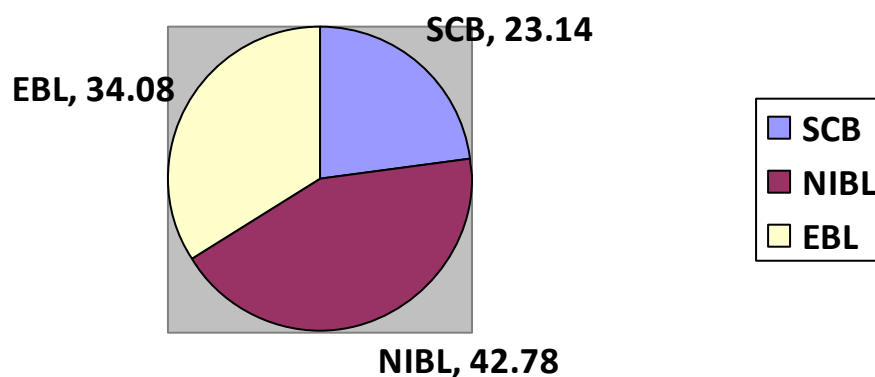
The table 4.1 and 4.2 and figure 4.1 reveals that most the investment on securities of NIBL is highest among other banks. The SCB has been found to have investment on securities lower comparative to other banks. Similarly the NIBL covers more shares i.e. 42.78% of the total investment on securities made by CBs. EBL be on 2nd position by investing 34.08% of the total investment on securities made by CBs. Similarly the lowest C.V. of SCB shows the more consistency in investment.

NIBL has highest CV which means there is high variability in investment on securities. From above analysis about the investment structure of CBs on the securities reveal there is no similar trend of investment on securities made by CBs. Some banks 12% of total investment while some covers more than that (i.e. nearly half parts) of total investment on securities.

4.1.2 Placement with banks and financial institution

The investment structure of commercial banks on placement with banks and financial institutions are shown in Table 4.3 and Table 4.4.

Table 4.3
Placement with banks and financial institution by CBs

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	1712084	1921006	5924719	9557809
2014/15	1478690	2661271	7246429	11389390
2015/16	1658294	15649009	7761125	25068428
2016/17	6190800	12613468	3350750	22155018
2017/18	4831200	10246404	3291000	18368604
Total	15871068	43091158	27574023	86536249
Average	3174214	8618232	5514805	17307250

Note: Annual Reports of Sampled Banks from FY 2013/14 to 2017/18

Table 4.4
Percentage of Placement with banks and financial institution

S.N	SCBL	NIBL	EBL
Average	3174214	8618232	55114805
% of Average	18.34%	49.80%	31.86%
S.D.	2.18%	0.56%	0.94%
C.V.	0.560	0.397	0.528

Note: Table No.4.3 and Appendix 1. (a)

Figure 4.2
Percentage coverage of placement with banks and financial institution by CBs
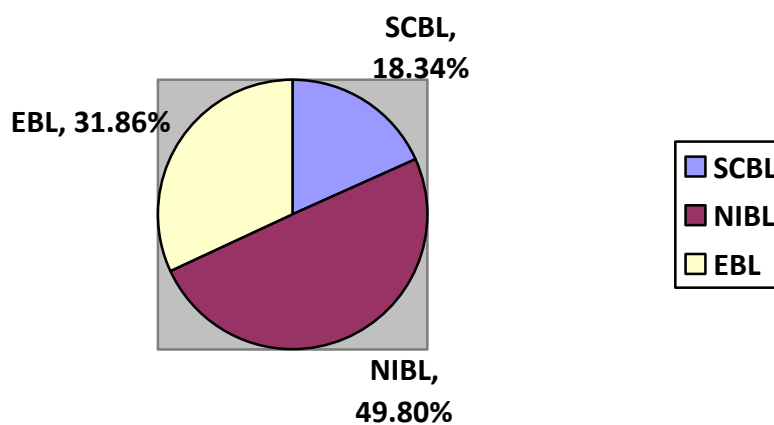
The table 4.3 and 4.4 and figure 4.2 shows that EBL and NIBL made very low parts on placement with banks and financial institution then that of except NIBL. The figure shows NIBL has been investing highest among other CBs i.e. 49.80%. Similarly, SCBL has least mean, which say that SCBL placement in banks and financial institution is low i.e. 18.34%, whereas EBL has 31.86%.

NIBL lowest CV indicate more consistent in placement with banks and financial institutions. Standard deviation of SCBL indicate that bank has higher risk in placement with banks and financial institution in comparison of NIBL and EBL.

4.1.3 Loan and advance to banks and financial institutions

Commercial banks also invested their fund other than securities and Corporate Shares and Bond. The other investment includes investing on Loan and Advance to Banks and Financial Institutions. CB's are investing large portion of Investment in Foreign Banks in term of deposit and Placement. The investment structure of commercial banks on Loan and Advance to Banks and Financial Institution is shown in table 4.5 and 4.6.

Table 4.5
Structure of investment on loan and advance to banks and financial institutions held by CBs

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	14961837	897468	760342	16619647
2014/15	19122619	1023643	830843	20977105
2015/16	18950461	1496951	2754233	23201645
2016/17	1610449	2158458	3291102	7060009
2017/18	2134850	2502926	4254678	8892454
Total	56780216	8079446	11891198	76750860
Average	11356043	1615889	2378240	15350172

Note: Annual Reports of Sampled Banks from FY 2013/14 to 2017/18

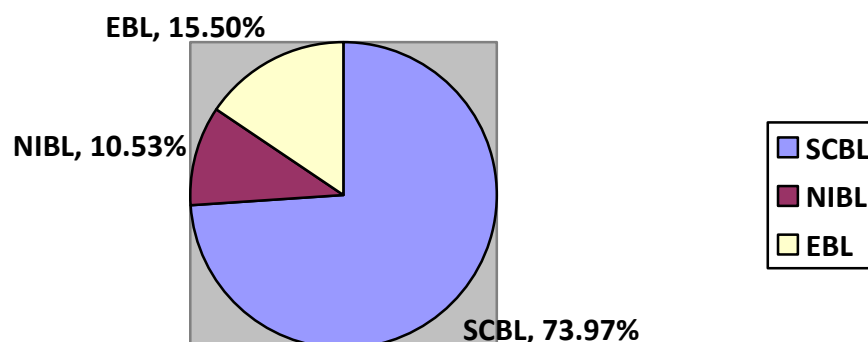Table 4.6
Percentage of investment on loan and advance to banks and financial institutions held by CBs

FY	SCBL	NIBL	EBL
Average	11356043	1615889	2378240
% of Average	73.97%	10.53%	15.50%
S.D.	1.78%	0.18%	0.44%
C.V.	0.335	0.692	1.05

Note: Table No.4.5 and appendices(b)

Figure 4.3
Percentage coverage of loan and advance to banks and financial institutions held by CBs

The table 4.5 and 4.6 and figure 4.3 shows that CBs made significant Investment on loan and advance to banks and financial institutions. Among three CBs SCBL has invest large portion of investment i.e. 73.97% followed by EBL i.e. 15.50% and NIBL i.e. 10.53%. It signifies that SCBL has larger foreign currency reserve in term of loan & advance and placement.

From the analysis it is concluded that EBL has greater CV which reveals the investment pattern of EBL is quite volatile whereas CV of SCBL is lowest reveals consistent investment .

4.1.4 Loan and advance to customers

Commercial banks are financial institutions that collect scattered savings of community and invest them into most desirable and high return sectors of economy. Pace of economic development is directly related to the quality and quantity of the credit. CB's   are improving access to financial services to majority of population of Nepal and is committed to help bring who are not in realm of financial services into mainstream economy. This is vital part of promoting economic growth and will help to bring people out of property.

Commercial banks invest their funds in various sectors like industry, agriculture; commercial sector etc. commercial banks should invest its collected funds as loan and

advances. Loans and advances, Overdrafts and bills purchased include direct finance provided to customers such as bank overdrafts, credit card, personal loans, term loans, hire purchase finance and loans to deprived sectors. All loans are subject to regular review and are graded according to the level of credit risk and classified as per Nepal Rastra Bank's Directives. Investment structure of loan and advances to customers of CBs are tabulated in Table 4.7 and 4.8.

Table 4.7
Structure of loan and advance to customers held by CBs

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	26112494	52019765	59572632	137704891
2014/15	27815970	66219232	62879452	156914654
2015/16	31496116	84608804	66768580	182873500
2016/17	38433668	103418050	75695622	217547340
2017/18	44561330	118322570	89927570	252811470
Total	168419578	424588421	354843856	947851855
Average	33683916	84917684	70968771	189570371

Note: Annual Reports of Sampled Banks from FY 2013/14 to 2017/18

Table 4.8
Percentage of investment on loan and advances to customers of each Bank

FY	SCBL	NIBL	EBL
Average	33683916	84917684	70968771
% of Average	17.77%	44.79%	37.44%
S.D.	1.31%	1.82%	1.62%
C.V.	0.163	0.232	0.208

Note: Table 4.7and appendices(c)

Figure 4.4
Percentage coverage of loan and advances to customers of different CBs
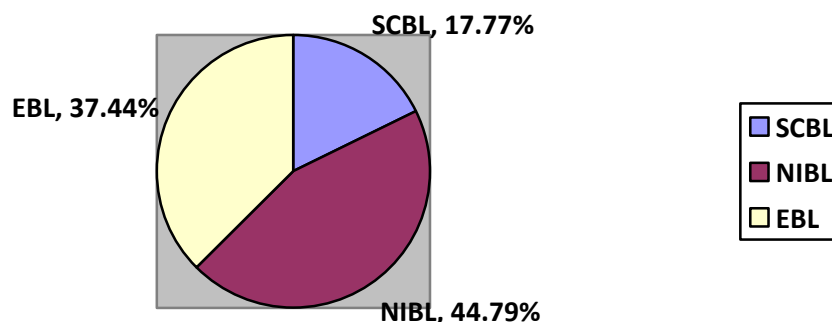
From the above table no. 4.7 and 4.8 and figure 4.4 shows that NIBL has the highest shares i.e.44.79% on loan and advances to customers among SCBL & EBL, throughout the review period from 2013/14 to 2017/18. EBL takes at the second position and SCBL take last position covering 37.44% and 17.77% respectively on loan and advances to customers. The percentage of Loan and Advances to customers of NIBL has been increasing drastically in last five years.

From the analysis it is concluded that NIBL has greater CV i.e. 0.232 which reveals the investment pattern of NIBL is more riskier than EBL & SCBL whereas CV of SCBL is lowest i.e. 0.163 reveals consistent investment.

4.2 Analysis of risk and return of CBs

Risk and Return are two crucial phenomenon in world of investment. There is always linear relationship between risk and return. Nobody will take to invest in risky assets unless he is assured of adequate compensation for the assumption of risk. Generally in a market, higher risk will command higher premium.

The main purpose of risk and return analysis is to appraise investment performance and to explore combinations of investments that maximize returns, minimize risk or achieve both. The risk minimization, in particular is not possible by holding only one asset or only one type of assets. What makes possible to minimize risk is the diversification of investments. Therefore, the analysis of risk of an investment in

isolation is not very meaningful for understanding the risk minimization process. Risk plays a central role in the analysis of investments. CBs or investors generally do not invest their money in only one risky asset. Instead they hold a portfolio of many assets with the hope of diversifying the investment risk. In the context of portfolio, the contribution of each asset to the portfolio risk is the portion of relevant risk of the asset.

The portfolio of assets usually offers the advantage of reducing risk through diversification. The standard deviation of the returns on the portfolio many be less than the sum of the standard deviation of the returns from the individual assets. The portfolio return is the straight weighted average of returns from the individual assets. But the portfolio risk is not the weight average of the variance of return of individual assets. The portfolio risk is affected by the variances of return as well as the covariance between the returns of individual assets included in the portfolio and their respective weights. In reality, one will find an asset held in the portfolio to be relatively less risky than when it is held in isolation. This is because when an asset is held in a portfolio, the unsystematic risk is totally or at least partly eliminated. Therefore, the portfolio standard deviation is not just the sum of variances of assets held in the portfolio.

4.2.1 Risk and return on securities

Governments often need to finance their expenditures by borrowing. To meet govt. expenditure, revenue surplus alone is not enough foreign grants as well as foreign and internal loans have to mobilize to meet such expenditures. Unlike business, govt. cannot sell equity shares. Hence, they increase their required fund from internal loan by issuing treasury bills, treasury bonds, development bonds, national saving bonds etc. CBs also invest their funds by purchasing such govt. securities.

The risk and return on govt. securities is calculated by dividing interest income on govt. securities by total investment on govt. securities which is shown in Table 4.9;

Return on securities (R_g) = $\dfrac{\text{Interest Income from securities}}{\text{Total Investment on govt. securities}}$

Average rate of return $\left(\overline{R_g} \right) = \dfrac{\sum_{t=1}^{n} R_g}{n}$

Risk on securities $\sigma_g = \sqrt{\dfrac{\sum\limits_{t=1}^{n}\left(R_g - \overline{R_g}\right)^2}{n-1}}$

Table 4.9

Calculation of risk and return on securities of Nepalese CBs

FY	Investment on Securities "000"	Interest Income on Securities "000"	Return on Securities (%) (R_g)	$\left(R_g - \overline{R_g}\right)^2$ (%)
2013/14	27747250	553818	2.00	0.044
2014/15	26556512	522789	1.97	0.058
2015/16	35066780	635645	1.81	0.16
2016/17	27123182	547761	2.02	0.036
2017/18	37322436	1208882	3.24	1.061
Total	153816160	3468895	11.04	1.199

Note*: Appendix1 (d) (h) and (l)

*$(2.00-2.21)^2 = 0.044$

Here, $\sum R_g = 11.04$ $\qquad$ n = 5

$\overline{R_g} = \dfrac{\sum R_g}{n} = 11.04/5 = 2.21$ $\qquad$ $\overline{R_g} = 2.21\%$

Now,

Standard deviation $\left(\sigma_g\right) = \sqrt{\dfrac{\sum\limits_{t=1}^{n}\left(R_g - \overline{R_g}\right)^2}{n-1}}$

$\left(\sigma_g\right) = 0.55\%$

Again,

Coefficient of Variation (CV) $= \dfrac{\sigma_g}{\overline{R_g}}$

Hence, C.V. g = 0.249

From table 4.9, it can be concluded that, in average the return on investment on securities made by CBs is 2.21%. Standard deviation is 0.55% which indicates risk on securities. In general concept there is no any risk on investment securities but the result of standard deviation and coefficient of variation shows there is risk on such securities. If the Treasury securities does not matches the length of the investors holding period with maturity date, No treasury securities qualifying as risk free assets. There is always presence of price risk and re-investment risk in all treasury securities if mismatch between maturity date and investor's holding period.

There is no fixed trend to invest on government securities such as treasury bills, national saving bonds, development bonds etc. by CBs its fund on treasury bills and the treasury bills are purchased directly at auction. Hence the returns on government securities are more volatility.

It is concluded that the higher variability of return on investment made on securities is due to lack of proper investment on various securities.

4.2.2 Risk and return on placement with banks and financial institutions

The risk and return on placement with banks and financial institutions can be calculated as follows;

Return on placement with B/F institution (R_l) = $\dfrac{\text{Interest income on loan and advances}}{\text{Investment on loan and advances}}$

Average return on placement with B/F institution $\left(\overline{R_l}\right) = \dfrac{\sum R_l}{n}$

Where,

n = No. of historical year

Standard deviation $(\sigma_l) = \dfrac{\sqrt{\sum \left(R_l - \overline{R_l}\right)^2}}{n}$

Coefficient of variation $(CV_l) = \dfrac{\sigma_l}{\overline{R_l}}$

Table 4.10
Calculation of risk and return on placement with banks and financial institution of Nepalese CBs

FY	Placement with B/F institution "000"	Interest Income Placement with B/F institution "000"	Return on Placement with B/F institution (%) (R_L)	$(R_L - \overline{R_L})^2$ (%)
2013/14	9557809	117082	1.22	0.346
2014/15	11389390	158086	1.39	0.174
2015/16	25068428	305759	1.22	0.346
2016/17	22155018	519135	2.34	0.283
2017/18	18368604	710623	2.87	1.128
Total	86536249	1810685	9.04	2.277

Note: Appendix1 (a) (e) and (i)

*= (1.22-1.808)²=0.346

Now, the average rate of return on loan and advances of CBs in Nepal is

$$\left(\overline{R_l}\right) = \frac{\sum R_l}{n}$$

=1.808%

Again,

$$\sigma_l = \sqrt{\frac{\sum \left(R_l - \overline{R_l}\right)^2}{n-1}}$$

=0.75%

$$CV_l = \frac{\sigma_l}{\overline{R_l}} \qquad =0.415$$

From table 4.10 reveals that the return on investment on placement with banks and financial institution has fixed trend. During the period 2013/14 to 2017/18 the highest return is 2.87% in 2017/18 and lowest return is 1.22% in 2013/14. The average return 1.808% means that in average the CBs generate 1.808% return. The standard deviation 0.75% and coefficient of variation 0.415 show the risk of return on placement in banks and financial institutions. The variability on return on placement with banks and financial institutions seems to be higher than return on securities.

4.2.3 Risk and return on loan and advance to banks and financial institutions

The risk and return on loan and advance to banks and financial institutions of the CBs can be calculated as follows;

Return on loan & advance to B/F institutions(R_s)

= $\dfrac{\text{Interest income on loan and advances}}{\text{Investment on loan and advances}}$

Risk on loan and advance to banks and financial institutions $\left(\sigma_s\right) = \sqrt{\frac{\left(R_s - \overline{R_s}\right)^2}{n-1}}$

Coefficient of variation $\left(CV_s\right) = \dfrac{\sigma_s}{\overline{R_s}}$

Table 4.11
Calculation of risk and return on loan and advance to banks and financial institutions of CBs

Fiscal year	Loan and Advance to B/F institution"000"	Return on Loan and advance to B/F institutions"000"	Return on loan and advance to B/F institution (%) R_s	$\left(R_s - \overline{R_s}\right)^2$ (%)
2013/14	16619647	596567	3.59	0.312
2014/15	20977105	770208	3.67	0.410
2015/16	23201645	812979	3.50	0.220
2016/17	7060009	135076	1.91	1.254
2017/18	8892454	220496	2.48	0.303
Total	76750860	2535326	15.15	2.499

Note: Appendix 1(b) &(f).

The average rate of return from Share and Debentures for CBs is;

$$\overline{R_s} = \frac{\sum R_s}{n}$$

=15.15/5   =3.03

Again,

$$\sigma_s = \sqrt{\frac{\sum \left(R_s - \overline{R_s}\right)^2}{n-1}}$$

=0.79%

Now,

$$CV_s = \frac{\sigma_s}{\overline{R_s}}$$

=0.79/3.03   =0.261

It can be observed from tables 4.11 that the annual rate of return on loan and advance to banks and financial institutions of CBs shows consistent ranging from 3.59   to 1.91.% .

The average rate of loan and advance to banks and financial institutions of CBs for five years during 2013/14 to 2017/18 is 3.03%. Similarly standard deviation 0.79% of loan and advance to banks and financial institution reflect more riskier then investment on securities and investment on placement with banks and financial institutions whereas C.V i.e. 0.261 reflect less riskier than that of placement with banks and financial institutions.

4.2.4 Risk and return on loan and advance to customers

Loan and advances are the main sources of CBs. The facility of granting loan and advances is one of the main services which customers of the CBs can enjoy. In order to realize their objectives CBs invest in various sectors like industry, service sector, agriculture, commercial sectors and other sectors.

The risk and return on loan and advance to customers is calculated by dividing interest income on loan and advance to customers by total investment on loan and advance which is shown below;

Return on govt. securities (Ro) = $\dfrac{\text{Interest on loan and advance to customers}}{\text{Total Investment on loan and advance to customers}}$

Average rate of return $\left(\overline{R_o}\right) = \dfrac{\sum_{t=1}^{n} R_o}{n}$

Risk on loan and advance to customers $\sigma_o = \sqrt{\dfrac{\sum_{t=1}^{n}\left(Ro - \overline{Ro}\right)^2}{n-1}}$

Table 4.12

Calculation of risk and return on loan and advance to customers of Nepalese CBs

FY	Investment on loan and advance to customers "000"	Interest Income on loan and advance to customers "000"	Return on loan and advance to customers (%)(Ro)	$(Ro - \overline{Ro})^2$ (%)
2013/14	137704891	8674368	6.30	2.465
2014/15	156914654	11124386	7.09	0.608
2015/16	182873500	12950566	7.08	0.624
2016/17	217547340	18610746	8.55	0.462
2017/18	252811470	26126367	10.33	6.052
Total	947851855	77486433	39.35	10.211

Note: Appendix1 (c), (g) and (k)

Here, $\sum R_o = 39.35 \quad n = 5$

$\overline{R_o} = \dfrac{\sum R_o}{n} = 39.35/5 = 7.87$

$\overline{R_o} = 7.87\%$

Now,

Standard deviation $\left(\sigma_g\right) = \sqrt{\dfrac{\sum_{t=1}^{n}\left(R_o - \overline{R_o}\right)^2}{n-1}}$

$\left(\sigma_o\right) = 1.60\%$

Again,

Coefficient of Variation (CV) = $\dfrac{\sigma_o}{R_o}$

Hence, $CV_o = 0.203$

From table 4.12, it can be concluded that, in average the return on loan and advance to customers made by CBs is 7.87%. Standard deviation is 1.60% which indicates risk on Loan and Advance to Customers.

4.2.5 Portfolio return on investment

The return of a portfolio depends on (i) the expected rate of return of each security contained in the portfolio and (ii) the amount invested in each security. The portfolio return is the weighted average expected return of the individual stock in the portfolio, with weights being the proportion of investment on each security in the portfolio equation. CBs invest their funds in securities, share and debenture, placement on banks and financial institutions, Other Investment and loan and advance. The weight of the investment on various assets and their average rate of returns are presented in Table 4.13.

Table 4.13
Calculation of weight of investment on various assets

S. No.	Assets	Investment Amount Rs. '000'	Proportion Weight (w)	Average Rate of Return (R)
1	Investment on Securities	153816160	0.12	2.21
2	Placement with B/F Institutions	86536249	0.07	1.808
3	Loan and Advance to B/F Institutions	76750860	0.06	3.03
4	Loan and Advance to Customers	947851855	0.75	7.87
	Total	1264955124	1	

Note: Appendix 1(a), (b), (c), (d) and Above Table

=153816160/1264955124   =0.12

Calculation of Portfolio Return $\left(R_p\right)$

$$R_p = \sum W \times R$$

=0.12x2.21%+0.07x1.808%+0.06x3.03%+0.75x7.87%

= 6.48%

Hence, Portfolio Return on Investment of CBs $\left(R_p\right) = 6.48\%$

4.3.6 Portfolio risk on investment

We measure the risk of a portfolio by the variance or standard deviation of the return of the portfolio. The riskiness of the portfolio expresses the extent to which the actual return may deviate from the expected return. However, its calculation is not as straight forward as the calculation of the expected return of portfolio. The portfolio risk is affected by the association of movement of returns of two securities. Hence, by combining the measures of individual asset risk, relative asset weights and the co-movement of assets returns (covariance) the risk of the portfolio can be estimated. Therefore before calculating portfolio risk on investment covariance between two assets return should be calculated.

Table 4.14

Calculation of correlation coefficient and covariance between various assets

S.N.	Combination of two assets	Covariance between two assets	Correlation between assets
1	Investment securities and Placement with B/F Institution	0.002904	0.825378
2	Investment securities and Loan & Advance to B/F Institutions	-0.00163	-0.44098
3	Investment securities and Loan & Advance to Customers	0.00006	0.8691
4	Placement with B/F Institution and Loan & Advance to B/F Institutions	-0.41062	-0.86033
5	Placement with B/F Institutions and Loan & Advance to Customers	0.009376	0.9722
6	Loan & Advance to B/F Institutions and Loan & Advance to Customers	-0.00773	-0.76467

Note: Appendix 2 and Above Page

Where,

Cov $(R_n, R_m) = \dfrac{\sum (R_n - \overline{R_n})(R_m - \overline{R_m})}{n-1}$

Corr. $(R_n, R_m) = \dfrac{Cov(R_n, R_m)}{\sigma_n \sigma_m}$

$Cov_{gl}, Cov_{gs}, Cov_{go}, Cov_{ls}, Cov_{lo}$ and Cov_{so} are the Co-variance between investment securities and placement with banks & financial institutions, investment securities and loan and advance to banks & financial institutions, investment securities and loan & advance to customers, placement with banks & financial institutions and loan & advance to banks and financial institutions, placement with

banks & financial institutions and loan & advance to customers and loan & advance to banks and financial institutions and loan and advance to customers.

The standard deviation of portfolio investment (σ_p) be

$$\sigma p = \sqrt{\begin{array}{l} Wg^2 \times \sigma g^2 + Wl^2 \times \sigma l^2 + Ws^2 \times \sigma s^2 + Wo^2 \times \sigma o^2 + 2Covgl \times WgWl + 2Covgs \times WgWs \\ + 2Covgo \times WgWo + 2Covls \times WlWs + 2Covlo \times WlWo + 2Covso \times WsWo \end{array}}$$

$= 1.20\%$

Hence, standard deviation of portfolio on investment of CBs $(\sigma_p) = 1.20\%$

Portfolio risk and return on investment made by CBs in various assets, which is calculated above is important to note that the expected risk of the portfolio is considerably less than the expected risk of investment on loan and advances to customers. Risk can be reduced by investing wealth in more than one asset. From the table 4.14 it can be concluded that correlation between Investment securities and Loan & Advance to B/F Institutions, Placement with B/F Institution and Loan & Advance to B/F Institutions, Loan & Advance to B/F Institutions and Loan & Advance to Customers are negatively correlated which refers there is negative relation between assets. Negative relationship between assets always tries to reduce the risk.

The expected return on portfolio 6.48% is more than average rate of return of all the individual investment. But investing the total funds in securities, loan and advances to banks and financial institutions and placement with banks and financial institutions is more risky than that of investment on portfolio.

4.3 Financial ratios related to portfolio management

An arithmetical relationship between two figures is ratio. In other words, the relationship between two accounting figures expressed in mathematical terms is known as financial ratios. A ratio is always calculated by dividing one item of the relationship with other. As a tool of financial analysis, ratio can be expressed in terms of %. Ratio analysis is a very important tool of financial analysis.

From the help of ratio analysis, the qualitative judgment can be done very easily and timely regarding financial performance of the firm. It establishes the significant relationship between the times of financial statements to provide a meaningful understanding of the performance and financial position of a firm. Ratio analysis serves as a stepping stone for an inter-firm comparison to take remedial measures. In this chapter only important ratios are analyzed.

4.3.1 Net Interest margin

The net interest margin is equal to how much net income or profit is generated as a percentage of revenue. Net profit margin is the ratio of net profits to revenues for a company or business segment. Net profit margin is typically expressed as a percentage but can also be represented in decimal form. The net profit margin illustrates how much of each dollar in revenue collected by a company translates into profit. It is computed as;

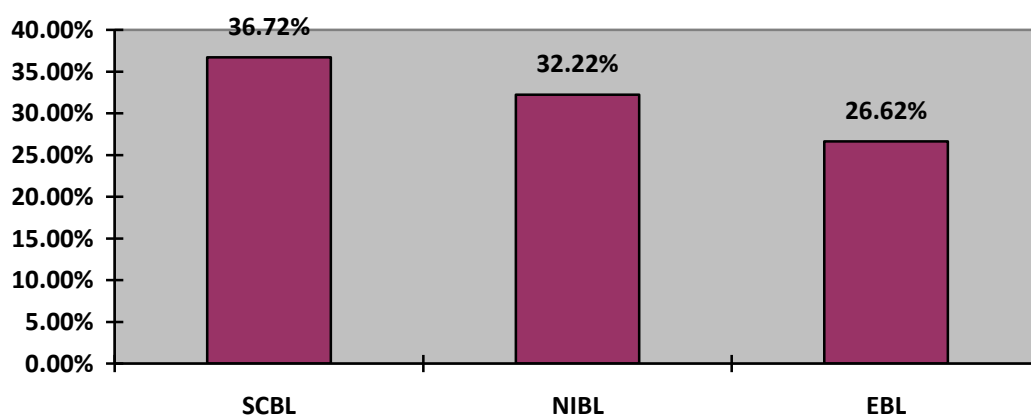<u>Net Profit</u>

Total Income

The ratio of Net profit to Total income of SCBL, NIBL, EBL are shown in table 4.15.

Table 4.15
Net profit to total income ratio (%)

FY	SCBL	NIBL	EBL
2013/14	36.73	27.80	26.63
2014/15	33.76	28.10	27.20
2015/16	34.46	31.00	29.75
2016/17	31.88	28.10	26.75
2017/18	46.79	46.10	22.75
Mean	36.72	32.22	26.62

Note: Annual Reports of Sampled Banks from FY 2013/14 to 2017/18

Figure 4.5
Net profit to total income ratio

From the comparative table 4.15 and figure 4.5 revealed that the ratio of net profit to total income of CBs are in consistent trend throughout the review period i.e. from the FY 2013/14 to 2017/18. The mean net profit to total income of SCBL is the highest at

the 36.72%. Similarly NIBL and EBL has second and third highest ratio of investment to total deposit with 32.22% and 26.62%.

From the point of view of average ratio it can be said that the SCBL financial position is better than others because its mean ratio is higher than average ratio of EBL and NIBL. Net profit margin is one of the most important indicators of a company's financial health. By tracking increases and decreases in its net profit margin, a company can assess whether current practices are working and forecast profits based on revenues.

4.3.2 Price earnings ratio

The price to earnings ratio (P/E ratio) is the ratio for valuing a company that measures its current share price relative to its per-share earnings. The price earnings ratio is also known as the price multiple or the earnings multiple.

P/E ratios are used by investors and analysts to determine the relatives value of a company's shares. It's can also be used to compare a company against its own historical record or to compare aggregate markets against one another or over time.

This can be stated as

$$\frac{\text{Market value per share}}{\text{Earnings per share}}$$

The table 4.16 shows the price earnings ratio of various CBs.

Table 4.16
Price earnings ratio (%)

FY	SCBL	NIBL	EBL
2013/14	42.75	23.60	30.58
2014/15	33.86	22.80	27.17
2015/16	78.33	35.50	83.94
2016/17	64.67	26.30	41.66
2017/18	27.62	17.40	20.23
Mean	49.45	25.12	40.72

Note: Annual Reports of Sampled Banks from FY 2013/14 to 2017/18

Figure 4.6
Price earnings ratio
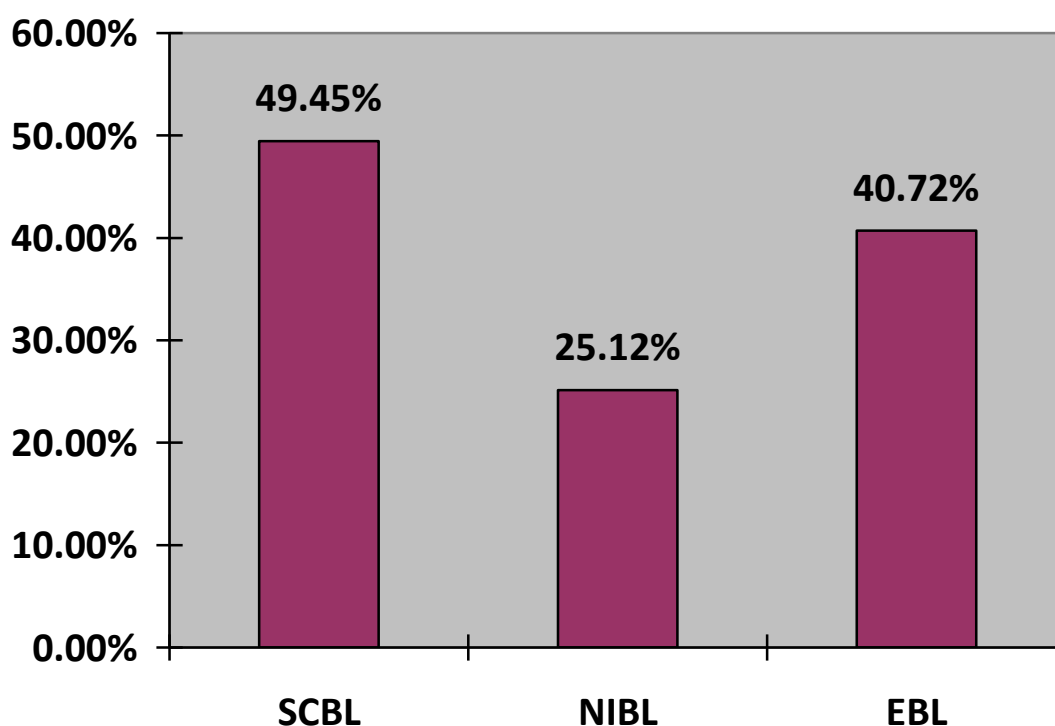
In table 4.16 and figure 4.6, the mean price earnings ratio of SCBL is highest i.e. 49.45% and NIBL is lowest ratio i.e. 25.12% among commercial banks. EBL have a mean ratio of 40.72%. It can be said that SCBL stock is overvalued and investors are expecting high growth rates in the future in comparison among three banks.

High price earnings ratio mean that a company's stock is overpriced or investors are expecting high growth rates in the future. thus it can be conclude that investors are expecting high growth rates of SCBL among three sampled banks because SCBL has the highest price earnings ratio.

4.3.3 Net profit to loan and advance

Net profit to loan and advance refers to the profit that is earned by lending deposit collection from customers and other financial institutions. This deposit is provided to needy customers and financial institutions through which banks earns higher returns then they provide to the depositors. This can be stated as
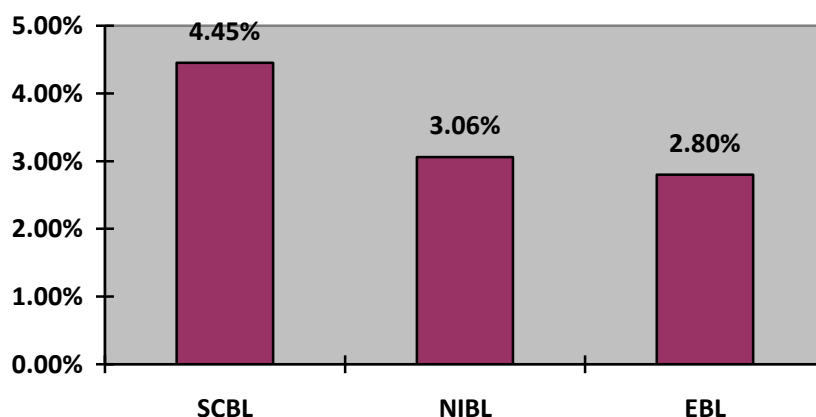
Net Profit
Loan and Advance

The table 4.17 shows the net profit to loan and advance ratio of various CBs.

Table 4.17
Net profit to loan and advance ratio (%)

FY	SCBL	NIBL	EBL
2013/14	5.08	3.6	3.20
2014/15	4.60	2.9	2.84
2015/16	4.08	2.9	2.57
2016/17	3.58	2.9	2.65
2017/18	4.91	3.0	2.71
Mean	4.45	3.06	2.80

Note: Annual Reports of Sampled Banks from FY 2013/14 to 2017/18

Figure 4.7
Net Profit to Loan and Advance Ratio

From table 4.17 and figure 4.7 revealed that the mean net profit to loan and advance of SCBL is highest i.e. 4.45% and EBL is lowest ratio i.e. 2.80% among three commercial banks. NIBL have mean ratios of 3.06%. It can be said that SCBL has invested its funds more effectively then NIBL and EBL.

4.3.4 Return on total assets

This ratio measures the effectiveness of the banks in using its overall resources. It measured in terms of relationship between net profit and total assets. The higher the ratio represents the efficient of the bank utilizing its overall resources and vice-versa. This ratio is calculated by dividing net profit after tax by total assets. This can be stated as

$$\frac{\text{Net Profit after Tax}}{\text{Total Assets}}$$

The table 4.18 shows the ratios of net profit after tax to total assets ratio of various CBs.

Table 4.18

Return on total assets (%)

FY	SCBL	NIBL	EBL
2013//14	2.51	2.3	2.25
2014/15	1.99	1.9	1.85
2015/16	1.98	2.0	1.59
2016/17	1.84	2.1	1.83
2017/18	2.61	2.1	1.97
Mean	2.19	2.08	1.90

Note: Annual Reports of Sampled Banks from FY 2013/14 to 2017/18

Figure 4.8
Return on Total Assets Ratio
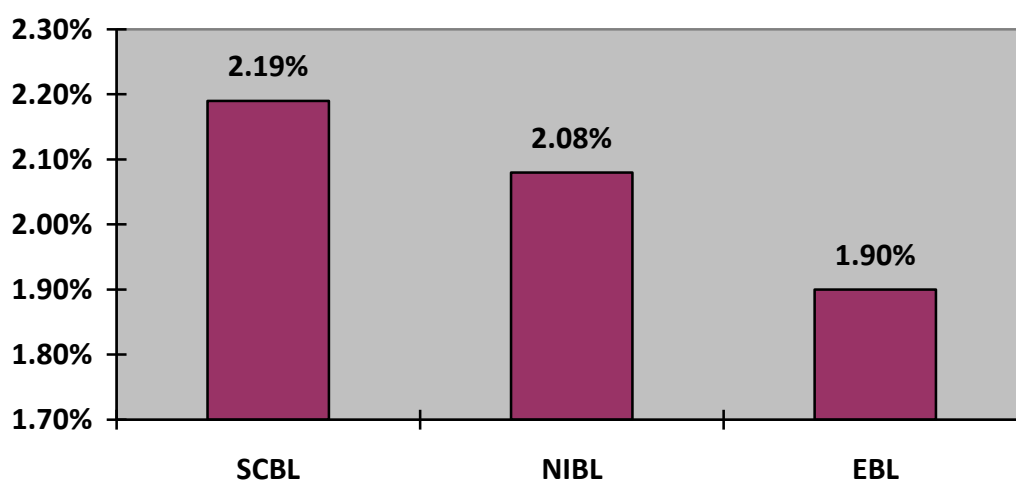
The comparative table 4.18 and figure 4.8 shows that commercial banks has mixed trend on their return to total assets ratio. Among three CBs, SCBL has the highest mean return and EBL has the lowest return on total assets i.e. 2.19% and 1.90%.However NIBL also have average mean of CBs i.e. 2.08%.

Lastly, it is concluded that SCBL is the best bank in relation to return on total assets ratio because it utilized overall resources efficiently than other banks. The profitability position of EBL is the weakest in relation to return on total assets during study period among three CBs.

4.3.5 Credit to deposit ratio

It is the ratio of how much a bank lends out of the total deposits it has mobilized. It indicates how much of a bank's core funds are being used for lending, the main banking activities. A higher ratio indicates more reliance on deposit for lending and vice-versa.

This ratio is calculated by dividing total credit by total deposit investment this can be stated as,

<p align="center">Total Credit</p>
<p align="center">Total Deposit</p>

The table 4.19 shows the ratios of total credit to total deposit ratio of various CBs.

Table 4.19

Total credit to total deposit ratio (%)

FY	SCBL	NIBL	EBL
2013/14	56.87	71.90	75.06
2014/15	48.92	72.80	69.47
2015/16	56.88	76.80	76.24
2016/17	62.20	77.60	76.94
2017/18	66.45	74.71	75.98
Mean	58.26	74.76	74.74

Note: Annual Reports of Sampled Banks from FY 2013/14 to 2017/18

Figure 4.9

Total Credit to Total Deposit Ratio
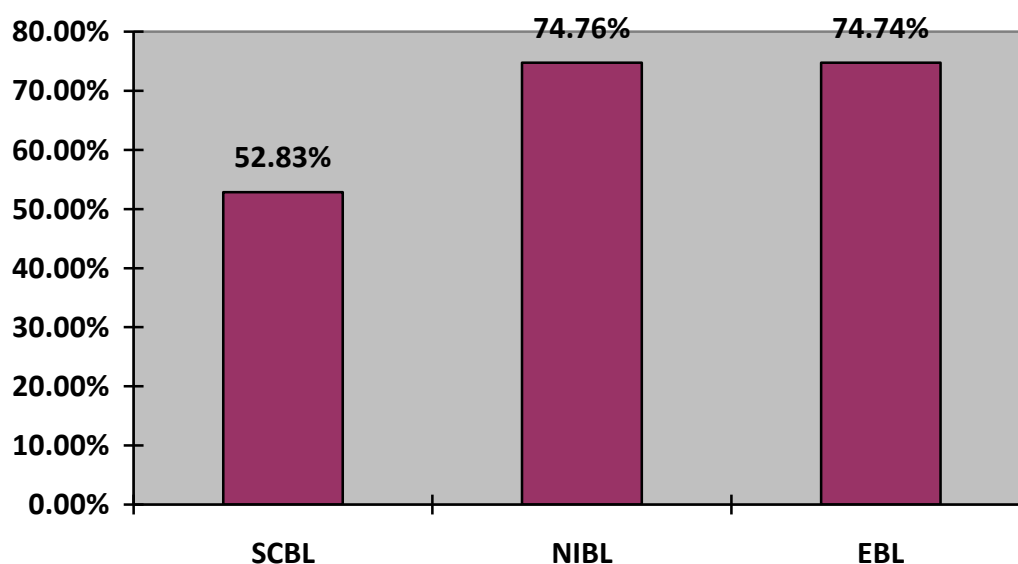
The table 4.19 and figure 4.9 shows that CBs has consistent trend on their total credit to total deposit.. Among commercial banks SCBL has higher total credit to total deposit ratio whereas EBL and NIBL are at same level of 74.74% and 74.76% respectively.

Lower the CD ratio indicates banks are utilizing its deposit to loan and advance which increase the profitability of banks. So, it is concluded that SCBL is more reliance on deposit for lending.

4.4 Major findings

Based on the analysis of the various data remarkable findings are drawn up. The major findings are as follows:

Investment portfolio

i. In investment portfolio, the industry average investment on securities is 12%, among the CBs, NIBL has invested the highest amount of funds on investment securities i.e. 42.78% and SCBL has invested lowest 23.14%, EBL have investing moderate amount of funds on securities among CBs i.e. 34.08%. Further SCBL have invested lowest amount of funds on placement with banks and financial institutions i.e.18.34%. The percentage of investment of NIBL and EBL is 49.80% and 31.86% respectively.

Loan and advances portfolio

i. In loan and advances to banks and financial institutions, the industry weight on portfolio of three banks is 7%, Among the CBs NIBL has invested the highest amount of funds i.e. 49.80% and SCBL has invested lowest 18.34%, and EBL has invested 31.86%.The loan and advance to customers weight on portfolio is 6%. SCBL is investing highest amount of funds among CBs i.e. 73.97% and NIBL and EBL are investing 10.53% and 15.50% respectively.

Portfolio risk and return on investment

i. The Correlation between investment securities and placement with banks & financial institutions, investment securities and loan and advance to banks & financial institutions, investment securities and loan & advance to customers, placement with banks & financial institutions and loan & advance to banks and financial institutions, placement with banks & financial institutions and loan & advance to customers and loan & advance to banks and financial institutions and loan and advance to customers are 0.825,-0.441,0.869,-

0.860,0.9722,-0.765. The correlation between placement with banks & financial institutions and loan & advance to customers is 0.9722 which indicates that there is higher degree of relation among the assets i.e. rational investor always try to choose other investment rather investing in this two assets at the same time.

ii.   According to the calculation, portfolio return is lesser than the individual return of investment securities and loan and advance to customers. And portfolio risk is less than the risk of loan and advance to customers i.e. 1.20% less than 1.60%. Similarly the risk of individual investment, investment securities, placement with banks and financial institutions, loan and advance to banks and financial institutions are less then portfolio risk i.e. 0.55%, 0.75% and 0.79%.

Risk and return

i.   The average return on investment on loan and advance to customers is 7.87% and its coefficient of variation is 0.2033 which is higher return among other investment and also lower risk than other investment.

ii.   In broad hypothesis, there is less risk on investment on loan and advance to customers but also low risk due to the consideration of similarity of year to year return on loan and advance to customers. CBs wants to invest in short term basis which return is not fixed because its return is resolute by demand and supply so return is volatile with demand and supply.

iii.   CBs weight of loan and advance to customers is higher i.e.75% this is due to higher return and lower risk in the investment.

iv.   The average rate of return of loan and advances is higher than the investment securities i.e. 7.87% .Lower CV indicates that return on loan and advances is less riskier. This might me due to fixed interest rate on L&A.

v.   The average return on loan and advance to banks and financial institutions of SCBL shows wide differences then that of NIBL and EBL this may be due placement in foreign market.

vi.   The average rate of return is low on placement with banks and financial institution considering the risks associated on it. The high degree of SD also indicate that the investments on placement with banks and financial institutions is more risky than that of investment on securities.

vii. Rate of return of portfolio is higher than the return of investments securities, placement with banks and institutions and loan and advance to banks and institutions. The portfolio risk is also higher than the risk of investment on securities, placement with banks & financial institutions and loan & advance to banks & financial institutions this indicate higher the risk higher the return.

Ratio analysis

i. The net interest margin of selected commercial banks state that SCBL has highest net interest margin i.e. 36.72 which indicates that the SCBL has higher performance among CBs. Similarly NIBL has moderate and EBL has the lowest financial performance among CBs.

ii. Price earnings ratio refers to a company's share price to its earnings per share. Higher P/E ratio mean that a company's stock is overvalued or else that investor are expecting high growth rates in future. Here the p/E ratio of SCBL is highest i.e. 49.45 which indicates the market price of SCBL is higher than that of NIBL and EBL. Higher P/E ratio also refers that the market price might be fall in coming future.

iii. The average net profit to loan and advance of SCBL, NIBL, and EBL are 4.45, 3.06, 2.80 respectively. SCBL has the highest net profit to loan and advance ratio it indicate that SCBL has managed its cash and deposit more effectively in comparison of three banks.

iv. The CD Ratio of SCBL, NIBL and EBL are 58.26, 74.76, 74.74 respectively. Lower the credit to deposit ratio indicates that bank is utilizing its deposit to loan and advance more effectively which ultimately increase the profitability of the banks. Here the credit to deposit ratio of SCBL is lowest that mean SCBL has managed its deposit effectively.

v. Overall ratio indicate that the SCBL performance in every sector is more efficient then NIBL and EBL.

CHAPTER- V
CONCLUSION

This chapter is an accomplished specific and indicative enclose which contains summary, major finding and conclusion of finding and recommendations. Brief introduction to all chapters of the study and genuine information of the present situation under the topic of the study is defined on summary. Conclusions and Findings are analysis of applicable data by using various financial and statistical tools, which presents strengths, weakness, opportunities and threats of the CBs. And suggestions are obtainable in recommendation, which is arranged on the based from finding and conclusions.

5.1 Discussion

As financial intermediary, the commercial banks also play an important role as implementing body for central bank. The monetary structure involves analysis of the behavior of banking system. The variation in the size and composition of bank assets play important role in transmitting the influence of monetary policy to the economy. The composition of bank portfolio, such as, reserve, investment and lending lead the money supply to vary.

Investment portfolio refers to an investment that combines several assets. Investment portfolio is one which the income or profit of the banks depend upon directly. Investment portfolio usually offers the advantage of reducing risk through diversification of risk from risky investment to less risky investment. The objective of portfolio is to develop a portfolio that has the maximum return at whatever level of risk. The investment portfolio is the tool which helps to reduce risk and maximize return. The banks should never invest its funds in those securities; difference may cause a great loss. The bank should accept that type of securities which are commercial, durable, marketable stable, transferable and high market price.

Generally the investment of the CBs include the investment on government securities, like treasury bills, development bonds, national saving bonds, foreign government securities, shares on government owned companies and non-government companies and investment on debentures, similarly the CBs used their funds as loan and advances. Most of the banks are interested to invest their funds in more liquid and less risky sector. Nepalese CBs don't have their own clear vision towards investment portfolio. The investment planning of the CBs 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. NRB's directives, unsecured climate created by political situation, government policy, and sluggish economic growth etc. are the most important problem for banking sectors in investment.

The researcher has tried to explore investment of CBs in various assets, portfolio management and risk return, risk and return on assets, relationship between various factors of CBs with various investment assets, performance of CBs towards investment for the study of 'Investment portfolio analysis of Nepalese CBs'. For the fulfillments of the objectives of the study many analysis has been done such as operation of CBs, investment and loan and advance portfolio, risk and return analysis, portfolio risk and return on investment, ratio analysis, trend analysis, portfolio performance test and hypothesis test. The study finding shows the similar result with the previous thesis that was conducted by Shrestha (2014) that the standard chartered bank have more return from investment securities and return on loan and advance to banks and financial institutions. And overall ratio of SCBL was better in his study which is similar to this study. For the analysis mainly secondary data are used, effort have been made to present current data   which is collected from concerned banks, NRB, NEPSE, SEBON and different library and different information also provided from there. Financial and statistical tools are used to reckoning and secondary data were compiled, processed, tabulated and graphed for better presentation from which various finding and conclusion have been drawn.

From the study it was found that investment portfolio weight set up by the CBs with directives given by the central banks, the banks have not followed the directives. Directives direct not to invest more than 50% in one sector but some banks have invested more than 90% of their funds into one sector. From investment portfolio analysis, it is accomplished that the CBs are given first priority to invest their funds in the govt. sector due to less risky and second priority given to the Other investment and last priority to the share and debentures of other companies.

5.2 Conclusions

Commercial banks have been operating efficiently and have been successful in becoming the pillars of economic system of the country. These banks are performing as financial intermediaries, which provided a links between borrowers and lenders by

mobilizing the scattered resources towards productive investments. It is not possible to achieve such goal without using portfolio concept on the investment strategies, which helps to reduce risk and increase return on investment. Most of the CBs are fascinated to invest their resources in more liquid and less risky sectors. CBs are unsuccessful to use the investment portfolio management to balanced investment opportunities.

From the analysis of risk and return of individual investment resources, it is conclude that the loan and advances to is much better than investment on securities and other investment. It is due to the fixed interest income on loan and advances. So that the CBs are eager to invest their maximum part of investment on loan and advances in different sectors due to return from loan and advances seems less explosive than other resources. The average rate of return on placement with banks and financial institutions is less than other investment so that the CBs are invested very low portion of resources into placement with banks and financial institutions. CBs are investing in loan and advance to customers which have the highest return in comparison to other investment. From the various ratios relating with the utilization of resources on investment it can be accomplished that SCBL is the bank which shows better performance on their investment strategies. While NIBL, EBL imitate moderate performance in utilization of overall resources.

From investment portfolio analysis, it is accomplished that the CBs are given first priority to invest their funds in the govt. sector due to less risky and second priority given to the Other investment and last priority to the share and debentures of other companies. And in the case of investment on loan and advances portfolio CBs are concentrated in the private sector due to high return from them and given second priority to Government enterprises followed by financial institution and bills P & D due to the less return from them. CBs flow their funds from higher level of return to lower level of return.

From the negative correlation coefficient between various investment assets, the CBs can reduce total risk at minimum level and increase profit at higher level. From the study it can be accomplished that CBs are not able to diversify their resources efficiently, which is proved by the financial performance test.

5.3 Implications

On the basis of the analysis, findings and conclusion, the following recommendations are suggested to overcome limitation, disorganization as well as exploit opportunities and to improve the present fund mobilization and investment portfolio of Nepalese CBs

i. In investment portfolio, except SCBL other two NIBL and EBL are focusing on investment securities for their investment as a result of various factors, among which the important ones are government policy and regulation framework of the central banks . Therefore, investment on securities should be decreased and investment on other investment should be increased where the return is higher with lower risk.

ii. The profitability position of EBL is the weakest in relation on return on assets. So, the bank should utilize its overall resources effectively to gain the peak profit margins.

iii. From the analysis of Net Interest Margin of CBs, SCBL has shown the better performance. Positive net interest margin indicates a banks invest effectively while a negative returns implies it does not invest efficiently.

iv. CBs always try to earn higher return with lower risk so CBs should focus on those kinds of securities which have negative correlation so that the portfolio risk can be minimized.

v. NIBL and EBL are not successful in better utilizing their Credit to Deposit ratio so that it is recommended that NIBL and EBL should try to mobilize its deposit to loan and advance effectively.

vi. Among the three CBs, SCBL is the most excellent bank which is utilizing the investment in various assets and its best position on ratio analysis. The lowest investment on L&A to customer of SCBL with higher return is insufficient . thus bank should increase its investment on loan and advance to customers.

vii. Nepalese CBs have not formulated investment policy in organized manner. They don't diversify the investment. Hence, CBs need to change their investment policy and investment in different sector not only high percentage on risk free assets but also on risky assets. From risky sectors there is a great opportunity for CBs to get higher return by using portfolio concept.

viii.   Portfolio condition of a bank should be regularly revised from time to time. It should always try to maintain the balance in the portfolio condition of the bank. Risk can be minimized by invest in more than one assets not on only one assets. CBs are not pretty booming to invest their funds in various assets. CBs are invest most of the funds on only L&A but lower part of their funds in govt. securities and S&D.

ix.   CBs are seems to be focusing on Investment on different assets class but they should be diversified their Lending portfolio and emphasis should be given to Small and Medium sized enterprises and Productive sector.

x.   Banking is the risky business, so risks cannot be eliminated it should be managed. In other to mitigate the risks CBs should evaluate the underlying risks of Investment and lending in qualitatively as well as quantitatively.

xi.   It is clear from the above study that some CBs are able to exploit portfolio management concept in the field of investment, which is not satisfactory to reduce risk and maximize return in the finest level. So that CBs should used portfolio management concept usefulness and extend opportunities for exercising the portfolio management in investment.

xii.   This result is basically from the SCBL, NIBL and EBL commercial banks of Nepal. Thus, the future study may include other commercial banks.

xiii.   The sample size and time period taken for the study is limited so future study can be conducted by taking large sample size for longer time period.

xiv.   This study is based only on secondary data and does not include the preference of different investors. Therefore, future studies can be conducted using primary data.

REFERENCES

Amling, R.C. (1994). *Investment analysis and management*. New Delhi: Mc Grew Hill International.

Aryal, R. D. (2016). *Portfolio analysis on common stock investment of joint venture banks in Nepal.* Unpublished Master's thesis, Central Department of Management, Tribhuvan University.

Bajracharaya, B.C. (2058). *Basic statistics,* Kathmandu: M.K. Publishers and Distributor.

Bawa, Vijay S., Edwin J. E., & Martin J.G. (1979). *Simple rules for optimal portfolio selection in stable pertain markets.* Journal of Finance, 34 (4):1041-1047

Berger, P.D., & Zvi B. (1985). *Optimal portfolio selection in a winner take all environments.* Journal of Finance, 34 (1): 233-236

Cheney, J.M., & Edward, A.M. (1995). *Fundamentals of investments*. St. Paul: West Publishing Company

Elton, E.J., & Martin, J.G. (2001). *Modern portfolio theory and investment analysis*. Singapore: John Wiley and Sons Inc.

Fisher, E.D., & Ronald, J.J. (2000). *Security analysis and portfolio management*. New Delhi: Prentice Hall of India Pvt. Ltd.

Francis, J.C. (2006). *Investment analysis and management*. New Delhi: Mc Grew Hill International.

Frank & Reilly. (2004). *Investment*. Chicago: The Dryden Press.

Gaumnitz, J.E., (1970). *Appraising performance of investment portfolio*. Journal of Finance, 25 (6): 555-560

Gitman, L.J. & Joehnk, (1990). *Fundamentals of investment*. New York: Mc-Grew Hill Publishing House

Gitman, L.J. (1988). *Principal of management finance*. San Diego: San Diego State University

Gupta, S.C. (1987). *Fundamentals of statistics*. Bombay: Himalayan Publishing House

Jones, M.B., (1999). *The sampling error in estimates of mean variance efficient portfolio weights.* Journal of Finance, 54(2):655-668

Kane, E.J., & Stephen A.B., (1979*). Portfolio diversification at commercial banks*. Journal of Finance, 34(3):19-31.

Kothari, C.R. (2004). *Research methodology method and techniques*. New Delhi: Vikas Publishing House Pvt. Ltd.

Mahandhar, M. (2010). *Analysis of risk and return on common stock investment of commercial banks in Nepal.* Unpublished Master's thesis. Central Department of Management, Tribhuvan University.

Mahat, L.D. (28 April 2015). *Efficient banking*. The Kathmandu Post. pp3-7

Markowitz, H.M., (1952). *Portfolio selection*. Journal of Finance, 40 (6): 77-91.

Martin, J.D., & Robert C.K. (1989). *The Effect of homogeneous stock grouping on portfolio risk*. Journal of Business, 49(2):239-246

Nepal Stock Exchange Ltd.(2016). *Trading report.* 03 – 2016.Kathmandu:NEPSE.

Pandey, I.M. (1997). *Financial management*. New Delhi: Vikas Publishing House Pvt. Ltd.

Paudyal, B. (2015). *A study on portfolio analysis of commercial banks in Nepal',* Unpublished Master's thesis, Central Department of Management, Tribhuvan University.

Pradhan, S. (2058). *Basics of financial management*, Kathmandu: Educational Enterprise Pvt. Ltd.

Shah, S. (2012). *Impact of interest rate structure on investment portfolio of commercial banks in Nepal,* Unpublished Master's thesis. Central Department of Management, Tribhuvan University.

Shrestha, J. (2016). *Investment Policy and Portfolio Management of NCC Bank Limited.* Unpublished Master's thesis, Central Department of Management, Tribhuvan University.

Shrestha, K. (2014). *A study on investment portfolio of commercial banks in Nepal.,* Unpublished Master's thesis. Central Department of Management, Tribhuvan University.

Shrestha, N. (2013). *Portfolio analysis of common stock of commercial banks of Nepal,* Unpublished Master's thesis. Central Department of Management, Tribhuvan University.

Shrestha, S. (1995). *Portfolio behavior of commercial banks in Nepal*. Kathmandu: Mandala Book Point

Shrestha, S.R. (2008). *Portfolio management in commercial banks, theory and practice.* Unpublished Master's thesis. Central Department of Management, Tribhuvan University.

Singh, P. (1998). *Investment management*. Bombay: Himalayan Publishing House

Thapa, C. (9th March 2014). *Managing Banking Risk.* The Kathmandu Post.

Van Horne, J.C., (1996). *Financial management and policy*. New Delhi: Prentice Hall of India Pvt. Ltd.

Weston, J. F., & Brigham. (1992). *Essentials of managerial finance*. Chicago: The Dryden Press

Weston, J. F., & Thomas E.C. (2003). *Managerial finance*. Chicago: The Dryden Press

Willian, F. S., Alexander, J. G., & Baily V. J. (2004). *Investment*. New Delhi: Prentice Hall of India Pvt. Ltd.

Wolff, H.K., and Pant, P.R., (2007). *Social science research and thesis writing*. Kathmandu: Buddha Academic Enterprises Pvt. Ltd.

Official Publications

Everest Bank Ltd.(2013-2018). *Annual report.* Kathmandu: EBL.

Nepal Investment Bank Ltd.(2013-2018).*Annual report.* Kathmandu: NIBL

Standard Chartered Bank Ltd.(2013-2018). *Annual report.* Kathmandu: SCBL.

APPENDICES

Appendix - 1

Arrangement & Tabulation of Available Financial Data of Various CBs

a) Placement with banks and financial institutions

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	1712084	1921006	5924719	9557809
2014/15	1478690	2661271	7246429	11389390
2015/16	1658294	15649009	7761125	25068428
2016/17	6190800	12613468	3350750	22155018
2017/18	4831200	10246404	3291000	18368604
Total	15871068	43091158	27574023	86536249
Average	3174214	8618232	5514805	17307250

b) Loan and advance with banks and financial institutions

(Rs. In 000)

FY	SCBL	NIBL	EBL	CBs
2013/14	14961837	897468	760342	16619647
2014/15	19122619	1023643	830843	20977105
2015/16	18950461	1496951	2754233	23201645
2016/17	1610449	2158458	3291102	7060009
2017/18	2134850	2502926	4254678	8892454
Total	56780216	8079446	11891198	76750860
Average	11356043	1615889	2378240	15350172

c) Loan and advance to customers

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	26112494	52019765	59572632	137704891
2014/15	27815970	66219232	62879452	156914654
2015/16	31496116	84608804	66768580	182873500
2016/17	38433668	103418050	75695622	217547340
2017/18	44561330	118322570	89927570	252811470
Total	16841958	424588421	354843856	947851855
Average	33683916	84917684	70968771	189570371

d) Investment on securities

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	9391379	8383529	9972342	27747250
2014/15	5976993	10141904	10437615	26556512
2015/16	10213822	15767779	9085179	35066780
2016/17	4810675	14659802	7652705	27123182
2017/18	4660993	17369129	15292314	37322436
Total	35053862	66322143	52440155	153816160
Average	7010772	13264429	10488031	30763232

e) Interest on placement with banks and financial institutions

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	34926	21131	61025	117082
2014/15	42734	28742	86610	158086
2015/16	44608	174515	86636	305759
2016/17	269919	168922	80294	519135
2017/18	361801	245420	103402	710623
Total	753988	638730	417967	1810685
Average	150798	127746	83594	362137

f) Interest income on loan and advance to B/F institutions

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	593985	1974	608	596567
2014/15	767284	1843	1081	770208
2015/16	805534	2395	5050	812979
2016/17	102747	12489	19840	135076
2017/18	169301	3768	47427	220496
Total	2438851	22469	74006	2535326
Average	487770	4494	14801	507065

g) Interest income on loan and advance to customers

(Rs. in '000')

FY	SCBL	NIBL	EBL	CBs
2013/14	1658143	3251235	3764990	8674368
2014/15	2451292	4403579	4269515	11124386
2015/16	2197513	5998764	4754289	12950566
2016/17	3289922	8955619	6365205	18610746
2017/18	4210138	12622392	9293837	26126367
Total	13807008	35231589	28447836	77486433
Average	2761402	7046318	5689567	15497287

h) Interest income on securities

<div align="right">(Rs. in '000')</div>

FY	SCBL	NIBL	EBL	CBs
2013/14	184071	164317	205430	553818
2014/15	127908	208923	185958	522789
2015/16	213469	274359	147817	635645
2016/17	128445	208549	210767	547761
2017/18	164021	549156	495705	1208882
Total	817914	1405304	1245677	3468895
Average	163583	281061	249135	693779

i) Return on placement with banks and financial institutions

FY	SCBL	NIBL	EBL	CBs
2013/14	2.04%	1.10%	1.03%	1.22
2014/15	2.89%	1.08%	1.20%	1.39
2015/16	2.69%	1.12%	1.12%	1.22
2016/17	4.36%	1.34%	2.40%	2.34
2017/18	7.49%	2.40%	3.14%	2.87
Total	19.47%	7.04%	8.89%	9.04
Mean	3.89%	1.41%	1.78%	1.808
S.D	2.18%	0.56%	0.94%	0.75
C.V	0.560	0.397	0.528	0.415

j) Return on loans and advances to banks and financial institutions

FY	SCBL	NIBL	EBL	CBs
2013/14	3.97%	0.22%	0.08%	3.59
2014/15	4.01%	0.18%	0.13%	3.67
2015/16	4.25%	0.16%	0.18%	3.50
2016/17	6.38%	0.58%	0.60%	1.91
2017/18	7.93%	0.15%	1.11%	2.48
Total	26.54%	1.29%	2.1%	15.15
Mean	5.31%	0.26%	0.42%	3.03
S.D	1.78%	0.18%	0.44%	0.79
C.V	0.335	0.692	1.05	0.261

k) Return on loan and advance to customers

FY	SCBL	NIBL	EBL	CBs
2013/14	6.35%	6.25%	6.32%	6.30%
2014/15	8.81%	6.65%	6.79%	7.09%
2015/16	6.98%	7.09%	7.12%	7.08%
2016/17	8.56%	8.66%	8.41%	8.55%
2017/18	9.45%	10.67%	10.33%	10.33%
Total	40.15%	39.32%	38.97%	39.35%
Mean	8.03%	7.86%	7.79%	7.87%
S.D	1.31%	1.82%	1.62%	1.60%
C.V	0.163	0.232	0.208	0.203

l) Return on investment securities

FY	SCBL	NIBL	EBL	CBs
2013/14	1.96%	1.96%	2.06%	2.00%
2014/15	2.14%	2.05%	1.78%	1.97%
2015/16	2.09%	1.74%	1.63%	1.81%
2016/17	2.67%	1.42%	2.75%	2.02%
2017/18	3.52%	3.16%	3.24%	3.24%
Total	12.38%	10.33%	11.46%	11.04%
Mean	2.48%	2.07%	2.29%	2.21%
S.D	0.65%	0.66%	0.68%	0.55%
C.V	0.262	0.319	0.297	0.249

Appendix – 2

Calculation of Covariance between Various Investment Securities of CBs

Year	Return on Investment Securities (R_g)	Return on Placement with Banks & Financial Institutions (R_l)	Return on Loan & Advances to Banks and Financial Institutions (R_s)	Return on Loan and Advance to Customers (Ro)
2013/14	2.00%	1.22	3.59	6.30%
2014/15	1.97%	1.39	3.67	7.09%
2015/16	1.81%	1.22	3.50	7.08%
2016/17	2.02%	2.34	1.91	8.55%
2017/18	3.24%	2.87	2.48	10.33%
Total	11.04%	9.04	15.15	39.35%
Mean	2.21%	1.808	3.03	7.87%
SD	0.55%	0.75	0.79	1.60%

Co-variance and Correlation between two assets are determined using the following formula.

$$\# \ Cov \ (R_n, R_m) = \frac{\sum (R_n - \overline{R_n}) (R_m - \overline{R_m})}{n - 1}$$

$$\# \ Corr. \ (R_n, R_m) = \frac{Cov(R_n, R_m)}{\sigma_n \sigma_m}$$

S.N.	Combination of two assets	Covariance between two assets	Correlation between assets
1	Investment securities and Placement with B/F Institution	0.002904	0.825378
2	Investment securities and Loan & Advance to B/F Institutions	-0.00163	-0.44098
3	Investment securities and Loan & Advance to Customers	0.00006	0.8691
4	Placement with B/F Institution and Loan & Advance to B/F Institutions	-0.41062	-0.86033
5	Placement with B/F Institutions and Loan & Advance to Customers	0.009376	0.9722
6	Loan & Advance to B/F Institutions and Loan & Advance to Customers	-0.00773	-0.76467