CHAPTER: 1
INTRODUCTION

1.1 Background of the study

The health of the financial system has important role in the country (Das & Ghosh, 2007) as its failure can disrupt economic development of the country. Financial performance is company's ability to generate new resources, from day-to-day operation over a given period of time and it is gauged by net income and cash from operation. The financial performance measure can be divided into traditional measures and market based measures (2008). During the 1980's and 1990's when the financial and banking crises became worldwide, new risk management banking techniques emerged. To be able to manage the different types of risk one has to define them before on can manage them. The risks that are most applicable to banks risk are: credit risk, interest rate risk, liquidity risk, market risk, foreign exchange risk and solvency risk.

Risk management is the human activity which integrates recognition of risk, risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources (1996) whereas credit risk is the risk of loss due to debtor's non-payment of a loan or other line of credit (either the principal or interest or both) (Campbell, 2007). Default rate is the possibility that a borrower will default, by failing to repay principal and interest in a timely manner. A bank is a commercial or state institution that provides financial services, including issuing money in various forms, receiving deposits of money, lending money and processing transactions and the creating of credit (Campbell, 2007). Credit risk management is very important to banks as it is an integral part of the loan process. It maximizes bank risk, adjusted risk rate of return by maintaining credit risk exposure with view to shielding the bank from the adverse effects of credit risk. Bank is investing a lot of funds in credit risk management modeling. (2016)

Banking is the fundamental and very important basis of economic Development and growth in modern age. There is no idea regarding the starting of banking system. The origin of banking system can be traced to the origin of authentic history. The priest of Greek temples carried on a thriving business of safe keeping and lending, centuries before the evolution of modern banking. Modern banks have developed from very small beginning. The earlier bankers were goldsmith who dealt in precious metals and

as such had to arrange for the safety of their treasure. People with surplus gold or money gradually began to deposit there precious metal with such persons since everyone believed in the integrity and ability of these goldsmiths to hone our receipts issued. The receipts gradually began to pass from one hand to another hand in discharge of obligations. These receipts thus began to circulate as bank notes. The goldsmiths gradually care to know from experience that only a small proportion of precious metal deposited with them was withdrawn by the depositors. They could thus safely lend out a part of these deposits to others. The credit policy decision of a bank has two broad dimensions; credit standards and credit analysis. A firm has to establish and use standards in making credit decision, develop appropriate sources of credit and methods of credit analysis. In this way bank plays an important part in the development of trade, commerce and industry.

Banks are financial institutions that are established for lending, borrowing, issuing, exchanging, taking deposits, safeguarding or handling money under the laws and guidelines of a respective country. Among their activities, credit provision is the main product which banks provide to potential business entrepreneurs as a main source of generating income. The importance of strong credit management for building quality loan portfolio is of paramount importance to robust performance of commercial banks as well as the overall economy.

While providing credit as a main source of generating income, banks take into account many considerations as a factor of credit management, which helps them to minimize the risk of default that results in financial distress and bankruptcy. This is due to the reason that while banks provide credit they are exposed to risk of default (risk of interest and principal repayment) which need to be managed effectively to acquire the required level of loan growth and performance . The types and degree of risks to which banks are exposed depends upon a number of factors such as its size, complexity of the business activities, volume etc. It is believed that generally banks face Credit, Market, and Liquidity (Malla, 2017)

Lending is the principal business activity for most commercial banks. The loan portfolio is typically the largest asset and the predominate source of revenue. As such, it is one of the greatest sources of risk to a bank’s safety and soundness. Whether due to lax credit standards, poor portfolio risk management, or weakness in the economy,

loan portfolio problems have historically been the major cause of bank losses and failures (Comptrollers of the Currency Administrator of National, 1998).

History shows that the major cause of bank's failure is lack of proper credit risk management. Credit risk comes from a bank's dealing with individuals, corporate, banks and financial institutions (BAFI) or a sovereign. It does not necessarily occur in isolation. The same source that compromise credit risk for the bank may also expose it to other risks like operation risk, market risk, liquidity risk etc. A bad portfolio may attract liquidity problem. The soundness and safety of bank is determined by effective credit risk management adopted by bank.

Globally more than 50% of total risk in BAFI is derived from poor credit management. Credit risk has been the headline from last few years in Nepal. Many BAFI have been failed due to the credit risk. Nepal Development Bank Limited, Samjhana Finance Limited, United Bikash Bank Limited and Himalayan Finance Limited has been liquidated due to huge non-performing loans. Still there are 11 problematic BAFI as on mid July 2016 due to credit problem

The source of finance is the most essential element for the establishment and operation of any profit and not profits institutions. Profit oriented institutions usually obtain these sources through ownership capital, public capital through the issued shares, and through the financial institutions such as banks, in the form of credit, overdrafts and other related services.

Banks are major institutions in financing. Bank involves in a process of collecting scattered money and to help its mobilization in different sectors according to the need of customers. Bank helps to develop saving habit of people, which in turns help to make other people to invest for their business. Banking loan helps to invest in.

1.1.1 Nepal Bank Limited

Nepal bank limited, the first bank of Nepal was established in November 15, 1937A.D (kartik, 30 1994). It was formed under the principle of joint venture (joint venture between government &general public). Nepal bank limited authorized capital was RS. 10 million &issued capital RS. 2.5 million of which paid of capital was RS. 842 thousand with 10 shareholders. The bank has been providing banking through its branch offices in different geographical location of the country. Ownership is 51

percent Government of Nepal 49 percent General public. Total branch of Nepal bank limited was 175 Number of staff 2297 (As of August17, 2019).

1.1.2 Standard Chartered Bank Nepal Limited

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.

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, 23 ATMs across the country and with more than 450 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.

1.1.3 Mega Bank Limited

With an Authorized Capital of NPR 11.50 Billion, Issued Capital of NPR 10.57 Billion and Paid-Up Capital of NPR 10.38 Billion, Mega Bank Nepal Limited is one of the premier Financial Institution of Nepal consistently living it's Service Pledge to conduct business by continually creating mutually beneficial relationship with all its stakeholders; Customers, Shareholders, Regulators, Communities and Staff. The Bank realizes that its success is directly correlated with the pace at which it fosters its relationship with its stakeholders, so that in every step of its journey, both parties benefit, succeed and grow together.

Following the completion of all regulatory requirements, Nepal Rastra Bank had issued Mega Bank its Operating License on 4th Shrawan, 2067 B.S. and the Bank

commenced its operations form 7th Shrawan 2067. Now, the Bank having completed nine years of operations is on its way to realizing the aspirations of 2,396 Promoters who comprise primarily from middle class families spread over more than 63 Districts of Nepal. The Promoters held the vision to establish a national level Class "A" Commercial Bank, which was made a reality by an experienced and able Management Team and staff members driven by a mission to provide Banking Services to the entire economic strata of the Nepalese society from "Halo to Hydro"

1.2 Statement of the problem & Research Questions

Choosing a research question is the central elements of both qualitative and quantitative research and in some cases it may precede construction of the conceptual frame work of the study (Karlinger, 1986). The major problem in almost all under development countries and Nepal is no exception than that of capital formation and proper utilization. Credit management is the main problem of commercial banks of developing countries. There are many financial institutions in Nepal. Some of them are even providing loans for infrastructural development, energy sector development. Commercial banks in Nepal have been facing various challenges and problems. Some of them are arising due to the economic condition of the country, some of them are arising due to confused policy of government and many of them are arising due to default borrowers. After liberalization of economy, banking sector has various opportunity

However, the financial institutions are increasing regularly. Financial institutions have liquidity problem due to the lack of credit management. Hence, the banks and financial institutions are competing among themselves to advance credit to limited opportunity sectors. Banks and financial institutions are investing in house loan, hire purchase loan for safety purpose. Due to lack of good lending opportunities, banks are facing problems of high liquidity. Nowadays, banks have increasing number of deposits in fixed and saving accounts but have decreasing trend in lending behaviors. So, this has caused major problems in commercial banks. Nowadays, due to competition among banks, the interest rate charge for loan is in decreasing trend. Due to unhealthy competition among banks, the recovery of the bank’s credit is going towards negative trends

The research being proposed has find answer to the following major questions

1. What are the indicators of the credit risk management?

2. What are the indicator of banks financial performance (profitability)?

3. Does the credit risk management effects on banks financial performance (profitability)?

1.3 Purpose of the study

It is no doubt that the role of commercial banks is significant in development of the country. Banks help in development of the country by providing credit to the necessary sectors. Therefore, the main objective of this study is to find out credit management position of commercial banks. The specifics objectives of the study are as follows:

1. To examine the impact of the credit risk management indicators on capital adequacy ratio and leverage ratio.

2. To identify indicator of banks financial performance (profitability) during the period (2013-2018).

3. To examine impact of the credit risk management on banks financial performance (profitability).

1.4 Significance of the study

The study will be mainly significant to the shareholders, depositors and other creditors to identify the productivity of their funds in the sampled banks. Likewise other financial agencies, e.g. stock exchange and stock brokers are also interest in the performance of bank, as it has been listed in the stock exchange market. Besides them, the study will also help the management of he banks to analyze the effectiveness of its credit management and policies of the bank in comparison to competitors. The study will also be equally significant to the central bank to formulated the new credit policy, as there are certain loopholes as a result of which the non-performing assets has been regarded as the main problem of the commercial banks in these days.

1.5 Limitations of the study

Complete this research we follow the different books, journals, articles, and dissertations. The reliability of the study is based on those things

1. This study covers only three commercial banks (as follows NEPAL BANK LIMITED, STANDARD CHARTERED BANK LIMITED, MEGA BANK LIMITED) to study. It has been assumed that these banks represent all Nepalese commercial banks.

2. This study concentrates only on impact of credit risk management of selected commercial banks.

3. The secondary data will be about 5 years period only i.e. from fiscal year 2070 to 2075.

4. The reliability of the secondary data depends on the accuracy of the annual reports, while that of primary data depends on the responses of respondents.

5.In this study only selected financial and statistical tools as well as techniques are used.

1.6 Chapter plan

A chapter plan is an outlines that helps us to organized material in a way that is easy to comprehend. It can be a very useful tool in helping to find the main points of the chapter. This report has been divided into five chapter.

Chapter i: introduction

Chapter one is gives detail about the study area and the concept note about the research problem under study. It includes background of the study. Limitation and the conceptual frame work.

Chapter ii: Literature Review

Review of literature gives the investigator a through and profound knowledge of the research topic. It provides guidelines to use statistical methods of collected data

Chapter iii: Methodology

This chapter discuss in details the research methodology applied in the context of this study. It includes research design, data, sources, variable, population, sample and sampling techniques and plan for data analysis.

Chapter iv: Results

Data analysis includes tabulation coding and classification of the data gathered in accordance with the research design to perform quantitative and qualitative analysis the detail about the analysis and interpretation of the finding are described here.

Chapter v: Discussion, Conclusion & implementation

This chapter present the brief background of the study, objectives, literature review and methodologies. Major findings are summarized conclusion includes theorization based on findings and finally the recommendations based on those findings are stated.

CHAPTER: 2

LITERATURE REVIEW

2.1 Conceptual review

Credit management policy is defined as the rules and guidelines established by top management that governs the company's credit department audits performance in the extension of credit privileges Jim (2010). It is simply a set of guidelines designed to minimize costs associated with credit while maximizing benefits from it (1996). Credit management policies entail the credit procedures, credit standards and credit terms

To achieve the good goals of credit management policy (2010) advised the adoption use of credit procedures. To Franklin, credit procedures are specific ways in which top management requires the credit department to achieve the credit management policies. The credit procedures include instructions on what data to be used for credit investigation and analysis process, provide information for data approval process, account supervision and instances requiring management's notification.

The review of the literature is critical aspect of planning of the study. The main purpose of literature review is to find out what work have been done in the area of the research problem under study and what has not been done in the field of the research study being undertaken. The researcher has received different reports, journals and research studies published by various institutions and unpublished dissertations submitted by master level students have also been reviewed.

This study has been necessitated by the continued challenge of the deteriorating levels of credit risks and nonperforming loans to the global financial system. Many stakeholders including the regulators take great interest in the performance of credit facilities granted to borrowers through commercial banks. A well-functioning banking sector with acceptable levels of credit risk translates into better bank performance and ultimately a stronger economy. When commercial banks' performance is strong, the general economy is exposed to huge economic and infrastructural developments. Employment opportunities are also created, and all these factors make regulators and other policy makers sufficiently interested in the performance of the financial system. The literature review provides a comprehensive analysis of the past studies that touch on the key variables that explains the relationship between credit risk administration

and performance of commercial banks. It also attempts to interrogate the effect of NPLs and the macroeconomic factors on that relationship. There are numerous measures of bank performance, but this study recommends the use of the CAMELs financial rating model which many studies have also recognized. The study dissects the numerous theories that have tried to explain the key variables that explain the hypothesized relationship.

In-depth empirical literature review of the past studies by other researchers especially touching of the key variables of this study has been done. This helped in the identification of the research gaps and future areas that deserve more study. Of great interest is the introduction of two important variables that have an impact on the relationship. These are the Non-Performing Loans as an intervening variable and macroeconomic factors as the moderating variables. These two important variables have enriched the study and have tested the limits of the hypothesized relationship under review. Most of the studies relied on data collected or secondary data and interpretation was carried out using analytical and logical reasoning to determine patterns, relationships or trends. Most of the findings and observations helped in coming up with the summary, conclusions and recommendations that have been useful in many jurisdictions.

Credit administration involves the creation and management of the assets. The process of lending takes into consideration the people and system required for the evaluation and approval of loan requests, negotiation of terms, documentation, disbursement, administration of outstanding loans and workouts, knowledge of the process and awareness of its strength and weakness are important in setting objectives and goals for lending activities and for allocating available funds to various lending functions such as commercial, installment and mortgage portfolios in his article “Monetary Policy and Deposit Mobilization in Nepal” has concluded that mobilization of domestic saving is one of the prime objectives of the monetary policy in Nepal. And commercial banks are the most active financial intermediary for generating resources in the firm of deposit of private sector and providing credit to the investors in different sectors of the economy.

2.2 Review of previous work

Literature reviews are secondary sources and as such, do not report any new or original experimental work. This chapter will give explanation about credits, their management, various relations, theories and models, affecting factors in Nepal's economic perspective. It includes citations from various books, journals, thesis relevant to this thesis topic.

Commercial bank is a corporation which accepts demand deposit subject to check and makes short term loans to business enterprise regardless of the scope of its other services a commercial bank is a dealer in money and substitute for money such as cheque or bill of exchange. He also provides a variety of financial services.

Financial activities are necessary for the economic development of the country and commercial banking in this context is heart of financial system. Optimal investment decision plays a vital role in each every organization. But especially for the commercial banks and other financial institution the sound knowledge of investment is the must because this subject is relevant for all surrounding that mobilize funds in different sectors in view of return

2.2.1 Review of journal articles

In commercial lending, commercial banking plays a dominant role (Allen & Gale, 2004). In many countries, commercial banks routinely perform investment banking activities by providing new debt to their customers. The credit creation process works smoothly when funds are transferred from ultimate savers to borrower. There are many potential sources of risk, including liquidity risk, credit risk, interest rate risk, market risk, foreign exchange risk and political risks. However, credit risk is the biggest risk faced by banks and financial intermediaries. The indicators of credit risk include the level of bad loans (Non- performing loans), problem loans or provision for loan losses. Credit risk is the risk that a loan which has been granted by a bank, will not be either partially repaid on time or fully, and where there is a risk of customer or counterparty default.

Prior to financial sector deregulation, banks were highly motivated to grant credit facility to clients who could easily express their creditworthiness. Deregulation offered the opportunity to meet the demands for credit across a wide range of

borrowers. Large amount of bad credit, as a result of boom-time advances in the 1980's, caused the banks to be too cautions in extending credit. Credit risk management processes enforce the banks to establish a clear process in for approving new credit as well as for the extension to existing credit. These processes also follow monitoring with particular care, and other appropriate steps are taken to control or mitigate the risk of connected lending (Basel, 1999). Credit granting procedure and control systems are necessary for the assessment of loan application, which then guarantees a bank's total loan portfolio as per the bank's overall integrity.

It is necessary to establish a proper credit risk environment, sound credit granting processes, appropriate credit administration, measurement, monitoring and control over credit risk, policy and strategies that clearly summarize the scope and allocation of bank credit facilities as well as the approach in which a credit portfolio is managed i.e. how loans are originated, appraised, supervised and collected, a basic element for effective credit risk management (Basel, 1999). Credit scoring procedures, assessment of negative events

The probabilities, and the consequent losses given these negative migrations or default events, are all important factors involved in credit risk management systems. Most studies have been inclined to focus on the problems of developing an effective method for the disposal of these bad debts, rather than for the provision of a regulatory and legal framework for their prevention and control. According to risk management technology has been renovated over the last decade. The swiftness of information flow and the complexity of the international financial markets qualify banks to recognize, evaluate, manage and mitigate risk in a way that was just not possible ten years ago. The most current credit modelling software in place is Basel II Accord. This accord has positively been a substance in leading the drive towards building applicable credit risk modelling and capital adequacy requirements. Banks will have to decide what their risk enthusiasm is, how to assign their resources optimally and how to compete in market.

Generally in competitive market, a bank trade off the risk which allows much more competent risk transfer and portfolio optimization. However, for all these activities, banks must have a good knowledge about risk management, pricing of loan on competitive market, marginal risk adjusted contribution, monitoring of economic

capital. The banks very frequently suffer from poor lending practice. Monitoring, and other appropriate steps, are necessary to control or mitigate the risk of connected lending when it goes to companies or individuals (Basel, 1999). Therefore, the Nepal Rastra Bank (NRB) i.e. central bank, has issued guidelines which attention to general principles that are prepared for governing the implementation of more detailed lending procedures and practices within the banks.

The NRB has issued some criteria, such as the credit assessment of borrowers (macro-economic factors and firm specific analysis), the purpose of credit, track records, repayment capacity, liquidity status of collateral for new credit, as well as the renewal and expansion of existing credit (NRB, 2010). It is mandatory for a bank to prepare Credit Policies Guidelines (CPG) for making investment and lending decisions and which reflect a bank tolerance for credit risk. Prior to consent to a credit facility, the bank should make an assessment of risk profile of its customers, such as of their business, and which can be done through the credit procedure (NRB, 2010). & Wolf (2007) studied the credit risk management policies for ten banks in the United States and found that advance credit risk management techniques (proxies by at least one collateralized loan) help permanent to achieve their target in loan level. The findings confirm the general efficiency- enhancing implications of new risk management techniques in a world with frictions suggested in the theoretical literature.

The study conducted by Macaulay (1988) in the United States and found credit risk management is best practice in bank and above 90% of the bank in country have adopted the best practice. Inadequate credit policies are still the main source of serious problem in the banking industry as result effective credit risk management has gained an increased focus in recent years. The main role of an effective credit risk management policy must be to maximize a bank’s risk adjusted rate of return by maintaining credit exposure within acceptable limits. Moreover, banks need to manage credit risk in the entire portfolio as well as the risk in individual credits transactions.

Private Banks are more serious to implement effective credit risk management practice than state owned banks. A study conducted by of credit risk management policies for state banks in China and found that mushrooming of the financial market;

the state owned commercial banks in China are faced with the unprecedented challenges and tough for them to compete with foreign bank unless they make some thoughtful change. In this thoughtful change, the reform of credit risk management is a major step that determines whether the state owned commercial banks in China would survive the challenges or not.

Bank has found that, Bangladesh Krishi Bank, was concentrating its lending to primary agriculture to serve to poor people in rural area. Later on it has diversified its activities to secondary agriculture. After diversification, the financial position of the bank become more transparent and expected for better result soon.

Morris (2001) stated that, In almost all of the countries reviewed, supervisory authorities set limits on large exposures for banks, generally with a limit of about 25% of a bank's regulatory capital for an individual large exposure to a single borrower or a closely related group of borrowers.

Winton (1999) suggested that, suggests that regulators must be careful in endorsing diversification across multiple sectors or regions as a goal for banks and related intermediaries. Although such diversification may reduce the odds of bank failure and improve bank performance by enhancing monitoring incentives.

The studied 96 Brazilian banks and found that, the loan portfolio of Brazilian banks was average, moderate concentrated. He concluded that, loan portfolio concentration seems to improve the performance of Brazilian banks in both return and risk of default. The concentration indices were found to be positively related to returns and negatively related to risks.

He has tried to highlight the effects of change or amendment in NRB directives regarding loan classification and loan loss provisioning. “Although the circumstances leading to financial problem or crisis in many Nepali banks differ in many respects, what is common across most of the bank is the increased size of non-performing assets (NPAs). To resolve the problem of the losses or likely losses of this nature facing the industry, NRB has, as the central bank, amended several old directives and issued many new circulars in the recent years.

In conclusion he has mentioned that in the recent years, NRB has worked for management and reform of the credit of the financial institution more seriously and

NRB has adopted reforms aimed not just at dealing with problem banks but also at strengthening banking supervision to reduce the likelihood of future crisis. "All prudential directives of NRB in connection of Credit sector reform have been made revised on after April 2015. To adapt to such changes there can be some difficulties and for a better and harmonized reform NRB should continue to be supportive, proactive, and also participative to take opinions of bankers for a change in regulation policy taking place in the future.

2.2.2 Review of previous theses

According to the Oxford Advance Learners Dictionary credit is "sum of the money lent by a bank, etc. Credit and advances is an important item on the assets side of the balance sheet of commercial bank. "Banks earns interest on credits and advances which is one of the major sources of income for banks. Banks prepare credit portfolio, otherwise it will not add bad debts but also affect profitability adversely".

Credit is financial assets resulting from the delivery of cash or other assets by a lender to a borrower in return for an obligation repay on specified date on demand. Banks generally grant credit on four ways

- Overdraft
- Cash Credit
- Direct Credit
- Discounting of Bills

Importance of credit management

A commercial bank generates near about 65 to 70 percent of its income through the lending activity. The success of a bank is heavily dependent on its lending programs. Some of the important contributions of credit to economy are as follows:

1. Agents of indirect Production: Banks loans are called the agent of indirect production. The producers purchase raw materials, machinery, hire the labour and other means of production through these credits by the bank.

2. Generates Employment: Commercial banks have increased employment opportunities through their lending functions have contributed to mass production, mass distribution and mass consumption.

3. Improvement in standard of living: Bank credits may be used to increase production and employment. This will result in higher income and improve the living standard of the people.

4. Contribution to economic development: The banks promote the economic development of the country. Bank lending contributes to develop infrastructural facilities to production, distribution and boosts exports and imports.

5. Raise the level of consumption: Banks also increase the level of consumption through their consumer loans. Banks provide consumer loans for creating constant demand for consumer goods like houses, furniture, appliances, fixtures etc. in addition to the financing of agricultural, commercial, and industrial activities.

6. Sources of Bank's Profit: Banking lending also plays an important role in the gross earnings and net profits of commercial banks. It is the most profitable as well as risky function performed by commercial banks.

Classification of Credits in Banks

The bank loans may be classified in the following categories:

1. Purpose: A common classification of loans is by way of purpose or by use of borrowed funds. The loans may be advanced for productive activities such as agriculture, industry, trade and transport and for consumption purposes such as purchasing of automobiles, real estate and houses.

2. Secured and Unsecured Loans: The commercials Banks may also advance secured loans and unsecured loans. Secured loans involve the pledge of specific collateral securities. Pledged collateral security for secured loans may be real estate, plants and equipment's, fixed deposit receipt, corporate stocks and bonds.

3. On the basis of Maturity Period: Bank loans can be classified on the maturity period of the loan. Banks advance: short term loans (one year to four years), intermediate loans (more than one year to five years), and long term loans (five years to 20 years).

4. Methods of Repayment: Bank loan may be repaid in one lump sum or in installment basis. Under lump sum method, entire loan is to be repaid on one final maturity date.

5. Origin: The loan portfolio of commercial banks is derived from many sources. The sources may be capital, reserves, deposits, borrowing etc.

Types of Credit

Bank loans can be advanced through following different schemes:

1. Cash Credit: It refers to the loan given in cash to business firms. Cash credits are generally allowed against the pledge or hypothecation or both or personal security. Under this system, the bank advances loans to the customer on the basis of his current assets, receivable or fixed assets by hypothecating them in favour of the bank.

2. Overdrafts: An overdraft is an advance given by allowing a customer to overdraw his current account up to an agreed amount. An overdraft loan is sanctioned by the bank to be drawn by the borrower over their deposits.

3. Demand Loans: A demand loan is that loan which can be recalled on demand. The salient feature of this loan is that the entire amount of the loan allowed is paid to the bank at one time. It is paid either in cash or by transfer to the account of the borrower.

4. Term Loans: A term loan is a loan which is sanctioned for specific period. The specified period will be more than one year but less than ten years. These types of term loans are advanced against the security.

5. Clean Advance: A clean advance is generally granted for a short period after taking into consideration the net liquid resources of the borrower. These loans are granted only to very sound parties.

6. Bank Guarantee: It is used for the sake of the customer in favour of the party up to the approval limit. Generally a certain period amount is taken as margin from the customer's margin is credited.

7. Letter of Credit: Letter of credit assumes importance in international trade. The problem in foreign trade is the exporters and importers are separated by distance and are unfamiliar with each other. The exporter will send the goods only if he is satisfied with the credit worthiness of the importer.

8. Consortium Credit: No single financial institution grant credit to the project due to single borrower limit or other reason and two or more such institutions may consent to grant credit facility to the project of which is baptized as consortium credit.

9. Consumer Credit: Consumer credit is granted to consumer for their consumer needs. These loans are to purchase of durable consumer goods like Cars, Refrigerators, V.C.R, Color T.V and others consumable goods.

10. Working Capital Credit: Working capital denotes the differences between current assets and current liabilities. It is granted to the customers to meet their working capital gap for supporting production process.

Table No.1

Time Table of Credit Classification				
Classification	**For F/Y 20014/15** **2071/72**	**For F/Y 2015/16** **2072/73**	**For F/Y 2016/17** **2073/74**	**For F/Y 2017/18 Onwards** **2074/75**
Pass	Loans not past due and past due up to 3 months.	Loans not past due and past due up to 3 months.	Loans not past due and past due up to 3 months.	Loans not past due and past due up to 3 months.
Sub-Standard	Loans & advances past due for a period of over 3 months to 1 year.	Loans & advances past due for a period of over 3 months to 1 year.	Loans & advances past due for a period of over 3 months to 9 months.	Loans & advances past due for a period of over 3 months to 6 months.
Doubtful	Loans & advances past due for a period of over 1 year to 3 years.	Loans & advances past due for a period of over 1 year to 3 years.	Loans & advances past due for a period of over 9 months to 2 year.	Loans & advances past due for a period of over 6 months to 1 year.
Loss	Loans & advances past due for a period of over 3 years.	Loans & advances past due for a period of over 3 years.	Loans & advances past due for a period of over 2 years.	Loans & advances past due for a period of over 1 years.

(Source Nepal Rastra Bank)

The respect overdue periods of pass, Sub-standard and Doubtful loans shall be considered for higher classification from the next day of date of expiry of the overdue period provided for each class.

2.3 Research gap

The time assigned is very limited it has to be completed within a tentative time. From the analysis made during the period of the concerned sample thesis certain conclusion has been derived in this thesis.

Going through the review of literature it has been found that various researches have been found on banking sector but most of the previous works are concentrated on the financial performance of banking sector. From the study it has been found that credit management is one of the challenges faced by commercial banks in the present context. Although some researchers selected the topics but they entertain only private sector commercial banks which are recently opened. These newly opened commercial banks could not present the actual status of Nepalese financial market semi government bank. Hence, an attempt has been made to fill this research gap by taking references of Nepal Bank Limited and This research will able to deliver some of the critical facts that have been faced by the Nepalese banking industry, latest information and data regarding credit management.

CHAPTER: 3

METHODOLOGY

3.1 Research Design

This study is mainly be based on descriptive research design to achieve the objective of the research. Follow by review of past journals books and annual reports as well as related schedules and consultation from qualitative and quantitative information of the stated objective.

3.2 Population and sample

For this study, all the commercial banks of Nepal are the total population. Among the population size, as sample size three commercial banks are chosen and selected which represents the characteristic of the 27 commercial banks in Nepal as whole population size. The selected three commercial banks as sample size government control joint venture and private bank. The sampling method is judgmental sampling method in this study.

1.Government bank

2.Joint venture bank

3.Private sector bank

3.3 Sources of data

This study is based on qualitative and quantitative data collection methods on the basis of secondary data collection. Therefore, the accuracy of result and concussions highly depends upon the reliability of this data. The secondary data are obtained from some published or unpublished sources but the required information has been collected from concerned commercial bank. Secondary data are collected through,

1.Websites and Internets.

2. Financial statements of concerned banks.

3. Research reports and past thesis on Central Library T.U.

4. Journals, bulletins and reports published by NRB.

3.4 Data collection procedure

For the purpose of this study both primary and secondary data were administered to collected primary data .secondary data will collected by desk research using financial statement text books journals files reports directives manuals and bulletins of the bank. The internet was another major sources of secondary data.

3.5 Data processing procedure

The data obtained from the different sources are in raw from. The raw data is processed and converted into required form. For this study required data are taken from the secondary sources (bank's publication) and presented in this study. For presentation different tables and charts are used. Besides this primary data collected from different sources, are also presented whenever required. Raw data are attached in APPENDIX. Computation has been done with the help of scientific calculator and computer software program.

3.6 Data analysis tools and techniques

Various information and data collected from field work are used for interpretation. The collected data will be coded tabulated and analyzed in systematic way to meet the research objectives and various statistical and financial tools are used to make the analysis more clear.

3.6.1 Financial ratio analysis

Financial ratio analysis is designed to determine the relative strengths and weakness of business operations. It also provide framework for financial planning and control. Financial managers need the information provided by analysis both to evaluate the firm's past performance and to map future plans

A. Credit risk indicator

i.) Capital adequacy ratio

Banks have to make decisions about the amount of capital they need to hold for three reasons. First bank capital helps prevents bank failure a situation in which the bank cannot satisfy its obligations to pay its depositors and other creditors and so goes out business.

$$\text{Capital adequacy ratio} = \frac{\text{Tier i capital+ Tier ii capital}}{\text{Risk weighted assets}}$$

ii) Leverage ratio

The leverage ratio measures the ratio of a bank's book value of primary of core capital to its assets. The lower this ratio is the more leveraged the bank is. Primary or core capital is a bank's common equity plus qualifying cumulative perpetual perfered stock plus minority interests in equity accounts of consolidated subsidiaries. The leverage ratio is

$$\text{Leverage ratio (L)} = \frac{\text{Core capital}}{\text{Total assets}}$$

B. Liquidity Ratio

Banking image is dependent upon its liquidity position. It should be able to provide demanded cash by its customer as and when necessary. Banking industry has its survival in its ability to create credit creation ability is dependent upon its liquidity ratio. The liquidity ratio of banking industry depends upon the banking habit of the people.

The following ratio is evaluated under liquidity ratio.

i). Current Ratio

The current ratio measures the extent to which the claims of short-term creditors are covered by short-term assets. Current ratio can be computed as:

$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current assets include normally those assets of a firm which could be converted into cash within one year period of time. These assets of firm includes cash, bank balance, and investment in treasury bills, discount, overdrafts, short term advance loans, and foreign currency loan, bills for collections, customer acceptance, stock receivable and prepaid expenses.

ii) Cash and Bank balance of total deposit ratio

This ratio is competed by dividing cash and bank balance by total deposit. This is computed as,

$$\frac{\text{Cash and Bank Balance}}{\text{Total Deposit}}$$

iii) Cash and bank balance to current assets ratio

The ratio is computed by dividing cash and bank balance by current assets. Higher ratio shows the bank's ability to meet its demand for cash. It can be computed as,

$$\frac{\text{Cash and Bank Balance}}{\text{Current Assets}}$$

iv) Loan and advances to current assets ratio

It shows the relationship between loan and advances to current assets or shows the capacity of a bank to purchase discount bill and loan, cash credit and overdraft facility to its customer. It can be computed as,

$$\frac{\text{Loan and Advances}}{\text{Current Assets}}$$

C. Assets management ratios (Activity Ratio)

A set of ratios which measures how effectively a firm is managing its assets and whether or not the level of those assets is properly related to the level of operations as measured by sales. So this ratio is also called efficiency ratio or turnover ratio. Because they indicate the speed with which the assets are converted or turn into sales.

i) Loan and advances to total deposit ratio

This ratio is calculated to find out, how successful the bank is utilizing their total deposition loan and advances for profit generation purpose. Higher the ratio implies the better utilization of loan and advances out of total deposit. This is calculated as,

$$\frac{\text{Loan and Advances}}{\text{Total Deposit}}$$

ii) Total investment to total deposit ratio

Investment is one of the major component of credit created to earn profit. This implies the utilization of firm's deposit on investment in government securities and shares, debenture of other companies and bank. This ratio can be calculated as,

$$\frac{\text{Total Investment}}{\text{Total Deposit}}$$

iii) Loan and advances to total working fund ratio

Loan and advances is the major component in working fund (total assets), which includes the ability of bank to channelize its deposit in the form of loan and advances to earn high return.

$$\frac{\text{Loan and Advances}}{\text{Total Working Fund}}$$

D. Profitability Ratio

Profitability ratio is one of the main indicators to analyze the financial performance of the firm. Profitability ratios are calculated to enlighten the end result of business activities, which is the major criterion of the overall efficiency of the business concern. It measures the operating efficiency of the company.

i) Return on loan and advance ratio

Return on loan and advance ratio indicates how efficiently the bank has utilized its resources in form of loan and advances.

$$\frac{\text{Net Profit(loss)}}{\text{Loan and Advances}}$$

i) Return on total working fund ratio (ROA)

This ratio shows the overall profitability of all working fund i.e. total assets, it is also known as Return on Assets (ROA). A firm has to earn satisfactory return on assets of working fund in order to long-term service. This ratio is calculated by dividing net profit (loss) by total working fund. It can be calculated as,

$$\frac{\text{Net Profit(loss)}}{\text{Total Working Fund}}$$

3.6.2) Statistical Tools

Some important statistical tools has been used to present and analyze the data for achieving the objective of the study. Simple analytical statistical tools such as graph, percentages, Karl Person's Coefficient of Correlation, method of least square are adopted which are as follows:

i) Coefficient of correlation Analysis

This analysis interprets and identifies the relationship between two or more variables.

i) Coefficient of correlation between Total Deposit and Loan and Advances.

ii) Coefficient of correlation between Net income and Loan and Advances.

iii) Coefficient of correlation between Interest Earned and Loan and Advances

The above ratio tools analyzes the relationship between these relevant variables and helps the bank to make appropriate policies regarding deposit collection, fund utilization (loan and advances and investment) and profit maximization.

To find out those relationships, the following formula is used:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

Where, $x = (X-\overline{X})$, $y = (Y-\overline{Y})$

The result of coefficient of correlation is always between -1 to +1, where r= +1 means there is a positive relationship between two variables and where r=-1, means there is a negative relationship between two variables.

ii) Standard Deviation (S.D.)

The measurement of the scatter ness of the mass of figures in a series about an average is known as dispersion. The standard deviation measures the absolute dispersion. The greater the amount of dispersion, greater the standard deviation.

$$S.D = \sqrt{\frac{\sum(X - \overline{X})^2}{N}}$$

Where, X= variable,

$\overline{X}$= Mean

N= No. of Period

CHAPTER: 4
RESULTS

4.1 Data presentation and analysis

4.1.1 Financial analysis

The Balance sheet shows the financial position on a particular date in terms of structure of assets, liabilities and owner's equity, and profit and loss account shows the profit earned and loss sustained during a specific period. The financial analysis helps to obtain better understanding of firm's position and performance. The first step involves selecting the information, second step involves arranging the information in a way to highlight significant relationships, the final step is interpretation and drawing of conclusion.

A. Credit risk indicators

i) Capital adequacy ratio

A banks capital is divided into Tier i and Tier ii. The Tier I capital is primary or core capital. Tier ii capital is supplementary capital. (**For details see Appendix-(i) A)** The following table show the capital adequacy ratio.

Table No. 2

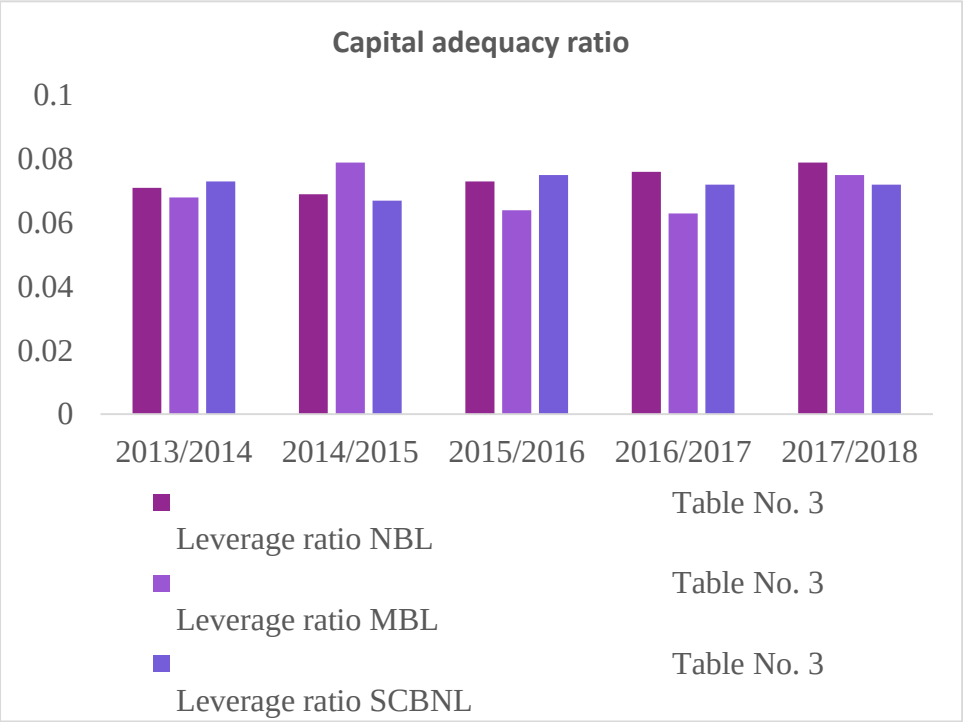
Capital adequacy ratio			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	0.12	0.126	012
2014/2015	0.13	0.128	0.119
2015/2016	0.115	0.14	0.124
2016/2017	0.125	0.139	0.122
2017/2018	0.15	0.148	0.125

Source: Appendix-(i) A

Table No 2 show that the NBL's ratios are in higher than other bank. The highest ratio is 0.15 in F/Y 2017/2018 and the lowest ratio is 0.12 in 2013/2014. Similarly the ratio

of MBL highest ratio 0.148 in F/Y 2017/ 2018 lowest ratio is 0.12in F/Y 2013/ 2014 and SCBNL ratio are highest ratio 0.125 lowest is 0.119 2014/2015.

Figure: 1



ii) Leverage ratio

The bank's capital to assets ratio is 5 percent or higher it is well capitalized. At 4 percent or more it is adequately capitalized. At less than 4 percent it is undercapitalized; at less than 3 percent it is significantly undercapitalized; and at 2 percent or less it is critically undercapitalized. **(For the details see Appendix-(i) B)**

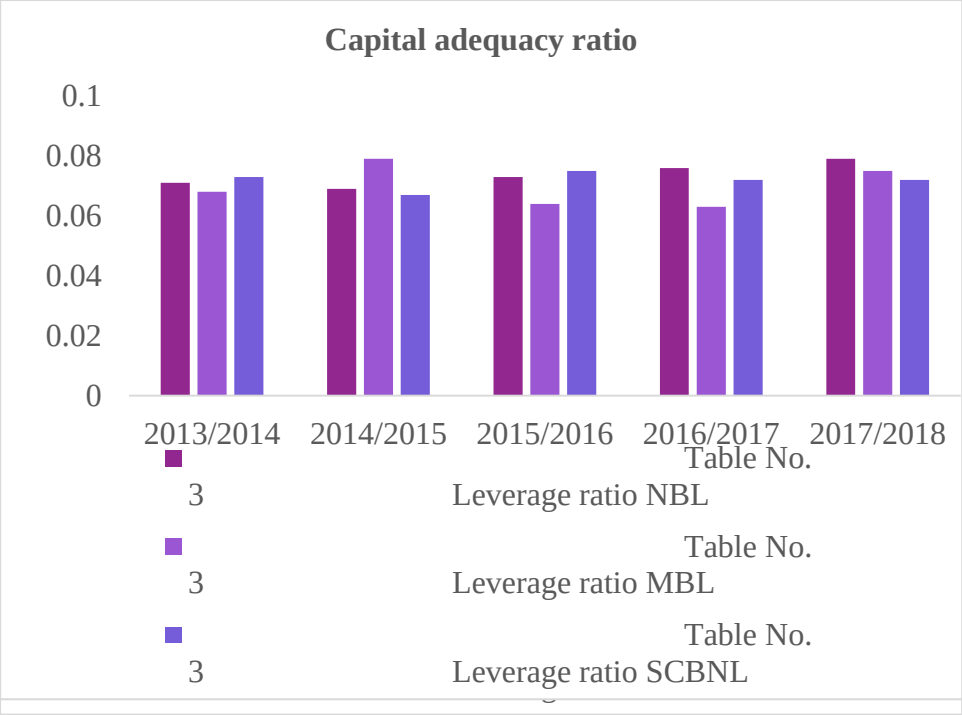
Table No. 3

Leverage ratio			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	0.071	0.068	0.073
2014/2015	0.069	0.079	0.067
2015/2016	0.073	0.064	0.075
2016/2017	0.076	0.063	0.072
2017/2018	0.079	0.075	0.072

Source: Appendix-(i) B

Table No 3 show that the leverage ratio is higher than NBL's are 0.079 for F/Y 2017/2018. The bank's sufficient capita in the ratio of the operation lowest capita is 0.069 in F/Y 2014/2015. On the MBL's height ratio is 0.079 F/Y 2014/2015 lowest 0.063 in F/Y 2016/2017 and SCBNL's height ratio is 0.075 F/Y 2015/2016 respectively.

Figure: 2



B. Liquidity Ratio

Commercial banks should maintain its satisfactory liquidity position to satisfy the credit needs of the community, to meet demands for deposit, withdraws, pay maturity obligation in time and convert non-cash to satisfy immediate needs without loss to bank and consequent impact in long run profit.

i) Current Ratio

The current ratio indicates the ability of the bank to meet its current obligation. It measures the liquidity position of financial institutions. Current ratio is calculated by dividing current assets by current liabilities (**for details see appendix-(i) C**). The current ratio of NBL, MBL and SCBNL is under analysis in the following tab

Table No. 4

Current Assets to current Liability Ratio(Times)			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	0.81	0.75	1.07
2014/2015	0.92	0.90	1.06
2015/2016	0.94	0.89	0.91
2016/2017	0.97	0.94	0.96
2017/2018	0.89	0.92	0.90
Mean	**0.91**	**0.88**	**0.98**
S.D	**0.05**	**0.067**	**0.07**
C.V	**5.49**	**7.61**	**7.14**

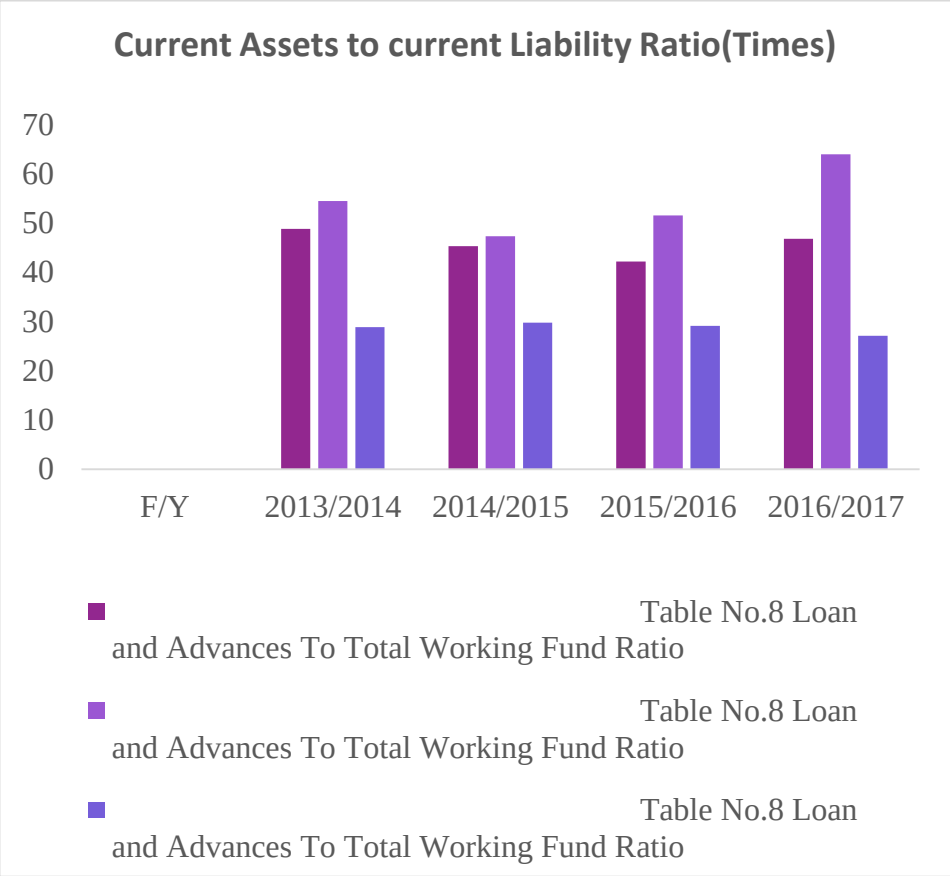
Source: Appendix – (i) C

Table No 2 shows that the current ratio of NBL, MBL and SCBNL are in fluctuating trend. The highest ratio of NBL is 0.97 times in F/Y 2016/2017 and the lowest id 0.81 times in F/Y 2013/2014. Respectively MBL has the highest ratio of 0.94 times

in F/Y 2016/2017 and the lowest of 0.75 times in F/Y 20013/2014. Respectively the SCBNL's highest ratio is 1.07 times in F/Y 2013/2014 and lowest is 0.9 times in F/Y 2017/2018.

From the mean ratio point of view current liabilities exceeded the current assets of NBL, MBL and SCBNL. Though SCBNL has the highest mean ratio of 0.98 among the three banks under study, yet the mean ratio of SCBNL doesn't meet the optimal standard of current ratio 2:1. Among the three banks (NBL, MBL and SCBNL) NBL is much consistency in its ratio with 5.49% followed by SCBNL with 7.14% and MBL with 7.61%

Figure 3



ii) Cash And Bank Balance To Total Deposit Ratio

This ratio measures the availability of bank's highly liquid or immediate funds to meet its unanticipated calls on all types of deposits. This ratio is computed as Cash and Bank Balance divided by Total Deposit (**for details see appendix-(i) D**). A high ratio indicates the greater ability to meet their deposits and vice-versa. The following

table shows the cash and bank balance to total deposit ratio of NBL, MBL, and SCBNL.

The ratios are analyzed and presented through the help of following t

Table No. 5

Cash And Bank Balance To Total Deposit Ratio (%)			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	6.78	8.11	5.21
2014/2015	8.51	11.69	8.06
2015/2016	6.87	0.64	9.56
2016/2017	3.83	9.4	5.74
2017/2018	3.26	12.34	5.53
Mean	**5.85**	**10.44**	**6.82**
S.D	**1.99**	**3.42**	**3.8**
C.V	**34.02**	**32.76**	**55.72**

Source: Appendix – (i) D

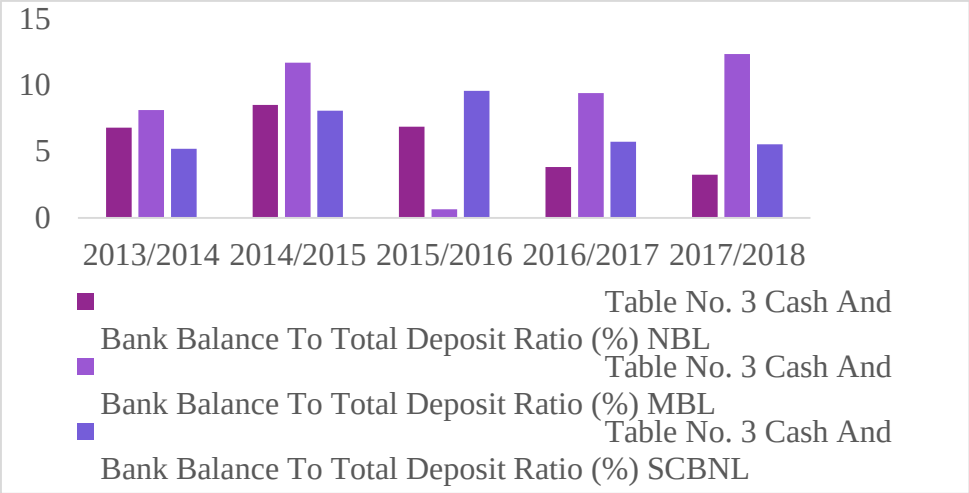
Table No 3 shows that the comparative cash and bank balance to total deposit of NBL has increased for first two years according to the study period then from F/Y 2006/2007 it started declining, whereas MBL Ratio seems to be fluctuating. The SCBNL ratios has increasing trend from F/Y 2013/2014 to 2015/2016 then after it started declining up to the study period. Among the three banks MBL has the highest mean ratio of 10.44% followed by SCBNL with 6.82% then NBL with the lowest mean ratio of 5.85%.

On the basis of coefficient of variation, among the three banks MBL has the consistent ratio than that of NBL and SCBNL.

Therefore it can be concluded that the cash and bank balance of MBL with respect to deposit is better against the readiness to serve its customer’s deposit than NABIL and

SCBNL. It implies that better liquidity position of MBL. In contrast, a high ratio of non-earning cash and bank balance may unfit, which indicates the bank's unavailability to invest its fund in income generation areas. Sectors like short-term marketable

Figure: 4



iii) Cash Bank Balance to Current Assets Ratio

This ratio examines the bank liquidity capacity on the basic of its most liquid assets i.e. cash and bank balance. This ratio reveals the ability of the bank to make quick payments of its customer's deposit. A high ratio indicates the sound ability to meet the daily cash requirement of their customer's deposit and vice-versa.

This ratio is calculated by dividing cash and bank balance by current assets (**for detail see Appendix-(i) E).**The comparative ratios are presented in the following table:

Table No. 6

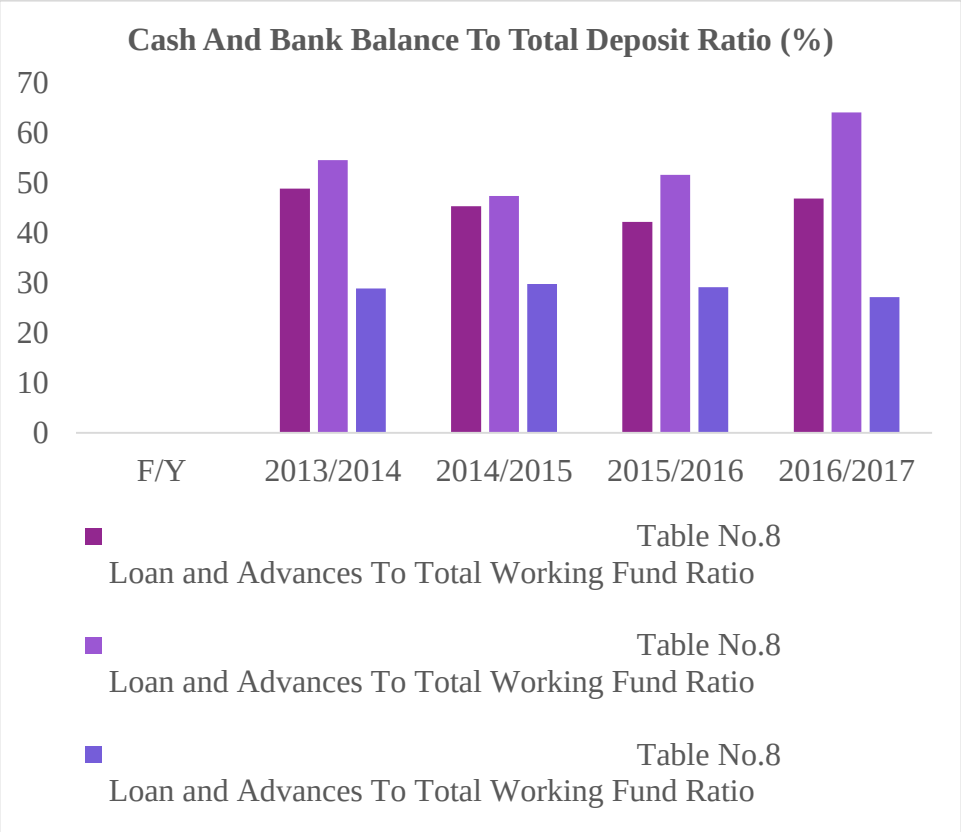
Cash nd Bank Balance To Current Assets Ratio (%)			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	7.9	10.14	4.5
2014/2015	8.25	12.32	7.27
2015/2016	6.81	11	10.07
2016/2017	3.74	9.7	5.75
2017/2018	3.47	13.05	5.94
Mean	**6.03**	**11.24**	**6.75**
S.D	**2.04**	**1.27**	**1.9**
C.V	**33.83**	**11.3**	**28.15**

Source: Appendix – (i) E

Analyzing the above ratios it clears that cash and bank balance to current asset ratio of NBL has increased for first two years according to the study period then from F/Y 2004/2005 it started declining, whereas MBL Ratio seems to be fluctuating. The SCBNL ratios have increasing trend from F/Y 2013/2014 to 2015/2016 then fluctuating up to the study period.

On the basis of mean ratio MBL has the highest ratio of 11.24% followed by SCBNL with mean ratio 6.75% and NBL with mean ratio 6.03%, which is the lowest among the banks under study It supports the conclusion that NBL has not been successful in maintaining its higher cash and bank balance to current asset ratio in comparison to MBL and SCBNL. Even the variability of the ratio of NBL is higher than that of MBL and SCBNL.

Figure: 5



iv) Loan and Advances to Current Asset Ratio

Loan and advances are the current assets of commercial bank, which includes loan and advances, cash, credit, loan and foreign bills purchased, overdraft and discount. A commercial bank should not keep its all connected fund as cash and bank balances but they should be invested as loan and advances to customers because they must earn high profit by mobilizing funds for long life banking. They should pay interest on these deposit funds even they don't generate loan and advances and may lose some earning. However, high loan and advances may be harmful, since they need sufficient liquidity.

This ratio is calculated by dividing loan and advances by current assets (**for details see Appendix-(i) F).**The ratios are analyzed and presented through the help of following table:

Table No. 7

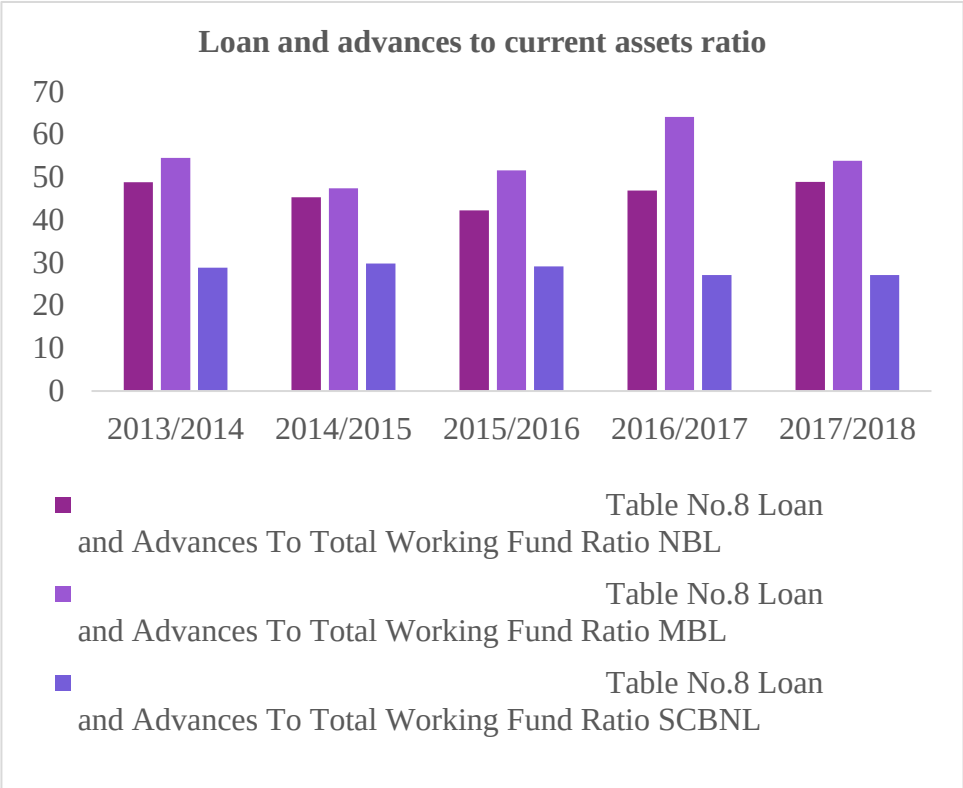
Loan and Advances To Current Asset Ratio			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	55.87	76.77	29.26
2014/2015	55.92	76.78	27.39
2015/20016	57.5	63.98	31.9
2016/2017	70.7	73.61	42.14
2017/2018	71.26	71.35	41.61
Mean	**62.25**	**72.5**	**34.46**
S.D	**7.15**	**4.72**	**6.22**
C.V	**11.49**	**6.52**	**18.06**

Source: Appendix-(i) F

Table No 5 shows that NBL has an increasing trend of loan and advance to current asset ratio during the study period. It has highest ratio of 71.26% in F/Y 2017/2018 and the lowest of 55.87% in F/Y 2013/2014, whereas MBL's ratios are in fluctuating trend, the highest ratio is 76.78% in F/Y 2005/2006 and the lowest is 63.98% in F/Y 2015/2016, similarly SCBNL has also fluctuating trend, the highest ratio is 42.14% in F/Y 2016/2017 and the lowest is 27.39% in F/Y 2014/2015.

From the mean ratio point of view MBL has the highest ratio of 72.5% followed by NBL with mean ratio 62.25% and then SCBNL with 34.46% mean ratio. The NIBL also seems to have much more consistency than the NBL and SCBNL with its loan and advances to current asset ratio which is computed as 6.52%. SCBNL has more inconsistent loan and advances to current asset ratio, which is 18.06%.

Figure: 6



C) Asset Management Ratio (Activity ratio)

This ratio measures how effectively the commercial banks are managing its assets and whether or not the level of those assets is properly related to the level of operations as measured by sales. In other words commercial banks should be able to manage its assets properly to earn high profit maintaining the appropriate level of liquidity. The following ratios are measured for the assets management ratio of the NBL, BL, and SCBNL in comparison.

i) Loan And Advances To Total Deposit Ratio

This ratio measures the bank's success to mobilize their funds on loan and advance for the purpose of income generation.

This ratio is calculated by dividing loan and advances by total deposit (**for details see Appendix-(i) G).**The following table shows the loan and advances to total deposit of the sample bank.

Table No. 8

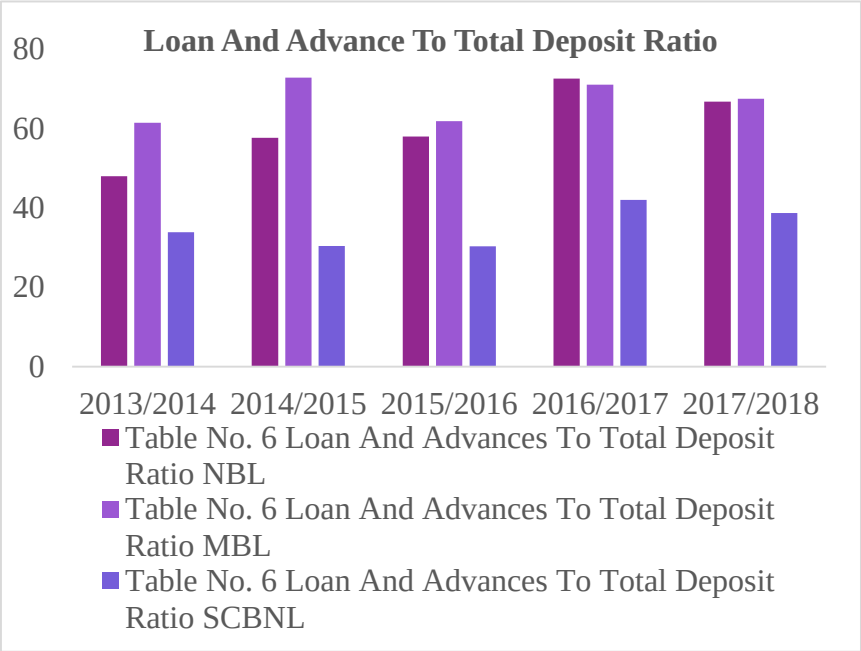
Loan And Advances To Total Deposit Ratio			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	47.97	61.43	33.87
2014/2015	57.67	72.85	30.37
2015/2016	58	61.87	30.29
2016/2017	72.57	71.04	42.05
2017/2018	66.79	67.5	38.75
Mean	**60.06**	**66.94**	**35.07**
S.D	**3.78**	**4.65**	**4.66**
C.V	**6.3**	**6.95**	**13.29**

Source: Appendix-(i) G

As per table No 6 reveals that the NBL's total investment to total deposit ratio has an increasing trend up to F/Y 2013/2014 then after in the F/Y 2017/2018 the ratio has decreased to 66.79%. NBL has the highest ratio of 72.57% in the F/Y 2016/2017 and the lowest ratio is 47.97% in the F/Y 2013/2014. Whereas the MBL has fluctuating trend in the ratio throughout the review period, its highest ratio is 72.85% in the F/Y 2014/2015 and the lowest ratio is 61.43% in the F/Y 2013/2014. Similarly SCBNL has also fluctuating trend its highest ratio is 42.05% in the F/Y 2016/2017 and the lowest ratio is 30.29% in the F/Y 2015/2016.

On the other hand the mean ratio of MBL is the highest with 66.94%, then after NBL with the mean ratio of 60.06

Figure: 7



ii) Total investment to total deposit ratio

A commercial bank may mobilize its deposit by investing its fund in different securities issued by government and other financial and non-financial companies. Now effort has been made to measure the extent to which the banks are successful in mobilizing the total deposit on investment. A high ratio is the indicator of high success to mobilize the banking fund as investment and vice-versa.

The ratio is computed by dividing total investment by total deposit (**for details see Appendix-(i) H**), this ratio is computed in reference to NBL, MBL, SCBL and the Banking Industry as a whole in the following tabl

Table No. 9

Total Investment To Total Deposit Ratio			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	52.88	43.65	58.57
2014/2015	44.85	21.52	55.22
2015/2016	41.33	33.51	53.68
2016/2017	29.25	27.6	50.1
2017/2018	31.93	29.6	55.71
Mean	**40.05**	**31.18**	**54.66**
S.D	**8.62**	**7.34**	**2.77**
C.V	**21.27**	**23.54**	**5.07**

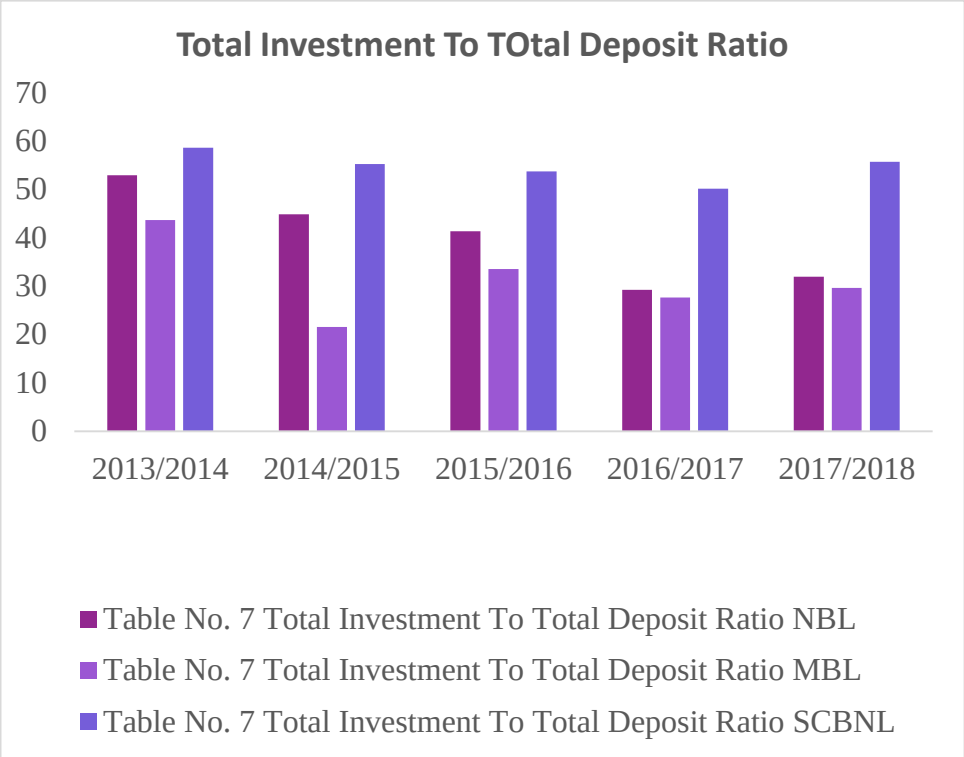
Source: Appendix-(i) H

Table No 7 reveals that the NBL's total investment to total deposit ratio has a decreasing trend up to F/Y 20016/2017 then after in the F/Y 2017/2018 the ratio has slightly increased by 2.68%. NBL has the highest ratio of 52.88% in the F/Y 2013/2014 and the lowest ratio of 29.25% in the F/Y 2016/2017. Whereas the MBL has fluctuating trend in the ratio throughout the review period, its highest ratio is 43.65% in the F/Y 2013/2014 and the lowest ratio of 21.52% in the F/Y 2014/2015. In case of SCBNL the total investment to total deposit ratio has a decreasing trend up to F/Y 2016/200817 during study period. The highest ratio is 58.57% in the F/Y 2013/2014 and the lowest ratio of 50.1% in the F/Y 2016/2017.

From mean ratio point of view, SCBNL's capacity to mobilize their deposit on total investment is highest among the three banks, SCBNL has the highest mean ratio of 54.66%, then after NBL with the mean ratio of 40.05%. And the MBL has the lowest mean ratio of 31.18% amongst the three. On the other hand, observing the coefficient

of variation of the ratio, we can conclude that SCBNL has been seen more consistent among the three with the lowest C.V of 5.07% followed by NBL with 21.27%.

Figure: 8



iii) Loan and Advances to Total Working Fund Ratio

Loan and advances of any commercial bank represent the major portion in the volume of total working fund. This ratio measures the volume of loan and advances in the structure of total assets. The high degree of this ratio indicates the good performance of the bank in mobilizing its funds by the way of lending function for the purpose of income generation. However, in its reserve side, the low degree of this represents low liquidity ratio.

This ratio is calculated by dividing loan and advances by total working fund (**for details see Appendix-(i) I**). The ratio of NBL, MBL and SCBNL has been presented in the following table.

Table No.10

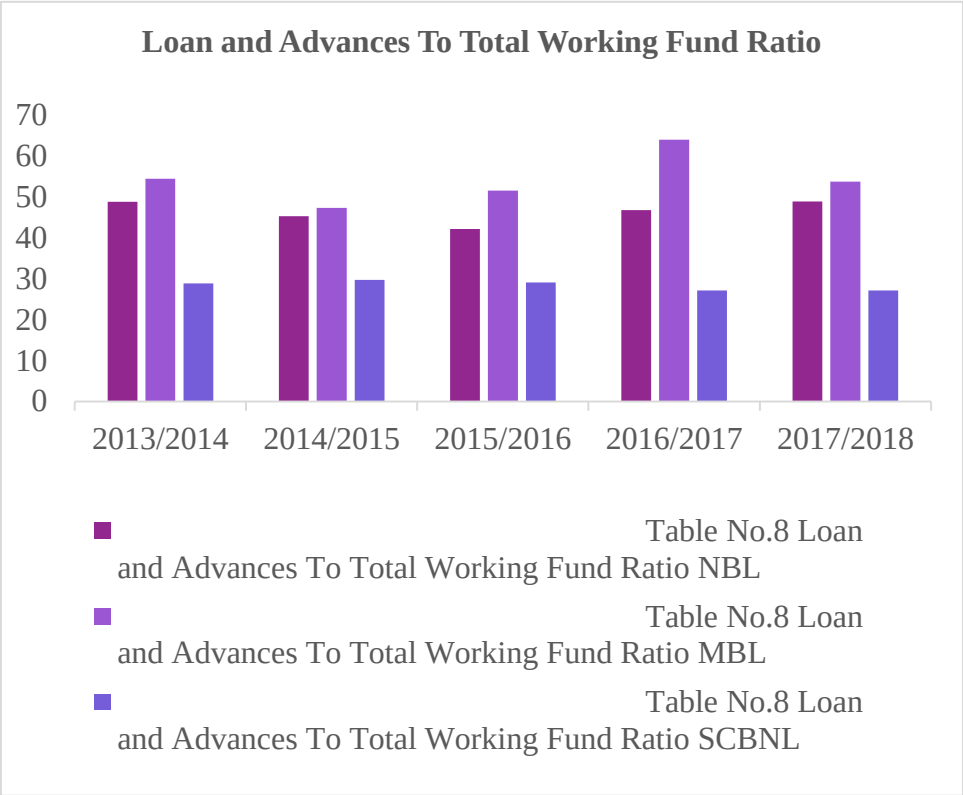
Loan and Advances To Total Working Fund Ratio			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	48.82	54.5	28.86
2014/2015	45.32	47.37	29.77
2015/2016	42.2	51.56	29.1
2016/2017	46.83	64.03	27.12
2017/2018	48.91	53.79	27.11
Mean	**46.42**	**54.25**	**28.39**
S.D	**2.49**	**5.48**	**2.43**
C.V	**5.36**	**10.10**	**8.56**

Source: Appendix- (i) I

Table No 8 shows that the NBL's ratios are in fluctuating trend. The highest ratio is 48.91% in F/Y 2017/2018 and the lowest ratio is 42.2% in 2006/2007. Similarly the ratios of MBL are also in fluctuating trend with highest ratio 64.03% in F/Y 2016/2017 and the lowest is 47.37% in F/Y 2015/2015. Whereas, the ratios of SCBNL is in decreasing trend although the ratio from the F/Y 2017/2018. The highest ratio of SCBL is 29.77% in F/Y 2014/2015 and the lowest is 27.11% in F/Y 2017/2018.

On the basis of mean ratio of loan and advances to total working fund, it can be said that MBL has the highest mean ratio of 54.25%, followed by NBL with mean ratio 46.42% and then SCBNL with 28.39%.

Figure: 9



D) Profitability Ratio

Profit is the must for any bank for its survival. And the profitability ratio helps to measure and indicate how efficient the bank is in profit generation. A higher ratio shows the higher efficiency of the bank. The following ratio has been computed under this profitability ratio type:

i) Return On Loan And Advances Ratio

This ratio measures the earning capacity of the commercial banks through its fund mobilization as loan and advances. A high ratio indicates greater success to mobilize fund as loan and advances and vice-versa.

This ratio is calculated by dividing loan and advances by Net Profit (**for details see Appendix-(i) J**). The ratio has been presented through the help of the following table:

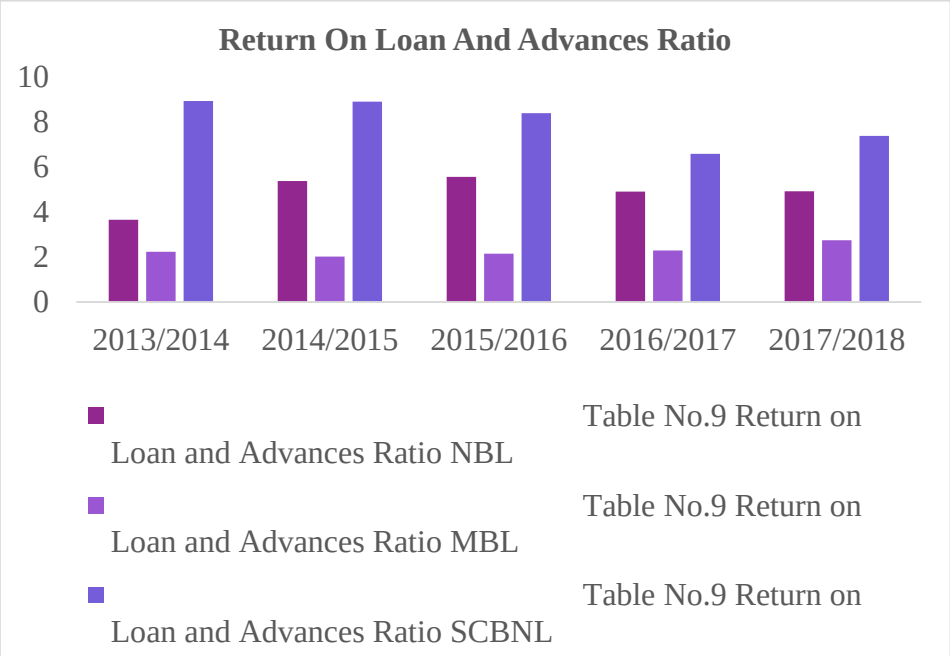
Table No.11

Return on Loan and Advances Ratio			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	3.65	2.23	8.93
2014/2015	5.37	2.02	8.9
2015/2016	5.56	2.14	8.39
2016/2017	4.9	2.29	6.58
2017/2018	4.92	2.74	7.37
Mean	**4.88**	**2.28**	**8.03**
S.D	**0.78**	**0.24**	**0.92**
C.V	**15.98**	**10.81**	**11.46**

Source: Appendix-(i) J

Table, No 9 NBL's ratios are in increasing trend from F/Y 2014/2015 to F/Y 2015/2016 then it started fluctuating up to the study period. NBL has the highest ratio of 5.56% in the F/Y 2006/2007 and the lowest ratio is 3.65% in the F/Y 2013/2014. Whereas the MBL's ratio has decreased in the second year of review period then after it started increasing up to the last year of review period. MBL has the highest ratio of 2.74% in the F/Y 2017/2018 and the lowest ratio is 2.02% in the F/Y 2014/2015. SCBNL has a fluctuating trend in its ratio, its highest ratio is 8.93% in the F/Y 2013/2014 and the lowest ratio is 6.58% in the F/Y 2016/2017. Comparing the mean ratio SCBNL has the highest mean ratio of 8.03% followed by NBL with 4.88% then MBL with 2.28%. The mean ratio specify that SCBNL has been successful in maintaining its higher return on loan and advances in comparison to other two banks under study, however, it doesn't has as much consistency as MBL . The MBL seems to have much consistency with 10.81% than SCBNL with 11.46% and the NBL with 15.98%.

Figure: 10



ii) Return On Total Working Fund Ratio(ROA)

Return on total working fund (ROA) ratio measures the profitability with respect to each financial resources investment of bank's assets. If the bank's total working fund is well managed and effectively utilized, the return on such assets will be higher. The ratio is calculated by dividing Net profit by Total working fund assets.

This ratio is calculated by dividing Total Working Fund by Net Profit (**for details see Appendix-(i) K**).The following table has been presented in order to show the profitability position with respect to total assets of NBL, MBL and SCBNL.

Table No.12

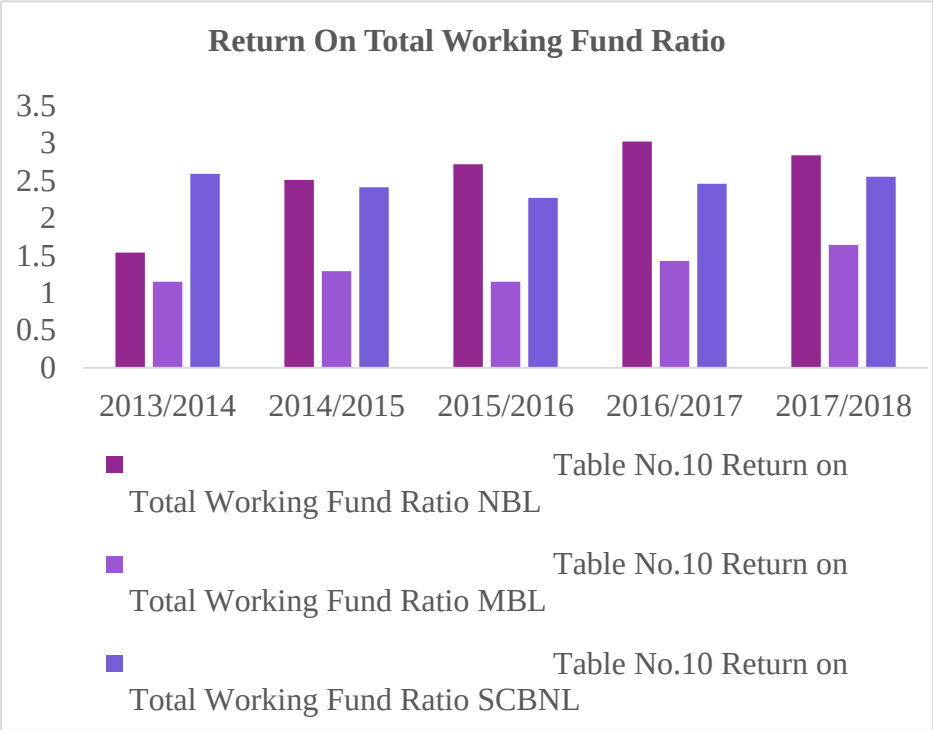
Return on Total Working Fund Ratio			
F/Y	**NBL**	**MBL**	**SCBNL**
2013/2014	1.54	1.15	2.59
2014/2015	2.51	1.29	2.41
2015/2016	2.72	1.15	2.27
2016/2017	3.02	1.43	2.46
2017/2018	2.84	1.64	2.55
Mean	**2.52**	**1.33**	**2.46**
S.D	**0.52**	**0.18**	**0.11**
C.V	**20.64**	**13.96**	**4.47**

Source: Appendix – (i) K

Table No 10 revels that the return on total assets of NBL is in increasing trend expect in the F/Y 2014/2015 the highest ratio is 3.02% in F/Y 2016/2017 and the lowest is 1.54% in F/Y 2013/2014. Whereas MBL has a fluctuating trend with highest ratio of 1.64% in the F/Y 2017/2018 and the lowest ratio of 1.15% in the F/Y 2013/2014 and 2015/2016. Similarly SCBNL has also the fluctuating trend in its ratios the highest ratio observed is 2.59% in the F/Y 2013/2014 and the lowest in the F/Y 2014/2015 with 2.41%.

Through the perspective of mean ratio NBL has the highest mean ratio of 2.52% followed by SCBNL with 2.46% then by MBL with 1.33%. From this analysis it seems that NBL with its highest mean among the three banks is able to earn high profit on total working fund assets although it has least consistency in its ratios than SCBNL and MBL. SCBNL ratios are more consistent with C.V 4.47% than that of MBL with 13.96% and NBL with 20.64%.

Figure: 11



4.1.2 Statistical analysis

Under this topic, some statistical tools such as co-efficient of correlation analysis between different variables.

4.2.1 Co-efficient of Correlation Analysis

Under this heading, karl person's co-efficient of correlation is used to find out the relationship between total deposit and loan and advances, total deposit and total investment, Interest earned to Total loan and advances.

i) Co-efficient of correlation between total deposit and loan and advances

The Co-efficient of correlation between total deposit and loan and advances measures the degree of relationship between two variables. In our analysis, total deposit is an independent variable(X) and loan and advances is the dependent variable(Y). The main objective of computing 'r' between these two variables is to justify whether total deposit are significantly used as loan and advances in proper way or not.

The following table shows the value of ‘ r, r^2, P.Er and 6 P.Er between total deposit and loan and advances of NBL, MBL and SCBNL during the study period. (**For details see Appendix (i) L1, L2 and L3).**

Table No. 13

Correlation between Total Deposit and Loan and Advances				
Bank	Evaluation Criteria			
	R	r^2	P.Er.	6P.Er.
NBL	0.8	0.64	0.11	0.66
MBL	0.99	0.98	0.006	0.036
SCBNL	0.76	0.58	0.126	0.756

Source: Appendix – (i) L1, L2 and L3

Table No 13 reveals that the coefficient of correlation between deposit and loan and advances of NBL is 0.8, which we can say that there is the positive relationship between these two variables. Moreover, the value of coefficient of determination (r^2) is 0.64 which means 64% of variation in dependent variable i.e. loan and advances has been explained by the independent variable i.e. total deposit. Similarly, considering the value of ‘r’ which has been computed as 0.8 and comparing it with six times of probable error which is 0.66, it could be said that the value of ‘r’ is significant. Moreover it could be said that there is a significant relationship between total deposit and loan and advances of NBL.

Likewise, coefficient of correlation between deposit and loan and advances of MBL is 0.99, which we can say that there is the higher positive relationship almost equal to perfect correlation between these two variables. Accordingly, the value of coefficient of determination (r^2) has been computed as 0.98, which reveals that 98% in the dependent variable has been explained by the independent variable. Similarly, considering the 6 P.Er. Which is 0.036, we can say that the relationship between the total deposit and loan and advances is significant.

ii) Co-efficient of Correlation between Net Income and Loan and advances

The correlation coefficient between Net Income and loan and advances measures the degree of relationship between these two variables. Here Net Income is dependent variable (X) and loan and advances is the independent variable (Y). The objective of computing 'r' between these two variables is to justify the significance of loan and advances to generate Net Income.

Table No. 14

Correlation between Net Income and Loan and Advances				
Bank	Evaluation Criteria			
	R	r^2	P.Er.	6P.Er.
NBL	0.91	0.83	0.05	0.3
MBL	0.81	0.656	0.104	0.624
SCBNL	0.866	0.75	0.075	0.45

Source: Appendix (i) M1, M2 and M3

The table No14 reveals that the coefficient of correlation between Net Income and loan and advances of NBL is 0.91, which we can say that there is the positive relationship between these two variables. Moreover, the value of coefficient of determination (r^2) is 0.83 which means 83% of variation in dependent variable i.e. Net Income has been explained by the independent variable i.e. loan and advances. Similarly, considering the value of 'r' which has been computed as 0.91 and comparing it with six times of probable error which is 0.3, it could be said that the value of 'r' is significant. Moreover it could be said that there is a significant relationship between Net Income and loan and advances of NBL.

Likewise, coefficient of correlation between Net Income and loan and advances of MBL is 0.81, which we can say that there is the positive relationship between these two variables. Accordingly, the value of coefficient of determination (r^2) has been computed as 0.656, which reveals that 65.6% in the dependent variable has been explained by the independent variable. Similarly, considering the 6 P.Er. Which is

0.624, we can say that the relationship between the Net Income and loan and advances is significant in case of MBL.

iii) Correlation between Interest Earned and Loan and Advances

The correlation coefficient between interests earned and loan and advances measures the degree of relationship between these two variables. Here interest earned is dependent variable (X) and loan and advances is the independent variable (Y). The objective of computing 'r' between these two variables is to justify the significance of loan and advances to earn interest.

The following table shows the value of ' r, r^2, P. Er and 6 P. Er between interest earned and loan and advances of NBL, MBL and SCBL during the study period. (**For details see Appendix (i) N1, N2 and N3).**

Table No.15

Correlation between Interest Earned to Loan and Advances				
Bank	Evaluation Criteria			
	R	r^2	P.Er.	6P.Er.
NBL	0.79	0.62	0.115	0.69
MBL	0.98	0.96	0.012	0.07
SCBNL	0.88	0.77	0.28	1.68

Source: Appendix (i) N1, N2 and N3

The table No. 15 reveals that the coefficient of correlation between interest earned and loan and advances of NBL is 0.79, which we can say that there is the positive relationship between these two variables. Moreover, the value of coefficient of determination (r^2) is 0.62 which means 62% of variation in dependent variable i.e. interest earned has been explained by the independent variable i.e. loan and advances. Similarly, considering the value of 'r' which has been computed as 0.79 and comparing it with six times of probable error which is 0.69, it could be said that the

value of ‘r’ is significant. Moreover it could be said that there is a significant relationship between interest earned and loan and advances of NBL.

Likewise, coefficient of correlation between interest earned and loan and advances of BL is 0.98, which we can say that there is the higher positive relationship almost equal to perfect correlation between these two variables. Accordingly, the value of coefficient of determination (r^2) has been computed as 0.96, which reveals that 96% in the dependent variable has been explained by the independent variable. Similarly, considering the 6 P.Er. Which is 0.69, we can say that the relationship between the interest earned and loan and advances is significant.

4.2. Major finding

The major findings of the study are divided on the basis of financial and statistical data of NBL, MBL and SCBNL, which are given below:

Credit risk indicator

1. Capital adequacy ratio of NBL’s is higher than MBL’s and SCBNL’s the ratio of NBL are 0.15 in F/Y 2017/2018 the MBL are 0.148 in F/Y 2017/2018 and SCBNL are 0.125 in F/Y 2017/2018 respectively. The capital is sufficient of all banks.
2. Leverage ratio of NBL are 0.79 in F/Y 2017/2018 MBL are 0.75 in F/Y 2017/2018 and SCBNL are 0.72 in F/Y 2017/2018 respectively. The leverage ratio is higher than the NBL bank.

Liquidity Ratio

1. The mean current ratio of SCBNL is computed as 0.98 times which is slightly higher than that of NBL’s 0.91 times and MBL’s 0.88 times. Likewise, variability of ratios of SCBNL is 7.14%, MBL’s is 7.61% and NBL’s is 5.49%. From which we can say that NBL’s ratios are more uniform than that of SCBL and MBL in comparison.
2. On average of 5 years of review period, cash and bank balance to total deposit ratio of NBL, MBL and SCBNL are 5.85%, 10.44% and 6.82% respectively. MBL’s liquidity position is better than that of SCBNL and NBL. There is also a higher consistency in the ratios of MBL followed by NBL and then SCBNL with the lowest consistency in ratios among the three banks.

3. The mean ratio of cash and bank balance to current asset ratio of NBL is 6.03% which is the lowest among the three banks. SCBNL has mean ratio of cash and bank balance to current assets of 6.75% and MBL has 11.24% (which is the highest among the three banks). Likewise, MBL has highest consistency in its ratio of 11.3% followed by SCBNL with 28.15% and then NBL with 33.83%.
4. The mean ratio of loan and advances to current asset of MBL is 72.5% followed by NBL with 62.25% and then by SCBL with 34.46% which is the lowest among the three banks. SCBNL has also the lowest consistency in its ratios with 18.06%.

Assets Management Ratio

1. The mean ratio of loan and advances to total deposit of NBL, MBL and SCBNL are 60.06%, 66.94% and 35.07% respectively. The utilization of Total deposit as loan and advances of MBL seems to be slightly higher than that of NBL, whereas SCBNL's utilization of Total deposit as loan and advances is much lesser than that of the other two banks i.e. NBL and MBL.
2. The mean ratio of Total Investment to total deposit of NBL, MBL and SCBNL are 40.05%, 31.18% and 54.66% respectively. The utilization of Total deposit as Investment in different types of securities issued by government and other financial and non-financial companies of SCBNL seems to be much higher than that of NBL and MBL. The mean ratio of Total Investment to Total deposit ratio of NIBL is revealed as the least among the three banks under study. Likewise from the perspective of consistency SCBNL has the highest consistency in its ratio with 5.07% followed by NBL with 21.27% and then MBL with 23.54%.
3. The mean ratio of Loan and Advances to total working fund of NBL, MBL and SCBNL are 46.42%, 54.25% and 28.39% respectively. MBL seems to have much higher mean ratio than that of NBL and SCBNL. Whereas SCBNL has the lowest mean ratio among the three banks under study.

Profitability Ratio

1. The mean ratio of return on Loan and Advances of NBL, MBL and SCBNL are computed as 4.88%, 2.28% and 8.03% respectively. SCBNL seems to have much higher return from loan and advances, followed by NBL and then MBL. Likewise from the perspective of consistency in Return on loan and advances ratio MBL has the highest consistency in its ratio with 10.81% followed by SCBNL with 11.46% and then NBL with 15.98%.

2. The mean ratio of return on Total Working Fund of NBL, MBL and SCBNL are computed as 2.52%, 1.33% and 2.46% respectively

Co-efficient of Correlation Analysis

1. Coefficient of correlation between **total deposit and loan and advances** of NBL, MBL and SCBNL has a positive relationship. The relationship between the total deposit and loan and advances is significant in case of all these three banks. However, the value of r^2 is different in either case. In case of NBL and SCBL the value of r^2 comparatively low than that of MBL, but yet shows good percentage of dependency. It indicates that the increase in loan and advances is due to increase in deposits or successful mobilization of deposit in both three banks and other factors have nominal role in increment of loan and advances as compare to deposit.
2. There is a positive correlation between the **Net Income and loan and advances** of NBL, MBL and SCBNL. The relationship between the Net Income and loan and advances is significant in case of all these three banks. However, the value of r^2 is different in each case. In case of MBL and SCBL the value of r^2 comparatively low than that of NABIL, but yet shows good percentage of dependency.
3. There is the positive correlation between the **interest earned and loan and advances** of NBL, MBL and SCBNL. The relationship between the interest earned and loan and advances is significant in case of NBL and MBL but insignificant in case of SCBL. The value of r^2 is different in each case. In case of NBL and SCBNL the value of r^2 comparatively low than that of MBL, but yet shows good percentage of dependency. It indicates that the increase in interest income is due to increase in loan and advances and other factors have nominal role in increment of as compare to loan and advances.

CHAPTER: 5
CONCLUSIONS

5.1 Discussion

From the analysis made during the study period of the concerned sample banks, certain conclusion has been derived after the financial as well as statistical tools have been measured on behalf of different aspect of the Credit Management of the concerned banks under study.

1. The research aims at examining the effect of credit management on financial performance of the Neplease commercial banks, through identifying the indicators of credit risk and financial performance ratios during the time period (2013-2018), in that it investigates the overall and sub-total effect of the credit risk indicators on banks' financial performance using certain partial indicators of credit risk.

2. The empirical findings show that there is a positive effect of the credit indicators of Non-performing loans/Gross loans ratio on financial performance, and a negative effect of Provision for Facilities loss/ Net facilities ratio on financial performance, and no effect of the Capital adequacy ratio and the credit interest/Credit facilities ratio on banks' financial performance when measured by ROA.

3. This is in agreement with and who found that Non-performing loans/Gross loans has positive effects on the financial performance of firms, as measured by ROA and ROE, and with who concluded in their separated studies that the capital adequacy ratio has no effect on credit risk management, and with who found that some of credit risk indicators have a positive effect on banks' financial performance.

4. But this result is contrary to who found that the rate of capital to total weighted risk assets has a positive effect while interest rate risk affects negatively the banks financial performance, in their findings that credit risk management as measured by capital adequacy variable has a significant positive effect on the financial performance, and also is in consistence with which revealed that effective credit risk management has a positive impact on bank's financial performance.

5. The researcher also found a positive effect of Nonperforming loans/Gross loans ratio, and negative effect of Provision for facilities loss/Net facilities ratio on bank's financial performance, this conclusion is consistence with findings of and is on contrary to the results of who found that the Non-performing loan and other indicators have a positive effect on bank's financial performance.

6. The analysis also revealed that an effect of the Credit interest/Credit facilities ratio and the leverage ratio on bank's financial performance as measured by ROE, where this result is contrary to the findings of and in agreement with who didn't find an effect of the amount of credit and nonperforming loans on bank's financial performance.

5.2: Conclusions

From the analysis made during the study period of the concerned sample banks, certain conclusion has been derived after the financial as well as statistical tools have been measured on behalf of different aspect of the Credit Management of the concerned banks under study.

1. The liquidity position of NBL, MBL and SCBNL have been satisfactory, the liquidity of each bank have been different though. On average the liquidity position of NBL is not as good as that of MBL and SCBL but yet satisfactory.
2. Likewise, the liquidity position of MBL is comparatively better than that of NBL and SCBNL. It has the highest average Cash and Bank Balance to Total Deposit Ratio, Cash and Bank Balance to Current Assets ratio and Loan and Advances to Current Assets Ratio but it has also lowest Current assets ratio among the three banks under study. Overall MBL shows that it is in good position to meet the daily cash requirement; however, it has to bear high cost of its liquid fund. The liquidity ratios of MBL are also stable and consistent which indicates the stable policy of MBL regarding the liquidity in comparison to NBL and SCBNL.
3. On the basis of Assets management ratio it has been concluded that MBL is in better position than NBL and SCBNL though on average MBL has the lowest total investment to total deposit ratio in comparison to NBL and SCBNL. MBL has successfully utilized its deposit on loan and advances but has lower investment in other sectors due to which its total investment to total deposit ratio has been the lowest among the three banks but yet occupies a better position among the banks

since it has the highest loan and advances to total deposit ratio and loan and advances to total working fund ratio.

4. Likewise compare to other two banks NBL has moderate average loan and advances to total deposit ratio, total investment to total deposit ratio and loan and advances to total working fund ratio. The Assets management ratio of NBL has been satisfactory according to the analysis made.
5. Likewise compare to NBL and MBL, SCBNL has the lowest average Loan and advances to total deposit ratio, loan and advances to total working fund ratio, but it has the highest total investment to total deposit ratio.
6. On the basis of the analysis of profitability, in comparison among the banks NBL has the highest return on total working fund on average but in case of return on loan and advances and total interest earned to total loan and advances ratio it is behind SCBL but ahead MBL.

7. On the basis of the analysis of risk ratio, conclusively, from the view point of liquidity risk we can say that MBL has maintained higher liquidity which would obviously results lower profit than SCBNL and NBL. Whereas NBL has the least liquidity among the three banks with stable liquidity risk ratio, which means NBL has taken higher risk than the other two banks under study for the higher profit.

5.3) Implications

Recommendations are the final output of the whole study. It helps to convey positive information and proper way of improvement to concern banks NBL, MBL and SCBNL and as well as other interest researcher in upcoming days. Various analyses have been done until this stage. On the basis of analysis and finding of the study, following suggestion and recommendation can be advanced to overcome weakness, inefficiency and satisfactory improvement policy of NBL, MBL and SCBNL.

1. The cash and bank balance to total deposit measures the availability of bank's highly liquid or immediate funds to meet its unanticipated calls on all types of deposits. The cash and bank balance of MBL with respect to deposit is better against the readiness to serve its customer's deposit than NBL and SCBNL. It implies that better liquidity position of MBL. In contrast, a high ratio of non-earning cash and bank balance may unfit, which indicates the bank's unavailability to invest its fund in income generation areas. Thus MBL is suggested to invest in more productive sectors like short-term marketable

securities, treasury bills etc. insuring enough liquidity which will help the bank to improve its profitability.

2. To get success in competitive banking environment, depositor's money must be utilized as loan and advances. If it is neglected, then it could results to liquidity crisis in the bank and one of the main reasons for the bank's failure. It is found that MBL's loan and advances to total deposit ratio is comparatively the highest among the three banks followed by NBL, then SCBNL. SCBNL's ratios seems much lower than that of NBL and MBL so it is recommended that SCBNL should follow liberal policy, invest more and more percentage of total deposit in loan and advances and maintain more stability on the credit policy.
3. There is highly positive correlation between the Total deposit and loan and advances of NBL, MBL and SCBNL. So it is recommended for the banks under study especially for MBL to increase their total deposit to make more loan and advances, since correlation between the Total deposit and loan and advances of MBL is much higher compare to NBL and SCBNL.
4. The loan loss provisioning and high volume of Non-performing loans of MBL is in increasing trend which is certainly not sign of efficient credit management. Whereas it is decreasing in case of NBL and SCBNL. However NBL's NPL is decreasing in higher rate than that of SCBNL. It is recommended to MBL to adopt sound credit collection policy and other two banks to maintain and implement its credit policy even more efficiently, which would help them to decrease loan loss provision and non-performing loan. The policy should ensure rapid identification of delinquent loans, immediate contact with borrowers and continual follow-up until a loan recovery. The recovery of loan is the most challenging job for the bank. Therefore the banks must embrace a strengthen credit management.
5. Banks should also regularly follow the credit customer to confirm that whether the customers have utilized their credit for the same purpose committed at the time of taking credit from the bank.

There has been communication gap between the banks even though they are on the same business of banking.

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APPENDIX – (i) A
Capital adequacy ratio

NBL			
F/Y	**Tier i capital (Rs)**	**Tier ii capital (Rs)**	**Risk weighted assets**
2013/2014	5823242	442721	55034231
2014/2015	5722390	448534	55130201
2015/2016	5993212	523290	56013209
2016/2017	6020442	576329	58757302
2017/2018	6324231	667382	60223504

MBL			
F/Y	**Tier i capital (Rs)**	**Tier ii capital (Rs)**	**Risk weighted assets**
2013/2014	2935295	354231	29040456
2014/2015	2989786	345432	29687241
2015/2016	3025423	360328	29945421
2016/2017	3003224	398242	30434539
2017/2018	3203236	403250	30934506

SCBNL			
F/Y	**Tier i capital (Rs)**	**Tier ii capital (Rs)**	**Risk weighted assets**
2013/2014	4030499	565324	38089102
2014/2015	4042423	577214	39665609
2015/2016	4323580	574342	40256342
2016/2017	4245599	582952	38508223
2017/2018	4709864	623652	43470427

Source: Annual reports of NBL, MBL, and SCBNL from the F/Y 2013 to 2018

APPENDIX (i) B
Leverage ratio

NBL			
F/Y	**Core capital (Rs)**	**Total assets (Rs)**	**Leverage ratio**
2013/2014	5823242	55034231	0.071
2014/2015	5722390	55130201	0.069
2015/2016	5993212	56013209	0.073
2016/2017	6020442	58757302	0.076
2017/2018	6324231	60223504	0.079

MBL			
F/Y	**Core capital (Rs)**	**Total assets (Rs)**	**Leverage ratio**
2013/2014	2935295	43225305	0.068
2014/2015	2989786	44532504	0.079
2015/2016	3025423	46723901	0.064
2016/2017	3003224	47045302	0.063
2017/2018	3203236	46999308	0.079

SCBNL			
F/Y	**Tier i capital (Rs)**	**Total assets (Rs)**	**Leverage ratio**
2013/2014	4030499	38089102	0.073
2014/2015	4042423	39665609	0.067
2015/2016	4323580	40256342	0.075
2016/2017	4245599	38508223	0.072
2017/2018	4709864	43470427	0.079

Source: Annual reports of NBL, MBL, and SCBNL from the F/Y 2013 to 2018

APPENDIX (i) C

Current Ratio

NBL			**(Rs. In Million)**
F/Y	**Current Assets (Rs)**	**Current Liabilities(Rs)**	**Ratio (Times)**
2013/2014	13313.4	16384.73	0.81
2014/2015	13868.31	15135.42	0.92
2015/2016	14244.03	15153.01	0.94
2016/2017	14971.8	15420.81	0.97
2017/2018	18133.81	20352.55	0.89

MBL			**(Rs. In Million)**
F/Y	**Current Assets (Rs)**	**Current Liabilities(Rs)**	**Ratio (Times)**
2013/2014	3340.25	4410.21	0.75
2014/2015	7517.89	8359.64	0.90
2015/2016	11144.32	12506.95	0.89
2016/2017	13755.73	14554.81	0.94
2017/2018	17906.12	19350.83	0.92

SCBNL			**(Rs. In Million)**
F/Y	**Current Assets (Rs)**	**Current Liabilities(Rs)**	**Ratio (Times)**
2013/2014	13313.4	16384.73	0.81
2014/2015	13868.31	15135.42	0.92
2015/2016	14244.03	15153.01	0.94
2016/2017	14971.8	15420.81	0.97
2017/2018	18133.81	20352.55	0.89

Source: Annual reports of NBL, MBL, and SCBNL from the F/Y 2013 to 2018

APPENDIX – (i) D

Cash & Bank Balance to Total Deposit

NBL			(Rs. In Million)
F/Y	**Cash & Bank Balance (Rs)**	**Total Deposit(Rs)**	**Ratio (%)**
2013/2014	1051.82	15506.42	6.78
2014/2015	1144.77	13447.66	8.51
2015/2016	970.48	14119.03	6.87
2016/2017	559.38	14586.6	3.83
2017/2018	630.23	19347.4	3.26

MBL			(Rs. In Million)
F/Y	**Cash & Bank Balance (Rs)**	**Total Deposit(Rs)**	**Ratio (%)**
2013/2014	338.92	4174.76	8.11
2014/2015	926.53	7922.76	11.69
2015/2016	1226.92	11524.68	10.64
2016/2017	1340.48	14254.57	9.4
2017/2018	2336.52	18927.30	12.34

SCBNL			(Rs. In Million)
F/Y	**Cash & Bank Balance (Rs)**	**Total Deposit(Rs)**	**Ratio (%)**
2013/2014	825.26	15835.75	5.21
2014/2015	1512.3	18755.64	8.06
2015/2016	2023.16	21161.44	9.56
2016/2017	1111.12	19363.47	5.74
2017/2018	1276.24	23061.03	5.53

Source: Annual report of NBL, MBL and SCBN from the F/Y 2013 to 2018

APPENDIX – (i) E

Cash and Bank Balance to Current Assets Ratio

NBL			(Rs. In Million)
F/Y	**Cash & Bank Balance (Rs)**	**Current Assets (Rs)**	**Ratio**
2013/2014	1051.82	13313.4	7.9
2014/2015	1144.77	13868.31	8.25
2015/2016	970.48	14244.03	6.81
2016/2017	559.38	14971.8	3.74
2017/2018	630.23	18133.81	3.47

MBL			(Rs. In Million)
F/Y	**Cash & Bank Balance (Rs)**	**Current Assets (Rs)**	**Ratio**
2013/2014	338.92	3340.25	10.14
2014/2015	926.53	7517.89	12.32
2015/2016	1226.92	11144.32	11
2016/2017	1340.48	13755.73	9.7
2017/2018	2336.52	17906.12	13.05

SCBNL			(Rs. In Million)
F/Y	**Cash & Bank Balance (Rs)**	**Current Assets (Rs)**	**Ratio**
2013/2014	825.26	18330.82	4.5
2014/2015	1512.3	20797.60	7.27
2015/2016	2023.16	20093.71	10.07
2016/2017	1111.12	19322.68	5.75
2017/2018	1276.24	21472.35	5.94

Source: Annual report of NBL, MBL, and SCBNL from the F/Y 2013 to 2018

APPENDIX – (i) F

Loan and Advances to Current Asset Ratio

NBL			**(Rs. In Million)**
F/Y	**Loan & Advances (Rs)**	**Current Assets (Rs)**	**Ratio (%)**
2013/2014	7437.9	**13313.4**	55.87
2014/2015	7755.95	**13868.31**	55.92
2015/2016	8189.99	**14244.03**	57.5
2016/2017	10586.17	**14971.8**	70.7
2017/2018	12922.54	**18133.81**	71.26

MBL			**(Rs. In Million)**
F/Y	**Loan & Advances (Rs)**	**Current Assets (Rs)**	**Ratio (%)**
2013/2014	2564.43	3340.25	76.77
2014/2015	5772.14	7517.89	76.78
2015/2016	7130.12	11144.32	63.98
2016/2017	10126.05	13755.73	73.61
2017/2018	12776.21	17906.12	71.35

SCBNL			**(Rs. In Million)**
F/Y	Loan & Advances (Rs)	Current Assets (Rs)	Ratio (%)
2013/2014	5364	18330.82	29.26
2014/2015	5695.82	20797.60	27.39
2015/2016	6410.24	20093.71	31.9
2016/2017	8143.21	19322.68	42.14
2017/2018	8935.42	21472.35	41.61

Source: Annual report of NBL, MBL, and SCBNL from the F/Y 2013 to 2018

APPENDIX – (i) G

Loan and Advances to total deposit ratio

NBL			(Rs. In Million)
F/Y	**Loan & Advances (Rs)**	**Total Deposit (Rs)**	**Ratio (%)**
2013/2014	7437.9	15506.42	47.97
2014/2015	7755.95	13447.66	57.67
2015/2016	8189.99	14119.03	58
2016/2017	10586.17	14586.6	72.57
2017/2018	12922.54	19347.4	66.79

MBL			(Rs. In Million)
F/Y	**Loan & Advances (Rs)**	**Total Deposit (Rs)**	**Ratio (%)**
20132/2014	2564.43	4174.76	61.43
2014/2015	5772.14	7922.76	72.85
2015/2016	7130.12	11524.68	61.87
2016/2017	10126.05	14254.57	71.04
2017/2018	12776.21	18927.30	67.5

SCBNL			(Rs. In Million)
F/Y	**Loan & Advances (Rs)**	**Total Deposit (Rs)**	**Ratio (%)**
2013/2014	5364	15835.75	33.87
2014/2015	5695.82	18755.64	30.37
2015/2016	6410.24	21161.44	30.29
2016/2017	8143.21	19363.47	42.05
2017/2018	8935.42	23061.03	38.75

Source: Annual report of NBL, BL, and SCBNL from the F/Y 2013 to 2018

APPENDIX – (i) H

Total Investment to Total Deposit Ratio

NBL			(Rs. In Million)
F/Y	**Total Investment (Rs)**	**Total Deposit (Rs)**	**Ratio (%)**
2013/2014	8199.51	15506.42	52.88
2014/2015	6031.17	13447.66	44.85
2015/2016	5835.94	14119.03	41.33
2016/2017	4267.23	14586.6	29.25
2017/2018	6178.53	19347.4	31.93

MBL			(Rs. In Million)
F/Y	**Total Investment (Rs)**	**Total Deposit (Rs)**	**Ratio (%)**
2013/2014	1822.16	4174.76	43.65
2014/2015	1705.24	7922.76	21.52
2015/2016	3862.48	11524.68	33.51
2016/2017	3934.19	14254.57	27.6
2017/2018	5602.86	18927.30	29.6

SCBNL			(Rs. In Million)
F/Y	**Total Investment (Rs)**	**Total Deposit (Rs)**	**Ratio (%)**
2013/2014	9275.88	15835.75	58.57
2014/2015	10357.68	18755.63	55.22
2015/2016	11360.33	21161.44	53.68
2016/2017	9702.55	19363.47	50.1
2017/2018	12847.54	23061.03	55.71

Source: Annual report of NBL, MBL, and SCBNL from the F/Y 2013 to 2018

APPENDIX – (i) I

Loan and Advances to Total Working Fund Ratio

NBL			**(Rs. In Million)**
F/Y	**Loan And Advances (Rs)**	**Total Working Fund (Rs)**	**Ratio (%)**
2013/2014	7437.9	17629.25	42.2
2014/2015	7755.95	16562.61	46.83
2015/2016	8189.99	16745.48	48.91
2016/2017	10586.17	17186.33	61.6
2017/2018	12922.54	22329.97	57.87

MBL			**(Rs. In Million)**
F/Y	**Loan And Advances (Rs)**	**Total Working Fund (Rs)**	**Ratio (%)**
2013/2014	2564.43	4973.9	51.56
2014/2015	5772.14	9014.24	64.03
2015/2016	7130.12	13255.50	53.79
2016/2017	10126.05	16274.06	62.22
2017/2018	12776.21	21330.14	59.9

SCBNL			**(Rs. In Million)**
F/Y	**Loan And Advances (Rs)**	**Total Working Fund (Rs)**	**Ratio (%)**
2013/2014	5364	18443.07	29.1
2014/2015	5695.82	21000.5	27.12
2015/2016	6410.24	23642.06	27.11
2016/2017	8143.21	21893.58	37.2
2017/2018	8935.42	25776.33	34.66

Source: Annual report of NBL, MBL, and SCBNL from the F/Y 2013 to 2018

APPENDIX – (i) J

Return on Loan and Advances Ratio

NBL			(Rs. In Million)
F/Y	**Net Profit (Rs)**	**Loan & Advances (Rs)**	**Ratio (%)**
2013/2014	271.64	7437.9	3.65
2014/2015	416.24	7755.95	5.37
2015/2016	455.31	8189.99	5.56
2016/2017	518.63	10586.17	4.9
2017/2018	635.3	12922.54	4.92

MBL			(Rs. In Million)
F/Y	**Net Profit (Rs)**	**Loan & Advances (Rs)**	**Ratio (%)**
2013/2014	57.11	2564.43	2.23
2014/2015	116.82	5772.14	2.02
2015/2016	152.67	7130.12	2.14
2016/2017	232.15	10126.05	2.29
2017/2018	350.54	12776.21	2.74

SCBNL			(Rs. In Million)
F/Y	**Net Profit (Rs)**	**Loan & Advances (Rs)**	**Ratio (%)**
2013/2014	479.21	5364	8.93
2014/2015	506.93	5695.82	8.9
2015/2016	537.8	6410.24	8.39
2016/2017	536.24	8143.21	6.58
2017/2018	658.75	8935.42	7.37

Source: Annual report of NBL, MBL, and SCBNL from the F/Y 2013 to 2018

APPENDIX – (i) K

Return on Total Working Fund Ratio

NBL			(Rs. In Million)
F/Y	**Net Profit (Rs)**	**Total Working Fund (Rs)**	**Ratio (%)**
2013/2014	271.64	17629.25	1.54
2014/2015	416.24	16562.61	2.51
2015/2016	455.31	16745.48	2.72
2016/2017	518.63	17186.33	3.02
2017/2018	635.3	22329.97	2.84

MBL			(Rs. In Million)
F/Y	**Net Profit (Rs)**	**Total Working Fund (Rs)**	**Ratio (%)**
2013/2014	57.11	4973.9	1.15
2014/2015	116.82	9014.24	1.29
2015/2016	152.67	13255.50	1.15
2016/2017	232.15	16274.06	1.43
2017/2018	350.54	21330.14	1.64

SCBNL			(Rs. In Million)
F/Y	**Net Profit (Rs)**	**Total Working Fund (Rs)**	**Ratio (%)**
2013/2014	479.21	18443.07	2.59
2014/2015	506.93	21000.5	2.41
2015/2016	537.8	23642.06	2.27
2016/2017	536.24	21781.67	2.46
2017/2018	658.75	25776.33	2.55

Source: Annual report of NBL, MBL, and SCBNL from the F/Y 2013 to 2018

APPENDIX – (i) L (1)

Correlation between Total Deposit and Loan and Advances of NBL							
F/Y	**Total Deposit (X)**	**Loan & Advances (Y)**	**x= (X-$\overline{X}$)**	**y= (Y- $\overline{Y}$)**	**x^2**	**y^2**	**xy**
2013/04	15506.42	7437.9	105	-1940.61	11025	3765967.17	-203764.05
2014/05	13447.66	7755.95	-1953.76	-1622.56	3817178.14	2632700.95	3170092.83
2015/06	14119.03	8189.99	-1282.39	-1188.52	1644524.11	1412579.79	1524146.16
2016/07	14586.6	10586.17	-814.82	1207.66	663931.63	1458442.67	-984025.52
2017/08	19347.4	12922.54	3945.98	3544.03	15570758.2	12560148.6	13984671.5
N= 5	$\overline{X}$=15401.4	$\overline{Y}$=9378.51			21707417.1	21829839.2	17491120.9

Co-efficient of Correlation between Total Deposit and Loan and Advances

Now, we have

N= 5 $\sum x^2$ =21707417.1

$\sum y^2$ =21829839.2

$\sum xy$ =17491120.9

Correlation of coefficient can be calculated by using the following formula:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{17491120.9}{\sqrt{21707417.1}\ \sqrt{21829839.2}}$$

$$r = \frac{17491120.9}{21768533.1}$$

$r = 0.8$ $r^2 = 0.64$

$$P.Er. = 0.6745\ \frac{1 - r^2}{\sqrt{N}} \qquad P.Er. = 0.6745\ \frac{1 - 0.64}{\sqrt{5}} \quad P.Er. = 0.11 \qquad 6P.Er. = 0.66$$

APPENDIX – (i) L (2)

Correlation between Total Deposit and Loan and Advances of MBL							
F/Y	**Total Deposit(X)**	**Loan & Advances (Y)**	**x= (X-$\bar{X}$)**	**y= (Y- $\bar{Y}$)**	**x^2**	**y^2**	**xy**
2013/04	4174.76	2564.43	-7186.05	-5109.36	51639314.6	26105559.6	36716116.4
2014/05	7922.76	5772.14	-3438.05	-1901.65	11820187.8	3616272.72	6537967.78
2015/06	11524.68	7130.12	163.87	-543.67	26853.38	295577.07	-89091.2
2016/07	14254.57	10126.05	2893.76	2452.26	8373846.94	6013579.11	7096251.9
2017/08	18927.30	12776.21	7566.49	5102.42	57251770.9	26034689.9	38607409.9
N= 5	$\bar{X}$=11360.8	$\bar{Y}$=7673.79			129111974	62065678.4	88868654.8

Now, we have

N= 5 $\sum x^2 = 129111974$

$\sum y^2 = 62065678.4$

$\sum xy = 88868654.8$

Correlation of coefficient can be calculated by using the following formula:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{88868654.8}{\sqrt{129111974}\sqrt{62065678.4}}$$

$$r = \frac{88868654.8}{89517750.43}$$

$r = 0.99$ $r^2 = 0.98$

$$P.Er. = 0.6745\frac{1-r^2}{\sqrt{N}} \quad P.Er. = 0.6745\frac{1-0.98}{\sqrt{5}} \quad P.Er. = 0.006 \quad 6P.Er. = 0.036$$

APPENDIX – (i) L (3)

Correlation between Total Deposit and Loan and Advances of SCBNL							
F/Y	**Total Deposit(X)**	**Loan & Advances (Y)**	**x= (X-$\bar{X}$)**	**y= (Y- $\bar{Y}$)**	**x^2**	**y^2**	**xy**
2013/04	15835.75	5364	-3799.72	-154574	14437872.1	2389312.15	5873379.19
2014/05	18755.64	5695.82	-879.83	-1213.92	774100.83	1473601.77	1068043.23
2015/06	21161.44	6410.24	1525.97	-499.5	2328584.44	249500.25	-762222.02
2016/07	19363.47	8143.21	-272	1233.47	73984	1521448.24	-335503.84
2017/08	23061.03	8935.42	3425.56	2025.68	11734461.3	4103379.46	6939088.38
N= 5	$\bar{X}$=19635.47	$\bar{Y}$=6909.74			29349002.7	9737241.87	12782784.9

Now, we have

N= 5 $\sum x^2 = 29349002.7$

$\sum y^2 = 9737241.87$

$\sum xy = 12782784.9$

Correlation of coefficient can be calculated by using the following formula:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{12782784.9}{\sqrt{29349002.7}\sqrt{9737241.87}}$$

$$r = \frac{12782784.9}{16904971.35}$$

$r = 0.76$ $r^2 = 0.58$

$$P.Er. = 0.6745\frac{1-r^2}{\sqrt{N}} \quad P.Er. = 0.6745\frac{1-0.58}{\sqrt{5}} \quad P.Er. = 0.126 \quad 6P.Er. = 0.756$$

APPENDIX – (i) M (1)

Co-efficient of Correlation between Net Income and Loan and Advances

Correlation between Net Income and Loan and advances of NBL							
F/Y	**Net Income (X)**	**Loan and Advances (Y)**	**x= (X-$\overline{X}$)**	**y= (Y- $\overline{Y}$)**	**x^2**	**y^2**	**xy**
2013/2014	271.64	7437.9	-187.78	-1940.61	35261.33	3765967.17	364407.74
2014/2015	416.24	7755.95	-43.18	-1622.56	1864.51	2632700.95	70062.14
2015/2016	455.31	8189.99	-4.11	-1188.52	16.89	1412579.79	4884.82
2016/2017	518.63	10586.17	59.2	1207.66	3505.8	1458442.68	71493.47
2017/2018	635.3	12922.54	175.88	3544.03	30933.77	12560148.6	623324
N= 5	$\overline{X}$=459.42	$\overline{Y}$=9378.51			71582.3	21829839.2	1134172.17

Now, we have

N= 5 $\sum x^2 = 71582.3$

$\sum y^2 = 21829839.2$

$\sum xy = 1134172.17$

Correlation of coefficient can be calculated by using the following formula:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{1134172.17}{\sqrt{71582.3}\ \sqrt{21829839.2}}$$

$$r = \frac{1134172.17}{1250058.17}$$

$r = 0.91$ $r^2 = 0.83$

$$P.Er. = 0.6745\ \frac{1 - r^2}{\sqrt{N}} \qquad P.Er. = 0.6745\ \frac{1 - 0.83}{\sqrt{5}} \quad P.Er. = 0.05 \qquad 6P.Er. = 0.3$$

APPENDIX – (i) M (2)

Correlation between Net Income and Loan and advances of MBL							
F/Y	**Net Income(X)**	**Loan and Advances (Y)**	**x= (X-$\overline{X}$)**	**y= (Y- $\overline{Y}$)**	**x^2**	**y^2**	**xy**
2013/2014	57.11	2564.43	-124.75	-5109.36	15562.56	26105559.6	637392.66
2014/2015	116.82	5772.14	-65.04	-1901.65	4230.2	3616272.7	123683.32
2015/2016	152.67	7130.12	-29.19	-543.67	852.06	295577.07	15607.02
2016/2017	232.15	10126.05	50.29	2452.26	2529.08	6013579.11	123324.16
2017/2018	350.54	12776.21	168.68	5102.42	28452.94	26034689.9	860676.21
N= 5	$\overline{X}$=181.86	$\overline{Y}$=7673.79			51626.84	62065678.3	1760683.37

Now, we have

N= 5 $\sum x^2$ =51626.84

$\sum y^2$ =62065678.3

$\sum xy$ =1760683.37

Correlation of coefficient can be calculated by using the following formula:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{1760683.37}{\sqrt{51626.84}\ \sqrt{62065678.3}}$$

$$r = \frac{1760683.37}{2183988.32}$$

$r = 0.81$ $r^2 = 0.656$

$$P.Er. = 0.6745\ \frac{1 - r^2}{\sqrt{N}} \qquad P.Er. = 0.6745\ \frac{1 - 0.656}{\sqrt{5}} \quad P.Er. = 0.104 \qquad 6P.Er. = 0.624$$

APPENDIX – (i) M (3)

Correlation between Net Income and Loan and advances of SCBNL							
F/Y	**Net Income (X)**	**Loan and Advances (Y)**	**x= (X-$\overline{X}$)**	**y= (Y-$\overline{Y}$)**	**x^2**	**y^2**	**xy**
2013/2014	479.21	5364	-64.58	-1545.74	4170.58	2389312.15	99823.89
2014/2015	506.93	5695.82	-36.86	-1213.92	1358.66	1473601.77	44745.09
2015/2016	537.8	6410.24	-5.99	-499.5	35.88	249500.25	2992
2016/2017	536.24	8143.21	-7.55	1233.47	57	1521448.24	-9312.7
2017/2018	658.75	8935.42	114.96	2025.68	13215.8	4103379.46	232872.17
N= 5	$\overline{X}$=543.79	$\overline{Y}$=6909.74			18837.92	9737241.87	371120.45

Now, we have

N= 5 $\sum x^2$ =18837.92

$\sum y^2$ =9737241.87

$\sum xy$ =371120.45

Correlation of coefficient can be calculated by using the following formula:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{371120.45}{\sqrt{18837.92}\ \sqrt{9737241.87}}$$

$$r = \frac{371120.45}{428281.76}$$

$r = 0.866$ $r^2 = 0.75$

$$P.Er. = 0.6745\ \frac{1 - r^2}{\sqrt{N}} \quad P.Er. = 0.6745\ \frac{1 - 0.75}{\sqrt{5}} \quad P.Er. = 0.075 \quad 6P.Er. = 0.45$$

APPENDIX – (i) N (1)

Correlation between Interest Earned to Loan and Advances

Correlation between Interest Earned to Loan and Advances of NBL							
F/Y	**Interest Earned (X)**	**Loan and Advances (Y)**	**x= (X-$\overline{X}$**	**y= (Y- $\overline{Y}$)**	**x^2**	**y^2**	**xy**
2013/2014	1120.18	7437.9	16.51	-1940.61	272.58	3765967.17	-32039.47
2014/2015	1017.87	7755.95	-85.8	-1622.56	7361.64	2632700.95	139215.65
2015/2016	1001.62	8189.99	-102.05	-1188.52	10414.2	1412579.79	121288.47
2016/2017	1068.7	10586.17	-34.97	1207.66	1222.9	1458442.68	-42231.87
2017/2018	1310	12922.54	206.33	3544.03	42572.07	12560148.6	731239.71
N= 5	$\overline{X}$=1103.67	$\overline{Y}$=9378.51			61843.39	21829839.19	917472.49

Now, we have

N= 5 $\sum x^2 = 61843.39$

$\sum y^2 = 21829839.19$

$\sum xy = 917472.49$

Correlation of coefficient can be calculated by using the following formula:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{917472.49}{\sqrt{61843.39}\sqrt{21829839.19}}$$

$$r = \frac{917472.49}{1161892.98}$$

$r = 0.79$ $r^2 = 0.62$

$$P.Er. = 0.6745\ \frac{1 - r^2}{\sqrt{N}} \quad P.Er. = 0.6745\ \frac{1 - 0.62}{\sqrt{5}} \quad P.Er. = 0.115 \quad 6P.Er. = 0.69$$

APPENDIX – (i) N (2)

Correlation between Interest Earned to Loan and Advances of MBL							
F/Y	**Interest Earned (X)**	**Loan and Advances (Y)**	**x= (X-$\overline{X}$)**	**y= (Y- $\overline{Y}$)**	**x^2**	**y^2**	**xy**
2013/2014	326.22	2564.43	-389.11	-5109.36	151406.59	26105559.6	1988103.07
2014/2015	459.51	5772.14	-255.82	-1901.65	65443.87	3616272.72	486480.1
2015/2016	731.4	7130.12	16.07	-543.67	258.24	295577.07	-8736.78
2016/2017	886.8	10126.05	171.47	2452.26	29401.96	6013579.11	420489.02
2017/2018	1172.74	12776.21	457.41	5102.42	209223.91	26034689.9	2333897.9
N= 5	$\overline{X}$=715.33	$\overline{Y}$=7673.79			455734.57	62065678.4	5220233.31

Now, we have

N= 5 $\sum x^2 = 455734.57$

$\sum y^2 = 62065678.4$

$\sum xy = 5220233.31$

Correlation of coefficient can be calculated by using the following formula:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{5220233.31}{\sqrt{455734.57}\sqrt{62065678.4}}$$

$$r = \frac{5220233.31}{5318399.97}$$

$r = 0.98$ $r^2 = 0.96$

$$P.Er. = 0.6745\frac{1-r^2}{\sqrt{N}} \quad P.Er. = 0.6745\frac{1-0.96}{\sqrt{5}} \quad P.Er. = 0.012 \quad 6P.Er. = 0.07$$

APPENDIX – (i) N (3)

Correlation between Interest Earned to Loan and Advances of SCBNL							
F/Y	**Interest Earned (X)**	**Loan and Advances(Y)**	**x= (X-$\bar{X}$)**	**y= (Y- $\bar{Y}$)**	**x^2**	**y^2**	**xy**
2013/2014	1013.64	5364	-47.45	-1545.74	2251.5	2389312.15	73345.36
2014/2015	1001.36	5695.82	-59.73	-1213.92	3567.67	1473601.77	72507.44
2015/2016	1042.17	6410.24	-36.92	-499.5	1363.1	249500.25	18441.54
2016/2017	1058.67	8143.21	-2.42	1233.47	5.86	1521448.24	-2984.98
2017/2018	1189.6	8935.42	128.51	2025.68	16514.82	4103379.46	260320.14
N= 5	$\bar{X}$=1061.09	$\bar{Y}$=6909.74			23702.95	9737241.87	421629.5

Now, we have

N= 5 $\sum x^2 = 23702.95$

$\sum y^2 = 9737241.87$

$\sum xy = 421629.5$

Correlation of coefficient can be calculated by using the following formula:

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{421629.5}{\sqrt{23702.95}\sqrt{9737241.87}}$$

$$r = \frac{421629.5}{480424.48}$$

$r = 0.88$ $r^2 = 0.77$

$$P.Er. = 0.6745\frac{1-r^2}{\sqrt{N}} \quad P.Er. = 0.6745\frac{1-0.77}{\sqrt{5}} \quad P.Er. = 0.28 \quad 6P.Er. = 1.68$$