CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Financial sector of any economy plays a vital role in its development and are currently viewed as catalyst in the process economic growth of a country. This sector is the backbone of developing country like Nepal. This sector has been gradually developed from the time of economic liberalization in Nepal. There is no doubt that a sound financial system will certainly boost the pace of development.

Financial sector of Nepalese economy is composed of two sector i.e., banking sector and non- Banking sector. Banking sector means which purely provides Banking facilities like different range of short term and long term loans, collection of deposits (short term /long term), remittance service, LC, etc. whereas Non-Banking sector means which mainly does activities of deposits and loans and advances on narrow basis. Banking sector of Nepal comprises of Nepal Rastra Bank, commercial Banks & development Banks. Nepal Rastra Bank is apex body of all financial institutions of Nepal. The establishment of commercial Bank has reached up to 32 in Nepalese economy. Non- Banking sector of Nepal mainly includes finance companies, cooperative units, micro-credit development Banks, non-government organizations performing limited Banking transactions.

Financial sector in Nepalese economy is a symbol of customary organization, where other sector's organization portrays to be like that. Financial sector represents competition, transparency, financial discipline and self-governance. The main activity of financial sector is to play on interest rate whether it is on deposits or loans and advances. Beside this, it has to deal with statutory reserve requirement, targeted credit programs, securities, trading insurance service, practices like maintaining capital adequacy, loan loss provision, auditing etc.

Financial sector is a system on which whole body of an economy stands. It is applicable to any type of economy whether it is developing or developed. Furthermore, it also supports other sector. It works as lubricant for other sectors to grow. Financial intermediaries are gap fulfiller that bridges between borrower and lender or saver and investor. Financial intermediaries come up with different avenues to accept money of savers and provide to investors at competitive price to flourish.

A sound financial system fulfill requirement of all types of customers. In developed economy, financial institutions have to come with varieties of products and services so that all needs of particular economy can be fulfilled. Effectiveness and efficiency are key element for financial sector to survive in any economy. Moreover, any activity must be within a boundary line of central Bank of that country or regulating body. Financial sector has to provide interest on its deposits therefore, has compulsion to lend money. Then, there is an issue of defaulter case.

Commercial Banks collect deposits from the public and the largest portion of the deposited money is utilized in disbursing loans and advances. The balance sheets of the commercial Banks reflect deposits constitute a major portion of the liabilities and loans and advances constitute a major portion of the assets. Similarly the profit of the Bank depends upon the spread that it enjoys between the interest it receives from the borrowers and is paid to the savers. An average Bank generates 65-75% of its revenues through its lending activities. The return that the Bank enjoys through loans and advances is very attractive but do not come free of cost and free of risk. There is risk inherent in lending portfolio. Banking sector is exposed to number of risk like interest rate risk, liquidity risk, credit risk, borrower's risk etc. Such risks in excessive form had led many Banks to go Bankrupt in a number of countries.

One of the most critical risks is the borrower's risk – the risk of non-payment of the disbursed loans and advances. Failure to collect money lent may sometimes results in the Bank's inability to make repayment of the money to the depositors and return to the shareholders and stakeholders. The risk involved is so high that it can bring Bank to a verge of Bankruptcy. The Bankers have the responsibility of safeguarding the interest of the depositors, the shareholders and the society they are serving. If a Bank behaves irresponsibility, the cost borne by the economy will be enormous.

Due to their central role in the economy, governments and central Banks try their best to rescue Banks from such situations. Hence to protect the Banks from such situation and protect depositors and shareholders money, central Bank issues various directives and guidelines from time to time with modifications and amendments for the sound regulation of the Banking system. All the Banks have to abide by the rules and regulation issued by the central Bank. Of the many directives, there are ten directives relating to the Banking prudential regulation/norms to be followed by the Banks.

Financial institutions in Nepal are growing in an unexpected manner and no doubt they will compete for each other's market share and provide cut throat competition in the market. In this scenario default rate is automatically going to increases either intentionally or unintentionally. Therefore it is one of greatest concern for financial intermediaries to handle such issue. This default is technically known as non-performing Assets (NPA). This default may be on principal, interest or principal and interest. It is normally not received on maturity period.

Non-performing Loan

Non –performing loan is the quantum risk assets those are not performing well and are in the verge of being written off at the cost of organization's profit earned or more correctly at the cost of stakeholder by this way or that way. Basically by reducing the value of the stakeholder wealth in every aspect keeping these views into consideration this study will concentrate on the non-performing loan and its impact on NBL.

Nepal Bank Limited, The first bank of Nepal is obviously a biome financial institution, which was established in 1994 B.S Kartik 30 with the principle of joint venture (Joint Venture between Govt. and General public). Now, NBL has one head office, 4 regional office and 110 branch offices.

Banking System in Nepal

Nepal is one of the land- locked countries in Asia covered by the UNESCAP region and is among the least developed of the developing countries. Land-lockedness is the major geographic weakness that became the main hindrance in overall development of Nepal. In the overall development of the Banking system in Nepal, the "Tejarath Adda" may be regarded as the father of modern Banking institution and for a quite a long time it tendered a good service to government servants as well as to the general public. If we turn into History, Prime Minister "Ranodip Singh" took initiative for financial and economic reforms. He introduced 'Tejarath Adda 'to provide credit facilities to general public at a very low rate. Basically concept of 'Tejarath Adda' was to provide loan by undertaking collateral of gold and silver. Government employees have facilities to take loan and that loan was slowly redeemed from their salary. Furthermore, successive Prime Minister Chandra Shamsher extended its service to outside Kathmandu Valley. Legal provision was made to prevent the practice of capitalization of Tejarath Adda. This step was towards modern

Banking in Nepal. But concept of “Kaushi Tosh Khana” brought by King Prithvi Narayan Shah was also step towards modern Banking in Nepal.

Tejarath Adda was only subjected to provide loans to general public. It did not accept deposits. At one point of time it faces financial crisis and failed to meet demand of general public. Prior to the establishment of Nepal Bank Ltd; borrowers totally relied upon crooked lenders, who charged very high interest rates and other charges. Beside this, these money lenders also undertake valuable collateral in form of land, building, and precious metal. Nepal Bank Ltd came into existence under the Nepal Bank Act 1937.The prelude of the Nepal Bank Act 1937 states the objectives of setting up the Nepal Bank Ltd as follows:

“In the absence of any Bank in Nepal, the economic progress of the country was being hampered and causing inconvenience to the people, and therefore, with the objective of fulfilling that need by providing services for the people and for the betterment of the country, this law is hereby promulgated for the establishment of the Bank and its operation”.

Nepal Bank was the first Bank to play dual role as commercial Bank and central Bank. Till the establishment of Nepal Rastra Bank, Nepal Bank Ltd carried out all the functions of central Bank. Nepal Bank Ltd was semi government Bank so it unwilling went to many sectors in spite of banking service needs. Because of this purpose, Rastriya Banijiya Bank a fully government owned Bank was established on 23rd January 1966.

Till 1984, Nepalese financial sector was dominated by two commercial Banks i.e. Rastriya Banijiya Bank and Nepal Bank Ltd. The commercial Bank act was amended in 1984 to increase growth of commercial Banks in order to provide Banking services to the needed sector. There was also provision for foreign investors to open commercial Banks in Nepal. In consequence, Nepal Arab

Bank Ltd. (Nabil Bank) was established on July 12, 1984, with the partnership of Dubai Bank Ltd., Dubai.

Before 1985 two Development Banks i.e., NIDC and ADB were the non-Banking financial institutions. Employees Provident Fund and National Insurance Corporation were established to increase the financial activities of the country.

Commercial Banking System in Nepal

The commercial bank is the oldest form of bank. In general, bank that performs all kinds of banking business and generally finances trade and commerce is called commercial bank. It occupies quite an important place in the framework of every economy.

The commercial banks are those banks, which pool together the scattered savings of the community and arrange for their productive use and generate profit. They accept deposits from the public and use the money to help the community by making loans to individuals, organizations, governments and business. Commercial banks, acquire funds from one group of surplus spending units and making these funds available to other deficit units facilitating the effective mobilization of resources, which in turn leads to sound economic growth of the country.

The main aim of a commercial bank is to earn profit like any other entity. It lends a certain percentage of the cash lying in deposits on higher interest rate than it pays on such deposits. The difference of interest on deposit received and loans advanced are the main source of its income. Thus commercial banks are merely a business firm engaged in financial intermediation as well as perform additional functions under strict supervision and control of the central bank.

In the context of Nepal the first commercial bank, “Nepal Bank Limited” was established in 1937 A.D. and the second “Rastriya Banijya Bank” was established in 1966 A.D.

Nepal has opened its door to foreign commercial banks in the kingdom almost a decade back. As the country followed economic liberalization, there was massive entrance of foreign banks in Nepal. Consequently, Nepal Arab Bank was established in 1985 A.D. Similarly, the Nepal Indosuez bank was established as a joint venture between Nepal and France in 1986 A.D. the legitimate entry of foreign commercial banks with full-fledged banking functions led to rapid growth of banking system. After 1990 economic liberalization policy obtained by the government, now there are 31 commercial banks operating banking activities in the country.

Profile of Nepal Bank Limited

His Majesty King Tribhuvan inaugurated Nepal Bank Limited on Kartik 30, 1994 Bikram Sambat. This maarked the beginning of an era of formal banking in Nepal. Until then all monetary tractions were carried out by private dealers and trading center.

Then Prime Minister Maharaja Juddha Shumsher J.B.R. speaking on the occasion with the kind permission of His Majesty the King stated this work which is being done in the larger interest of the nation is a great moment for me. Until today a bank could not be opened in Nepal. Therefore this bank, which is being established under the name of Nepal Bank Limited to fill that, need and to be inaugurated by His Majesty the King, is a moment of great joy and happiness.

The Bank's objectives to render service to the people whether rich or poor and to contribute to the nation's development will also need the support and best wishes of all, which I am confident, will be forthcoming.

In that era, very few understood or had confidence in this new concept of formal banking. Rising equity shares were not easy and mobilization of deposits even more difficult. This was evident when the bank floated equity shares worth NRs. 2,500,000, but was successful only in raising NRs. 842,000.

"In the absence of any bank in Nepal the economic progress of the country was being hampered and causing inconvenience to the people and therefore with the objective of fulfilling that need by providing service to the people and for the betterment of the country, this law in hereby promulgated for the establishment of the Bank and its operation".

The total deposits for the first year was NRs. 17,02,025 where current deposits was about NRs. 12,98,898 fixed was about NRs. 3,88,964 and saving was NRs. 14,163. Loan disbursed and outstanding at the end of the first year was NRs. 1,985,000.

From the very conception and its creation, Nepal Bank Ltd, was as joint venture between the government and the private sector. Out of 2500 equity shares of NRs. 100 face value, 40% was subscribed by the government and the balanced i.e. 60% was offered for the sale to private sector. There were only 10 shareholders when the bank first started.

Nepal Bank Limited, The first bank of Nepal was established in November 15, 1937 A.D (Kartik, 30, 1994). It was formed under the principle of Joint venture (Joint venture between govt. & general public). NBL's authorized capital was Rs. 10 million & issued capital Rs. 2.5 million of which paid-up capital was Rs. 842 thousand with 10 shareholders. The bank has been providing banking through its branch offices in the different geographical locations of the country.

Shareholding Composition

S.N.	Ownership	Percent
1	Government of Nepal	40.49
2	A Class Financial Institutions	4.92
3	NRB Licensed Financial Institutions	3.42
4	Other Institutions	0.52
5	General Public	49.94
6	Others	0.71
Total		100

Source: Nepal Bank Limited(www.nepalbank.com)

1.2 Statement of the Problem

Although financial institution is the backbone or engine of the growth of economy of Nepal, it has several problems like lack of smooth functioning of economy, different policies and guidelines of Nepal Rastra Bank, political instability, security problem, poor information system, over liquidity caused by lack of good lending opportunities, increasing non- performing assets etc. out of these problems, NPA is one of the serious problem faced by the commercial Banks. So every Bank has now put the NPA management under top priority. It is because; the NPA in the Banking system does not generate adequate revenue for the Bank, reduces the profitability and ultimately may lead to the failure of the Bank. So, in the recent days, not only government owned Banks but some of the Banks under private ownership are also suffering from NPA burden. This question regarding to NPA with special reference to Nepal Bank Limited is stated below:

- What is the volume of non-performing loan in NBL?
- What is the trend of non-performing loan in NBL?
- How does if affect on the net profit of the bank?
- How generation of non- performing loan can be controlled?

1.3 Objectives of the study

The major objective of this research is to examine the level of non- performing loans (NPLs). The specific objectives are;

a) To evaluate the Non-performing Loans of Nepal Bank Limited.
b) To analyze the trend of the non-performing loan of Nepal Bank Limited.
c) To examine the relationship of non-performing loan and profitability position.

1.4 Significance of the Study

From the in-depth analysis and evaluation of non-performing loan of Nepal Bank Limited it is hoped that this study will be helpful in providing some of the present issues, latest information and data regarding the NPA of the concerned banks. This study also gives the real picture of the current nonperforming assets to its stakeholders. The study will be helpful for the Banking industry to identify and to trace the contributing factors causing NPA and to reduce its level. This report will be helpful for regulating authority to know existing recovery problem so as to have some modification of directives, laws and other proceeding. This report may also be helpful in providing information to future researchers in overcoming the problems that they may face while doing research in the similar type of the research work.

1.5 Limitations of the Study

Today world is dynamic, everything existing here are of limited character. Every principle rule and formula and conditions are applied within the limitations likewise, this study cannot escape from limitations the study is confined only to non-performing loan in NBL. Following factors have limited the scope of this study.

- The research focuses only on the non-performing loan of Nepal Bank Limited, so various other aspects of the bank remain unexplored.

- The study is considered only with NPL of Nepal Bank Limited in the study area. So this study does not consider the aspect of bank. Only few articles and text books are available in the current subject in Nepalese prospective.
- As such the availability of pertaining data and information are also limited.

- Primary data collections have its own limitation, since most of the banks are so strict to reveal the information on their NPLs.
- Their assumption bias in the question of efficiency factor, like the NPL level is the measuring mechanism of their performances.
- This is the basic reason that the commercial banks do not pay heed to release the exact NPL information.
- However, whatever data are available from NRB and annual report of NBL. Therefore this study will be based on the secondary data. So, the period of the study is limited only for the fiscal year 2007 to 2011.

1.6 Chapter Scheme

According to the objectives of this study, the study has been classified into five chapters and the chapters are as follows.

Chapter I: The first chapter deals with the introduction including general background of the study, statement of the problem, objectives of the study, significance of the study, scope and limitation of the study and organization of the study.

Chapter II: Second chapter follows the first chapter and carries meaningful importance in the whole work. It is the collections of authenticated views in regard to the matter of study. It is collected through various journals, news paper, websites, related books and news letters and more importantly Nepal Rastra Bank issues i.e. NRB samachar, directives, circulars and statistical data.

Chapter III: The third chapter has been provided research methodology including research design, nature and source of data, population and sample size, method of analysis and data analysis tools.

Chapter IV: The forth chapter includes data presentation and analysis. It has been presented the collected data and result of the study in required form. This chapter deals with the main part of the study.

Chapter V: Finally, the fifth chapter deals with summary and conclusion to the study and recommendations given to the commercial banks. This is the ending of the work. Having done all the research work up to the fourth chapter. The works comes out with a consequence that should be deliberated in this chapter as a solution.

At the end of the chapters bibliography and appendices have been incorporated.

CHAPTER-II

REVIEW OF LITERATURE

This chapter effort has been made to examine and review some of the related books, articles published in different economic journals, bulletins, dissertation papers, magazines, newspapers, and websites. The literature review shares the reader the results of other studies that are closely related to the study being reported and to the larger, outgoing dialogue in the literature about a topic, filling in gaps and extending prior studies. It also provides a framework for establishing the importance of the study, as well as a benchmark for comparing the results of a study with other findings.

2.1 Conceptual Framework

Under this heading following issues are discussed under the Nepalese prospective.

a) Loan, Discount and Overdraft

Commercial Bank's main function is to create credit from its borrowed fund. The Bank doing so converts its liability into active asset. Loans and advances are the assets coming from such activities. Loans and advances dominate the asset side of the balance sheet of any Bank and also constitute the primary sources of income to the Banks. They are also the least liquid of the Bank's entire asset. Loans and advances may take different forms and are allowed against various types of securities. Loans, overdrafts, discounting of bills of exchange etc. are some of the forms of Bank lending. Granting loans and advances always carries a certain degree of risk. This loans and advances are also regarded as risky assets of Banks.

b) Pass due/ overdue

An amount due under any credit facility is treated as past due or overdue when it has not been paid on the due date fixed by the bank. Any amount due to the bank under any credit facility is overdue if it is not paid on the due date fixed by the bank.

c) Loan classification

Loan classification refers to the process banks use to review their loan portfolio and assign loans to categories of grades based on the perceived risk and other relevant characteristics of loans and as per guidelines of central banks. In the context of Nepal as per guidelines of NRB, loans are classified into four categories namely pass, substandard, doubtful and loss.

d) Performing loan

Performing loans are those that repay principal and interest timely to the bank from the cash flow it generates. In the context of Nepal, the loans classified as ‘pass’ category is termed as performing loan.

e) Non-performing loans/ Non-performing assets

The loans that do not repay principal and interest timely to the bank. A common feature of NPL appears to be that a payment if more than 90 days past due. In Nepal, if the loan is past due for over 3 months, it is NPL. Hence the loans falling under substandard, doubtful and loss categories are regarded as NPL.

However, adopting a proper risk management in place some loans turns to be distressed in due course of time to various unavoidable reasons. Such distressed loans whose due date exceeds 90 days are called NPL. These NPL should be managed very carefully and technically in order to avoid a huge loss for the institution.

It will be imperative to understand the terms NPA and NPL. NPA relates to net profit financial assets. In this sense, NPA are defined as debt instrument whose obligors are unable to discharge their liabilities as they become due. Therefore, NPAs comprises the wider area of assets portfolio where as the NPL is referred to distressed loans classified as per regulation of the central bank. Since the loan being the significant component on financial asset portfolio, NPL and NPA are used interchanging but if there are no other assets other than loans to denote, it will be better to say NPL.

Nepalese financial system still has a high level of NPL. System's soundness cannot be restored without resolving the problem of NPL. The problem of high level of NPL needs to be addressed in time resolved as soon as possible. The sooner the problem is resolved, the quicker the crisis is removed from the system. In order to resolve the problem of NPL we should require initiating various measures in the system. Preventive measures will be helpful to control the growth and curative measure will be beneficial to lower down the level of NPL in the system. In order to resolve the problem the root cause of the problem needs to be identified, analyzed and properly addressed (Khubchandani, 2000).

If the NPLs are already at outstanding level, curative measures are required to lower down the level of NPL. If the level of NPL is at high level despite of having properties management, best credit practices and strong compliance mechanism in place, then the curative measures become significantly important. In such a situation, the authorities need to pay greater attention because the system might be falling adverse effect of external factors or shocks beyond the control of institution. In such a circumstance, extra supportive measures are required to be introduced by the supervisory authorities and the government (NBL, Annual Report 2010).

If the NPLs in the system is growing due to the lack of good credit culture corporate governance and risk management skills with in the institutions, prudential measure such as; issuance of prudential regulation, compliance of regulation and strengthening of internal risk management skill, formulating of risk control policies and procedures will be beneficial. These are generally called preventive measures controlling the growth of NPLs (Khubchandani, 2000).

Sometimes, the system may require introducing of both types of preventive and curative measures simultaneously when the system's NPL is growing and is already at the outstanding level. In order to response such type of situation in other countries, broad bank restructuring had been introduced in form of a reduction of NPL in the banking system bank capitalization, the implementation of regulations and norms to bring about improved bank governance and risk measurement, the implementation of rules to promote transparency and efforts to strength the capacity of supervisory authorities. NRB is also adopting both the curative and preventive measures to lower down the level of NPLs within comprehensive financial sector reform program (NRB, 2010)

Generally speaking, a loan is classified as NPLs only after it has been appears at least three months. The detail and classification standards of NPLs may vary from country to country. In the Nepalese case the three months above overdue rule has been adopted (Khubchandani, 2000).

f) Loan loss provision (LLP)

LLP is the accumulated fund that is provided as a safeguard to cover possible losses upon classification of risk inherited by individual loans. There is risk inherent in every loan. Hence provisioning made as cushion against possible losses and to reflect the true picture of the bank's asset. Hence there is practice of showing net loan (total loan loss provision) in financial statements one percent provisions for total credit is and ideal position as it is the minimum requirement for all good loans. In Nepal, 1 percent, 25 percent, 50 percent and 100 percent provisioning should be made for pass, substandard, doubtful and loss loans respectively.

2.2 Review of Relevant NRB Directives

Nepal Rastra Bank issues various relating banking regulations and prudential norms. NRB has provided following directives for classification of loan and advances and it's loss provisioning for the purpose of minimizing possible risk in bank's lending by using the authority given by sub section 1 section 23 of NRB acts 2012 (Revised) and section 19 (ka) of commercial bank act 2031 (Revised).

> Classification of loan and advances on the basis of overdue again schedule. A bank is required to classify their loan on the basis of overdue.
>
> Classification of loan and advance.

Loan and advances is required to classify

- **Pass**

This class includes the loan that principal overdue up to 3 month. It is also defined and classified and classified as performing loan.

- **Substandard**

Loan with principal overdue above 3 month and up to 6 months called substandard loan.

- **Doubtful**

All loans and advances which are past due for a period 6 months to 1 year shall be included in this category.

- **Loss**

Loan with principal overdue above 1 year called bad loan, which have least possibility of recover or considered unrecoverable and those having this possibility of even partial recovery in future.

Loans and advances failing in the category of substandard, doubtful and loss are classified and defined as NPL.

There is no adequate availability of books in this topic but some relevant books are available in the market. These books are categorized in the from international publications and Nepali publications as follows. Book named "Banking Management" says that in banking sector or transaction, an unavoidable of loan management and its methodology is regarded very important. Under this management, many subject matters are considered and thought, for example, there subject matters like the policy of loan flow, the documents of loan flow, loan administration, audit of loan, renewal of loan, the condition of loan flow and the provision of security, the provision of the payment of capital and its interest and other such procedures. This management plays a great role in healthy competitive activities (Bhandari D, 2003:170)

It is very important to be reminded that most of the bank failures in the world are due to shrinkage in the value of loan and advances. Hence, risk of non-payment of loan is known as credit risk or default risk (Dahal N, 2002:114)

Portfolio management helps to minimize or manage the credit risks by spreading over the risk to various portfolios. These methods of managing credit risk is guided by the saying do not put all the eggs in a single basket (Bhandari D, 2004:300).

A book for beginners in banking is writer duo Mr. Bhuwan Dahal and Mrs. Sarita Dahal namely Á hand book to Banking' has emphasized on various aspects of banking in brief that is required to exercise sound banking practices. It says "A bank is judged on the basis of capital, assets quality, management earning liability and sensibility to market risk." Almost all the government banks are running at loss while all the private sector banks are showing profits, it is very difficult to call them sound if appraised from CAMELS approach. Some banks have very low capital adequacy ratio while some banks have piled up NPL. Similarly banks do not have proper system in place for management of market risks. Writer duo is more specific in this book while marking financial institutions in terms of standard form of yard sticks i.e. CAMELS. Nepalese banking sector as they mean are yet to be streamlined and systematized. Due to this reason credit processing and calculation of market risks are given low priority while extending advances. There are the main causes of siphoning of funds and impairment of loans. As a result whole financial sector is heading towards a huge and accumulated NPL. Therefore, suggestion is given by the writer duo to NRB to control the system by implementing directives enforceable/ actable in this regard (Dahal B. and Dahal S., 2007:171).

It seems that the problem of cumulating NPL is also raising its head to neighboring country in India where banking system is considered to be more systematic advanced and up to the global standard. Therefore Reserve Bank of India (RBI), the central bank of India has given paramount preferences to the mounting NPL in financial sectors of Indian economy (Khubchandani, 2000).

The book on 'Managerial Finance' written by Weston and Brigham stress on Risk- Return Trade Off as one of the major financial functions. They believe that the maximization of the value of the firm can be achieved through maximization of returns in one hand and minimization of risk on the other. The relationship between the expected future state of the economy and the performance of individual firms enables a relationship to be set forth between the state of the economy and the returns from investment in firms (Weston and Brigham, 1980 : 93).

Describing about the new area of finance, James C. Van Horme in his book ‘Financial Management and Policy’ stresses on two broad functions viz:

- Investment in assets and new products
- Determining the best mix of financing and dividends in relation to a company‘s overall valuation.

According to him “Investment of funds in assets determines the size of the firm, its profits from operations, its business risk and its liquidity. Obtaining the best mix of financing and dividends determines the firm’s financial charges and its financial risk; it also impacts its valuation” (Van Horne, 1997; 758-776)

Mr. B.S. Khubchandani in his book “Practices and law of Banking” has mentioned about NPL and income recognition norms. He has quoted a high level committee headed by Shri M Narasingham appointed bye the government of India that was formed in August, to examine all aspects relating to the structure, Organization, function and procedures of financial system (Khubchadani B.S., 1991: 305).

The recommendations were to make the balance sheets more transparent with full disclosures. It also emphasizes on internationally accepted accounting system practices so far income recognition is concerned i.e. income recognition should be based on cash realization instead of accrual basis. Similarly, risky assets should be classified as per their NPL criterion. It also speaks of BASEL committee recommendation in regard to the capital adequacy ratio of banks. It says following these recommendations, the RBI issued a host of guidelines/ instructions to banks in April 1992. Since the crux of the matter relates to definition of NPL based on which alone the income recognition, assets classification, provisioning and capital adequacy of banks and other financial institution is determined, the RBI has issued the following guidelines the banks from time to time.

a) The definition/ criterion adopted for treating an account as NPL is that, for instance, if interest debited/ installment due in an account prior to 31 March 1991 say as on 31 March,1991 is still not collected such interest/ installments should be deemed to have become due on 30 April, 1991. Up to 30 April 1991, the facilities would be treated as “substandard” and from1 may1991, they would be treated as “doubtful”. Thus for the treatment of credit as a NPL, the entire period for which interest/ installment remains uncollected should be reckoned.

b) All the accounts will be treated as non-performing. If in the case of:

i) Term loans: interest remains past due for a period of

- Quarters, for the ending 31 March 1993
- Quarters, for the ending 31 March 1994
- Quarters, for the ending 31 March 1995 and onwards.

ii) Cash credit and overdrafts: the account remains out of order or the periods indicated specified before.

iii) Bills purchased discounted: The bill (BP/BD) remains overdue/ unpaid for the period specified hereinbefore.

c) If a particular facility of borrower on the above criterion/ definition becomes NPL and then all the facilities granted to the borrower should be treated as NPL. Thus, the treatment of NPL concept is borrower wise and not facility wise.

d) It was also clarified by the RBI that in cases where the outstanding balances in the principal operating account is less than the sanction limit/ drawing limit but there are no credits continuously for six months as on the date of the balance sheet or credits are not enough to cover the interest debited during the period, these accounts should be treated as out of order.

e) An account should be considered 'past due' if is not repaid within 30 days from the due date. Thus if interest is due on 31 March 1992, it becomes past due on 30, April 1992, if it is not paid/ collected within 30 days grace period.

f) Both interest and installments, wherever applicable, should be taken in to account for assessing the NPA status of an account, after of course, allowing for 30 days, grace period in both cases.

2.3 Review of Relevant Articles, News Letter, Journals

For Nepalese banking system and its amounting NPL level, some of the think takes from the related sectors have commented and forwarded their views, suggestions through articles, journals, speeches, news letters etc.

Shrestha (Executive Director NRB) (2001), has published an article on *"Modus Operandi of Risk Appraisal & In Bank Lending Bankingl."* In his article, he has tried to highlight different aspects of credit risk management. As per his view, as the effective risk management is central to good Banking, the tradeoff between risk and return is one of the prime concerns of any investment decision whether long-term or short-term. He concludes, "Effective credit risk management allows a Bank to reduce risks and potential NPAs. It also offers other benefits. Once Banks understand their risks and their costs, they will be able to determine their most profitable business, thus, price products according the risk. Therefore, the Banks must have an explicit credit risk strategy and supported by organizational changes, risk measurement techniques and fresh credit process and systems. There are five crucial areas that management should focus on;

a. Credit sanctioning and monitoring process
b. Approach to collateral.
c. Credit risk arises from new business opportunities.
d. Credit exposures relative to capital or total advances
e. Concentration on correlated risk factors.

Apart from these; the Bank management should regularly review all asset quality issues including portfolio composition, big borrower exposures, and development in credit management policy and process." He is hopeful that the Banks adopt good risk management practices and will be able to reap both strategic and operational benefit.

Chhetri (2003), has published an article on *"Non-Performing Assets: A need for Rationalization"*, the writer has attempted to provide connation of the term NPA and its potential sources, implication of NPA in financial sector in the South East Asian Region. He had also given possible measures to contain NPA. "Loans and advances of financial institutions are meant to be serviced either part of principal of the interest of the amount borrowed in stipulated time as agreed by the parties at the time of loan settlement. Since the date becomes past dues, the loan becomes non-performing asset. The book of the account with lending institution should be effectively operative by means of real transaction effected on the part of the debtor in order to remain loan performing."

As stated by the writer, the definition of NPA differs from country to country. In some of the developing countries of Asia Pacific Economic Cooperation (APEC) forum, a loan is classified as non-performing only after it has been arrear for at least 6 months. Similarly, it is after three months in India. Loans thus defaulted are classified into different categories having their differing implication on the asset management of financial institution. He also stated that NPAs are classified according to international practice into 3 categories namely Substandard, Doubtful and Loss depending upon the temporal position of loan default. “Thus the degree of NPA assets depends solely on the length of time the asset has been in the form of non-obliged by the customer (debtors). The more time it has elapsed the worse condition of asset is being perceived and such assets are treated accordingly.” As per Chhetri’s view, failure of business for which loan was used, defective and below standard credit appraisal system, credit program sponsored by Government, slowdown in economy/recession, diversion of fund are some of the factors leading to accumulation of NPAs.

He said that there is serious implication of NPAs, on financial institution. He further added that the liability of credit institution does not limit to the amount declared as NPA but extend to extra amount that requires by regulation of supervisory authority in the form of provisioning as the amount required for provisioning depends upon the level of NPAs and their quality. As per his view, rising level of NPAs create a psyche of worse environment especially in the financial sector. He mentioned that by reviving the activities of the financial institution like waiving interest, rescheduling the loan, writing off the loan, appointing private recovery agent, taking help of tribunals and law of land etc. NPAs can be reduced.

Finally he concluded that financial institutions are beset with the burden of mounting level of NPAs in developing countries. “Such assets debar the income flow of the financial institution while claiming additional resources in the form of provisioning thereby hindering gainful investment. Rising level of NPAs cannot be taken as stimulus but the vigilance demanded to solve the problem like this, eventually will generate vigor to gear up the Banking and financial activities in more active way contributing to energizing growth.”

Dhungana (2005), has published an article on *"Why Asset Management Company is Considered the Best Option to Resolve the Non Performing Loan Problem."* In the article titled has highlighted one of the approach mainly Asset Management Company (AMC) for resolving the problem of NPL. As per him, AMC is the specialized financial intermediary to manage the non-performing and distress loans of Banks and financial institutions who buy the NPL from financial institution and take necessary steps to recover the maximum value from the acquired assets. As per his view, if NPLs are not resolved in time there would be inherent direct or indirect costs to the economy. As stated by him NPL may arise due to the external factors like decrease in market value of collateral, deterioration in borrower's repayment capacity, economic slowdown, borrower's misconduct, improper credit appraisal system, lack of risk management practice, ineffective credit monitoring and supervision system. Hence he suggested that, NPL should be kept at minimum level and the specialized institution such as AMCs should manage the distressed loans.

He says that, both traditional approach and AMC are available to deal with NPL problem. Under traditional approach, Bank handles the NPL's in its own way especially through recovery unit who focus on continuing negotiation with the borrower and give top priority to the loan recovery. As opined by the writer, this approach is useful in dealing with small business loans where personal touch is adopted but for big loans this approach does not work. "AMCs seem as the only realistic option when the financial sector recovery is the underlying objective in financial system where the institution fails to resolve the NPL problem through their own effort." He states that the main advantage of establishing AMC is that AMC is able to move in an expeditious manner removing the distraction of managing NPAs from the Banking system and frees up resources within the financial institutions allowing them to concentrate on their core activities.

He concludes, “As in most of the countries, Nepalese Financial system is largely dominated by the Banking sector. The Banking sector is severely affected by the NPL problem, it is estimated that the NPL of the Nepalese Banking system is around 16%. Therefore there is no doubt that it has serious implication on the economic performance of the country. It will be the eclipse in the development of financial soundness in the economy, if not controlled in time. However, traditional or AMC root can be practiced to get recovery from this sickness of the financial system, the AMC root may be more effective approach to be quick recovery as it has been experienced around the world.”

Adhikari (2006), has published an article entitled *“Non-Performing Loan and Its Management.”* He has tried to highlight the NPL refers to those loans and advances which are not able to serve the interest and the installment within the given period of time. And the internationally acceptable level of NPA is said to be less than %% on total loans and advance. But out of 26 commercials Bank,11 Banks have less than 5% NPL and one have marginally above 5% NPL.NPL level of other Five Banks is quit high and above the standard as well as industry average. Similar situation is the agriculture development Bank and some other non-Bank financial institution. He said that the private sectors Banks have grown up with the different and improved Banking culture. The culture is applied in the credit operation and it enables to manage their credit with possible stringent manner in most of the private sectors Bank. However, all private sectors Bank are not at par. Even private sector Banks are also carrying their NPA up to almost 40% of their credit portfolio. The average NPA level of the private sector Bank is 6.58%, which is higher than the standard but far below the industry’s average. Public sector Banks are still exposed to high risks on credit and holds huge amount of NPA. The recent attempt to write off of dead account would minimize the level of NPA substantially. However, other risks of one time writes off is still high to the individually entity.

He concludes, the process of credit risk management starts from the formation of appropriate credit policy guidelines rules and also comprises of credit appraisal, mitigation of the credit, credit documentation, processing, credit control, monitoring, follow ups, counseling, board over sight and timely recovery actions. When any of these steps is compromised, the loan may convert into the NPL. Once the loan is converted into the NPA, it must be resolved on time with appropriate NPL management strategy and methodology.

2.4 Review of Thesis

Researcher tried to find out research works done in this field through the concerned places and found two unpublished thesis in the related field. Therefore review of the same is attempted.

Joshi (2003) in his thesis entitled *"A comparative Study on Financial Performance of Standard Chartered Bank Nepal Limited and Everest Bank Limited"* states that the mean current ratio of EBL is slightly higher than that of the SCBNL and the variability of ratio of EBL is more consistence than SCBNL in comparison. The mean ratio of cash and bank balance to total deposit of SCBNL is lower in comparison to EBL. SCBNL has better liquidity position than EBL because of the high volume of liquidity indicated the inability of the bank to mobilize its current assets. Moreover SCBNL’s ratios are homogeneous than EBL. The mean ratio of cash and bank balance to current assets of SCBNL is lower in comparison to EBL. Similarly, SCBNL’s ratios of the study period are more consistent than EBL. The mean ratio of loan and advances to total deposit of EBL is higher than SCBNL. It can be said that EBL used to provoked grater loan and advance in comparison to its total deposit than SCBNL. Likewise, SCBNL’s ratio seems to be variable than EBL. The mean ratio of investment on government securities to total working fund of SCBNL is higher than EBL. Consequently, it has consistency in maintaining the ratio than EBL. The mean ratio of return on loan and advances of SCBNL has found to be significantly greater than EBL with more consistency than that of EBL. The mean ratio of credit risk of SCBNL is lower than that of EBL's ratio are more consistent that of SCBNL. Growth ratio of deposit is more consistent than that of SCBNL is lower i.e. 19.28% in comparison to EBL i.e. 76.46%.

The main statement of the problem of his research is the investment decision is the major tool of financial institution. There are many finance companies and commercial banks operating in Nepal. The fast growth of such organizations has made pro-rata increment of in collecting deposits and their investment. They collect adequate amount from the mass, however they could not find or locate new investment sectors required to mobilize their fund on the changing context of Nepal. Many banks or companies succumbed to liquidation although they had sustainable investment capacity. The increasing rate of liquidation has caused a downward trend in investment sectors. It has ensured bad impact on interest rate to the depositors, lower market value of shares etc. for the assessment of such adverse impact, this study has shown to contrast and analyses the investment policy of joint venture bank. Joint venture banks viz. Standard Chartered Bank Nepal Limited and Everest Bank Limited. The main objectives are compare investment policy of concern banks, find out the empirical relationship among total investment deposit, deposit utilization loan and advance, net profit and outside asset and compare of SCBNL and EBL.

Khadka (2004), in this thesis entitled *"Non-Performing Assets of Nepalese Commercial Banks"* has pointed out overall commercial bank's problems raised by NPL. He has stated with some definitions of NPL to make the subject easily comprehensive to the reader /new researchers. Though his research is meant for overall commercial banks, he has focused his views and comment on two large state owned commercial banks saying "the total NPL in the banking system is about 35 billion while it is even worse in case of two largest commercial banks RBB and NBL."

He gives a short glimpse of the status of these two state owned commercial banks in line with views expressed by Dr. Tilak Rawal, former governor of NRB that overall NPL stands at 30 percent and the NPL level exclusively for RBB and NBL counts for 52 percent and 62 percent respectively that together accounts for 37 percent of the total deposit of sum of Rs 200 billion and 40 percent of total loan outstanding of Rs 125 billion of the banking system as a whole.

He also emphasizes some relaxation based on the Himalyan Times on 12 November, 2003 that says "the financial sector reform measures undertaking can be broadly grouped under three heads-Reenginering of NRB, Restructuring of RBB and NBL, and capacity building of the financial sector. Management of the two ailing banks has been handed over to two teams, consisting of experts form within and outside Nepal."

His study is based on sampling of five commercial banks. Those are Nepal Bangladesh Bank Limited (NBBL), Nepal SBI Bank Limited (NSBIBL), Bank of Kathmandu (BOK), Nabil Bank Limited (NABIL) and Nepal Investment Bank Limited (NIBL). Comparison has shown the NBBL to be the worst in case of NPL. He states "Among five sampled commercial banks, the NPL of NBBL seems very worse than all other banks. The NPL of NBBL at the end of F/Y 2059/060 stands at 12.73 percent of total lending's which was decreased from 15.77 percent of previous year.

Regmi (2004) in his thesis entitled *"Credit Management of Commercial Banks with reference to Nepal Bangladesh Bank and Bank of Kathmandu"* states that commercial banks are those banks, which works from commercial view point. They perform all kinds of banking functions such as accepting deposits, advancing credit, credit creation and management of credit and advances. Portfolio management helps to minimize or manage the credit risks and spreading over the risks to various portfolios. Banks earn interest on credit and advances which is one of the major source of income for banks. On average 5 year of research period, cash and bank balance to total deposits of ratio of NB Bank & BOK is 12.75% and 14.12% respectively. Likewise NB bank and cash and bank balance 1.584 times of current deposits and BOK has cash and bank balance 1.14 times of current assets. NB bank: most of the credit and advances almost 70% is provided and asset guarantee credit is increasing period by period. After assets guarantee bank has provided credit based on bills guarantee credit is 3421.3 millions (76.1% of total credit) and in the last period it is 3347.99 millions (58.2 % of total credit).

The main statement of the problem of his the Nepal is a small country with small market. Economic condition of the country is degrading. Nepal being an agricultural country needs more investment in this sector. Nevertheless, commercial banks and other concerned in industrial and foreign projects. As a result, the credit extended to this sector is unsatisfactory. Besides, they are not even fulfilling the NRB's regulation of 12% investment of their total loans to priority sectors like agriculture, cottage and small industries and services. Similarly, the banks are not following the diversification principle i.e. they are not considering the investment portfolio position. A good portfolio theory indicates diversification of investment able funds to reduce risks. Hence the principle "does not put all the eggs in same basket "really does not apply in context of Nepalese commercial banks. As a result, many banks today could not recover their loan because in past , a major portion of their investment were made in garment, carpets and hotel sectors that now come to the brick of extinction. The objectives of this research are to analyze the functions, objectives, objectives, credit and advances procedures and recovery status of the NB bank and BOK.

Shrestha (2005) in his thesis entitled *"Credit management with special reference to Nepal SBI Bank Ltd"* illustrates that lending is one of the most important parts of function of a commercial bank and composition of loan and advances directly affects the performance and profitability of the bank. There is intense competition in banking business with limited market and less investment opportunities available. Every bank is facing the problem of default loan and there is always possibility of a certain portion of the loan and advances, profitability deposits positions of Nepal SBÏ Bank Limited is analyzed and its contribution in total profitability has been measured.

The main statement of the problem of his study is the credit management is the essence of commercial banking. Consequently, the formulation and implementation of sound credit policies are among the most important responsibilities of bank directors and management. Well conceived credit policies and credit careful credit practice are essential if a bank is to perform its credit creating effectively and minimize the risk inherent in any extension of credit. Credit management effects on the company's profitability and liquidity so it is one of the crucial decisions for commercial banks. Measuring the credit performance in quality, efficiency and contribution of profitability, liquidity position and its effect on credit performance and measure the growth rate and propensity of growth based on trend analysis are the main objective of his dissertation.

Gurung (2006) in his thesis entitled *"Lending policy and recovery management of Standard Chartered Bank Nepal Ltd and NABIL Bank Limited"* has found out that the deposit collection by the banks shows that increasing but in a fluctuating trend. The trend analysis of deposit collection the increase in deposit collection in the forthcoming years will continues. Out of different types of deposit collection account, higher account has been collected in saving deposit account. Out of the total deposit collection, SCBNL has disbursed 36% of average as a loan and NABIL has disbursed 52% of its deposit collection as a loan disbursement to deposit collection ratio of commercial banks, it is around 60%. Thus, this ratio is quite low increasing of sample bank especially of SCBNL. It is further proved by the calculation of correlation coefficient, which is 0.75 and 0.23 of SCBNL and NABIL respectively.

In order to analyze the recovery management of these banks, their loan loss provision and NPL were analyzed. While looking at the loan loss provision of SCBNL it is decreasing trend from 2002. The correlation coefficient of loan loss provision and loan disbursement of SCBNL and the trend of loss provision is decreasing every year in case of NABIL, which is provide by the trend analysis. The correlation of loan loss provision and loan disbursement of NABIL is negative.

The main statement of his problem is there many banks are mushrooming although banks are not interested to expand their branch in remote rural area. There are difficulty and length formality of procedure for long term and medium term as well as short-term loan, low deposit habit of Nepalese people and lack of strong act of providing procedure of bank, landing and investment sector of bank, recovery condition of both SCBNL and NABIL bank.

Mishra (2007) in her thesis entitled "*Credit management of Everest Bank Limited*" illustrate that liquidity that liquidity position; cash reserve ratio shows the more liquidity position. Cash and bank balance to interest sensitive ratio shows the bank is able to maintain good financial condition. Cash and bank balance to current asset ratio shows that the bank's sound ability to meet the daily cash requirement of their customers deposit. That is why liquidity position of the bank is the better.

In the aspect of profitability position, interest income to interest ratio shows the more profitable salivation. In addition, total income to total expenses ratio shows the overall predominate of the bank is satisfactory operating income. Return on loan and advances are showing position that is more profitable on of the EBL. Analysis of the assets management ratio, loan and advances to total assets ratio shows the better performance but loan and advances to total deposit position in minimum than the averages. Whereas investment in loan and advances is safely and not taking more risk. That's why assets management position of the bank shows better performance in the latest year.

After analyzing the lending efficiency of the bank, the loan loss provision to loan and advances indicator shows the better performance in the latest year. The interest expenses to total deposit ratios shows the improving efficiency of the bank. EBL Bank has sufficient liquidity. It shows that bank has got investment sectors to utilize their liquid money.

This is recommended that cash and bank balance of EBL bank is high. Bank efficiency should be increased to satisfy the demand of depositor at level of cash and bank balance does not provide return to the bank. Therefore some percentage of the cash and bank balance should be invested in profitable sectors. Bank should open their branches in the remote area with the objectives to provide the banking services and minimum deposit amounts should be reduced. The main objective of this study is to evaluate the credit management of Everest Bank Limited. Besides, there may be other objectives as well like to examine the impact of deposit in liquidity, loan management procedure, and asset management and lending efficiency of the Everest Bank Limited.

Limbu, R (2008) in his thesis entitled *"Credit Management of NABIL Bank Limited"* highlighted that aggregate performance and condition of NABIL bank. In the aspect of liquidity position cash and bank balance reserve ratio shows the more liquidity position. Cash and bank balance to total deposit has fluctuating trend in 5 years study period. Cash and bank balance to current deposit is also fluctuating. The average mean of cash and bank balance to interest sensitive ratio is able to maintain good financial condition.

In the aspect of assets management ratio, assets management position of the bank shows better performance in the recent years. Non-performing assets to total assets ratio is decreasing trend. The bank is able to obtain higher lending opportunity during the study period. Therefore, credit management is in good position of the bank. In leverage ratio, debt to equity ratio is in an increasing trend. High total debt to total assets ratio posses the higher financial risk and vice- versa. It represents good condition of total assets to net worth ratio. In the aspect of profitability position, total net profit to gross income, the total interest income to total income ratio of bank is in increasing trend. The study shows the little high earning capacity of NABIL through loan and advances. Earning per share and the price earning ratio of NABIL is in increasing trend. These mean that the better profitability in the coming last years. It represents high expectation of company in market and high demand of share. Loan loss provision to total loan and advances ratio and non-performing loan to total loan and advance ratio of NABIL is in decreasing trend. The ratio is continuously decreasing this indicates that bank increasing performance. Thus, credit management is in a good position.

The main objective of the research study is to evaluate various financial ratio of the NABIL bank. To analyze the portfolio lending of selected sector of banks, to determine the impact of deposit in liquidity and its effect on lending practices and to offer suitable suggestions based on finding of his study.

In the statistical tools analysis, average mean, correlation analysis and trend analysis have been calculated. Correlation coefficient between total credit and total assets has high degree of positive correlation. Correlation coefficient between total deposit and loan and advances has high degree of positive correlation it is concluded that increasing total deposit will have positive impact towards loan & advances.

Ghimire (2009) in his thesis entitled *"Credit Sector Reform and NRB"* 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 acres most of the banks 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

As opined by him, since majority of the loans of most of the commercial banks of the country at present falls under substandard, doubtful and even loss categories, loan loss provisioning now compared to previous arrangement would be dramatically higher. The new classification and provisioning norms are very lent able as they help to strengthen banks financially. He has also stated that tightening provisioning requirements on NPL is to ensure that banks remain liquid even during economic downturns. In the conclusions 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 2002. 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."

2.5 Research Gap

High level of NPAs is the early symptom of Bank failure and NPAs are one of the serious problems faced by the commercial Banks. Some researchers were done in which matters relating to loan loss provisioning and one-way analysis of non-performing loan has been discussed but no research was found in detailed analysis of non-performing loan and its impact on profitability of Banks. Hence the researcher had attempted to fill this research gap by taking reference of Nepal Bank Limited. This research will be able to deliver some of the present issues, latest information and data regarding total non-performing loan, loan-loss provision, total loan and advances, total deposit, total assets and net profit of Nepal Bank Limited.

CHAPTER –III

RESEARCH METHODOLOGY

Research Methodology is a diagnostic approach of research and is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. It helps in studying the entire research work in easy manner and also in presenting report in an understandable way. It includes wide range of methods, including a quantitative technique for analysis of data and information collected. Therefore, research methodology refers to the methods and techniques used in collection, tabulation and analysis of data and information collected to achieve the objective of the study. The main objective of this research is to analyze, examine and interpret the data and information to come at appropriate decision by giving conclusions and suggestions.

3.1 Research Design

Research design is the specification of methods and procedures for acquiring the information needed. It is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance. This research will follow analytical and descriptive research design.

3.2 Natures and Source of Data

This study has included only secondary data for sources of information. Secondary data will be obtain from all the published books, booklets, articles, bulleting, annual reports and other related materials including international rules and regulation. The data collected will be both qualitative and quantitative.

Basically, the data and information required for this purpose is to be obtained from Nepal Rastra Bank. Therefore all the data collected are secondary. Following are the secondary data collection sources:

- Annual reports, News letter, broacher etc. of NBL.
- Laws, guidelines and directive regarding the subject matter i.e. Text books
- Related articles published in newspapers, journals, magazines, and other publications.
- Unpublished thesis and dissertation.
- Various reports published by NRB. Quarterly report of financial statistics, banking and financial statistics no 48, Nepal Rastra Bank Samachar etc.
- Various related websites www.nrb.org.np, www.nepalbank.com, htt://internet/newsnevents.php, www.nepalnews.com.np, www.sebonp.com.np etc.
- Besides above any kind of other sources, such as assertions, interviews, remarks/ option by the experts that provides valuable data and conclusion regarding the subject mater has been considered in this study.

3.3 Population and Sample

Population refers to the entire group people, events or things of interest that a researcher wishes to investigate. Since this study is about NPL and its impact of commercial banks, the population for this study comprised all the licensed commercial banks of the country.

It can be seen from the below table that commercial banks has grown in Nepal since first joint-venture commercial bank was established in Nepal in the year 2041 BS.

There are altogether 32 commercial banks in Nepal. The commercial banks of Nepal can be categorized into two type's namely public sector and private sector. Public sector banks include two old banks NBL and RBB and private sector banks comprise remaining banks. Out of total population NBL is selected as sample for this study by using judgmental sampling method. Cause of selecting NBL is more effecting by NPL and its impact on various sector (like Net profit, loan lending procedure, deposit repayment capacity, loan loss provisioning etc.) of NBL. So this study could represent true picture of NPL and its effect on commercial banks. Among the 32 commercial banks, I have chosen on Nepal Bank Limited (www.nrb.org.np).

3.4 Methods of Analysis

The available information is grouped as per the need of the research work in order to meet research objectives. The collected data are presented in appropriate forms of in tabulation and charts. The collected data are organized and analysis is done using all the appropriate statistical, financial and simple mathematical tools.

3.5 Financial Tools

While adopting financial tools, ratio analysis is used as a benchmark for evaluating the financial position and performance of any firm. Financial analysis is the process of identifying the financial strength and weakness of the balance sheet and profit and loss account. In other words financial analysis is the use of financial statements to analyze a company's financial position and performance and to assess future financial performance.

3.6 Ratio Analysis

Ratio analysis is the widely used tool of financial analysis. Financial ratio is the mathematical relationship between two accounting figures. Ratio is simply one number expressed in terms of another and as such it expresses the numerical or quantitative relationship between two reprisals. Ratio analysis reflects the relative strengths and weakness of any organization and also indicates the operating and financial growth of the organization.

Ratios help to summarize large quantities of financial data and to make quantitative judgment about the firm's financial performance. The relationship between two accounting figures expressed mathematically is known as calculated which are related to the subject matter. Following ratios have been computed and analyzed in this study.

a) NPL to Total Loans and Advances
b) NPL to Total Assets
c) NPL to Total Deposits
d) Loan Loss Provision to NPL

a) NPL to Total Loans and Advance Ratio

This ratio determines the proportion of non-performing loans in the total loan portfolio. It is used to know the situation of NPL of Nepal Bank Limited. Knowing % of NPL to total loans and advances, we may be aware what are the possibilities of roll over of the funds exposed to risk assets? Higher ratio implies the bad quality of asset of banks inform of loans and advances. Hence lower NPL to total loan and advances ratio in preferred. This ratio is calculated as follows:

NPL to Total Loan and Advance = NPL/ Total Loan and Advances

b) NPL to Total Assets Ratio

This ratio determines the proportion of NPL held to total assets of the bank. This ratio measures the financial health of bank and measures the marginal efficiency of bank. Higher the ratio indicates that the low capacity of marginal efficiency of bank and weak financial health. Therefore, lower the ratio is preferred for financial institutions.

NPL to Total Assets Ratio= NPL/ Total Assets

c) NPL to Total Deposits

This ratio tells the volume of NPL compared to ascertain the repayment capacity of the banks to its depositors; this ratio is calculated as follows;

NPL to Total Deposit = NPL/ Total Deposits

d) Loan Loss Provision to NPL Ratio

This ratio describes the quality of assets in the form of loans and advances that a bank is holding. Since there is risk inherent in loans and advances, NRB has directed commercial banks to classify its loans into different categories and accordingly to make provision for probable loss. Loan loss provision signifies the cushion against future contingency created by the default of the borrower in payment of loans and ensures the continued solvency of the banks. Since high provision has to be made for NPL, higher provision for loan loss reflects increasing NPL in volume of total loans and advances. The low ratio signifies the good quality of assets in the volume of loans and advances. It indicates how efficiency it manages loan and advances and make efforts to cope with probable loan loss. Higher ratio implies higher portion of NPL in the total portfolio. This ratio is calculated as follows:

LLP to NPL = LLP/ NPL

3.7 Statistical Tools

Some important statistical tools are used to achieve the objective of this study. In this study, statistical tools such as correlation coefficient analysis, standard deviation, coefficient or variance, least square linear trend and hypothesis testing have been used. The basis analysis is written in point below:

- Trend analysis of important variable.
- Coefficient of correlation between different variables.

3.7.1 Trend Analysis

Trend analysis is one of the statistical tools, which is used to determine the improvement or deterioration of its financial situation. Trend analysis informs about the expected future values of various variables. The least square method has been adopted to measure the trend behaviors of these selected banks. This method is widely used in practices.

Diagrammatic and Graphical Representation

Diagrammatic and graphs are visual aids that give a bird eye view of a given set of numerical data. They represent the data in simple and readily comprehensive form. Hence various bar diagrams, pie chart and graph have been used for presentation and analysis of data. This representation has been conducted on the various factors related to NPL.

a) Trend line analysis of NPL
b) Trend line of Total Loan and Advances.
c) Trend line of Total Assets.
d) Trend line of Loan Loss Provisions.
e) Trend line of Net Profit.
f) Trend line of Total Deposits

3.7.2 Correlation Coefficient

Correlation may be defined as the degree of linear relationship existing between two or more variables. Two variables are said to be correlated when the change in the value of one variable is accompanied by the change of another variable. For example in the study area, change in the value of loan and advances are associated with the change in NPL. Similarly, changes in value of LLP are accompanied by change in NPL.

Karl person's correlation coefficient

One of the widely used mathematical methods of calculation the correlation coefficient between two variables is Karl person's correlation coefficient. Correlation refers to the degree of relationship between two variables. Correlation coefficient determines the association between the dependent variable and independent variable. If between the variables, increase or decrease in one cause increase or decrease in another, then such variables are correlated variables. It is denoted by r_{xy} or simply r and is defined by,

$$r = \frac{n\Sigma xy - \Sigma x \Sigma y}{\sqrt{n\Sigma x^2 - (\Sigma x)^2}\sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

3.7.3 Probable Error

Probable error of the correlation coefficient denoted by P.E. is the measure of testing the reliability of the calculated value of r. If r be the calculated value of r from a sample of n pair of observations, then P.E. is defined by

Calculation of probable error (PE),

$$= 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

It is used in interpretation whether calculated value of r is significant or not.

i) If r<PE, it is insignificant. So, perhaps there is no evidence of correlation.

ii) If r>6PE, it is significant. In other cases, nothing can be concluded.

The probable error of correlation coefficient may be used to determine the limits within which the population correlation coefficient lies, Limits for population correlation coefficient are $r \pm$ P.E.

CHAPTER –IV

DATA PRESENTATION AND ANALYSIS

In this section raw form of data collected from various sources are changed into an understandable presentation using financial as well as statistical tools supported by diagrams and graphs as mentioned in the previous chapter. This chapter is the heart of the study as all the findings, conclusions and recommendations are going to be derived from the calculations and analysis done in this section.

4.1 Ratio Analysis

4.1.1 NPL to Loan and Advances Ratio

As per NRB directives the loans falling under category of substandard, doubtful and loss are regarded as non-performing loan. This ratio determines the proportion of non-performing assets in the total loan portfolio. Higher ratio entails the bad quality of assets of Banks in the form of loans and advances. Hence lower NPA to total credit ratio is preferred. As per international standard only 5% NPL allowed similarly in the context of Nepal maximum 5% NPA is acceptable.

Table 4.1

NPL to Total Loan and Advance Ratio (Rs. in million)

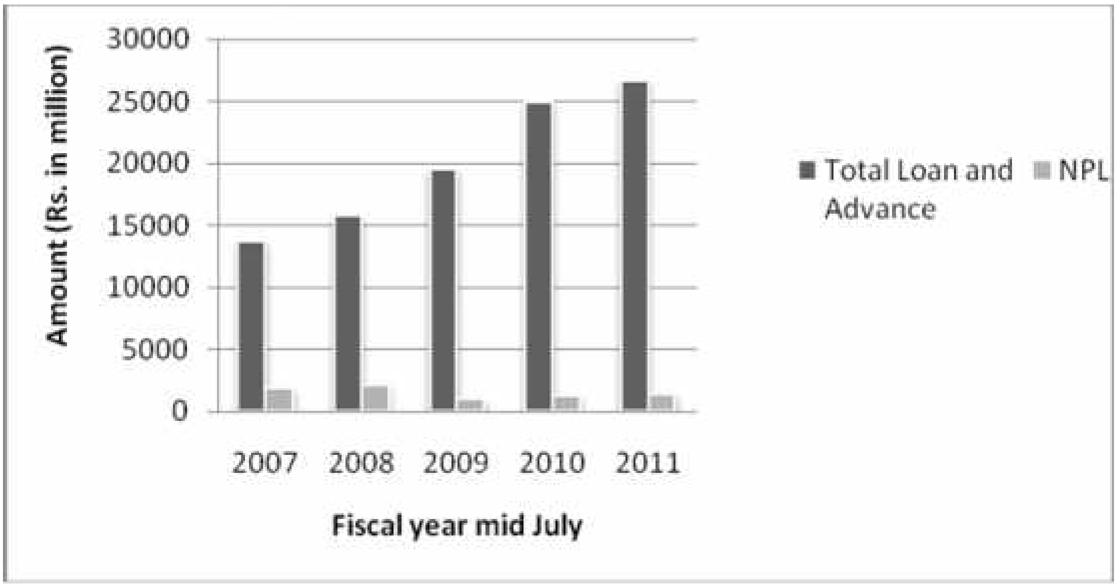
Year	Total Loan and Advance	NPL	Ratio (In %)
2007 mid July	13757	1856	13.49%
2008 ,,	15765	2067	13.11%
2009 ,,	19560	967	4.94%
2010 ,,	24935	1242	4.98%
2011 ,,	26710	1413	5.29%

Source: Nepal Bank Limited, Annual Reports.

Table 4.1 exhibits the ratio of NPL to total loan and advance of NBL for five consecutive years. The figure represented in table 4.1 shows that NBL has the highest ratio through out the study period. Ratios of NPL to loan and advance are 13.49 percent in mid July 2007, 13.11 percent in mid July 2008, 4.94 percent in mid July 2009, 4.98 percent in mid July 2010, and 5.29 percent in mid July 2011. The figures show decreasing and little increasing ratio of NPL to total loan and advance. Decreasing trend to this ratio is the result of effective credit management of bank and its effort of recovering bad debts through establishment of recovery.

Figure 4.1

Status of Total Loan and Advance and NPL



Above figure 4.1 makes clear to understand the status of NPL and total loan and advances of NBL for five consecutive years.

4.1.2 NPL to Total Assets Ratio

This ratio determines the proportion of non-performing loan to total assets of the banks. This ratio measures the inactive assets of bank. All the assets have to generate the net profit but the NPL is always in inactive that are also one type of assets. Lower the ratio signifies that the banks have more assets, which are generating the net profit. Hence lower the ratio is better the financial portion of the bank.

Table 4.2

NPL to Total Assets Ratio (Rs. in million)

Year	Total Asset	NPL	Ratio (%)
2007 mid July	39259	1856	4.73%
2008 ,,	42053	2067	4.92%
2009 ,,	47559	967	2.03%
2010 ,,	46431	1242	2.67%
2011 ,,	52601	1413	2.69%

Source: Nepal Bank Limited, Annual Reports.

Table 4.2 exhibit the ratio of NPL to total assets of NBL for five consecutive years. Ratios of NPL to total assets are 4.73% in mid July 2007, 4.92% in mid July 2008, 2.03% in mid July 2009, 2.67% in mid July 2010, 2.69% in mid July 2011. According to table 4.2 the ratio is in decreasing trend of NBL for five years. This trend shows that these assets were using to generate the net profit.

Figure 4.2

Status of NPL and Total Assets

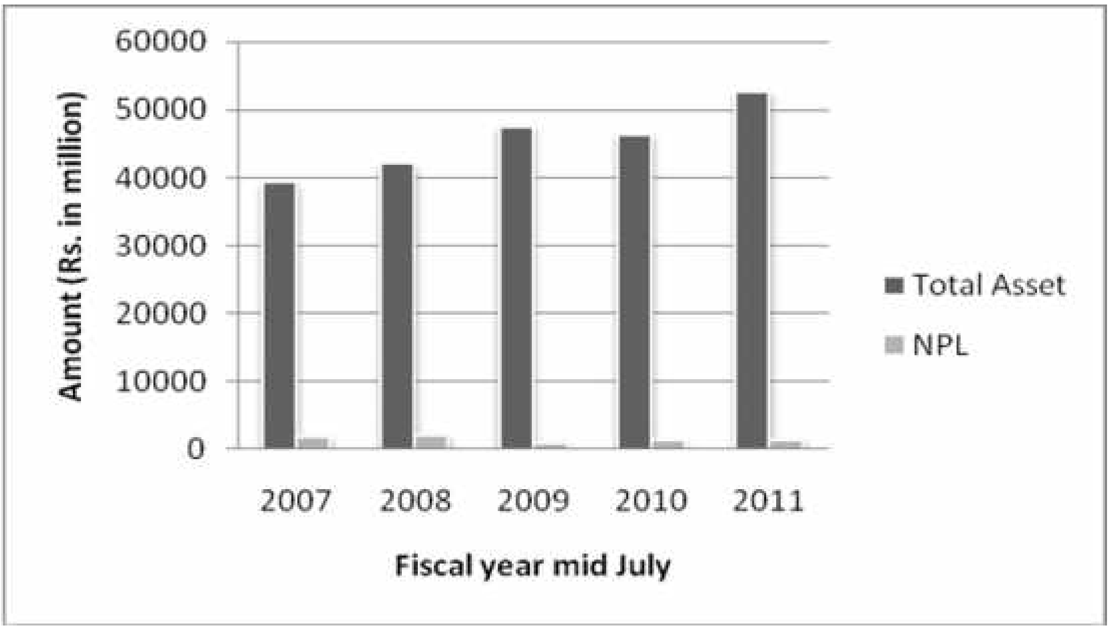


Figure 4.2 makes easier and clear to understand the status of NPL and total assets of NBL for five consecutive years.

4.1.3 NPL to Total Deposit Ratio

The NPLs are directly related to the money that is borrowed by a bank from depositors. The ratio of NPL to total deposit represents the non refundable deposit of banks. It means the ratio indicates the measure the repayment capacity of banks.

Table 4.3

NPL to Total Deposit Ratio (Rs. In Million)

Year(mid July)	Total Deposit	NPL	Ratio(%)
2007	39014	1856	4.76%
2008	41829	2067	4.94%
2009	45194	967	2.14%
2010	42406	1242	2.93%
2011	46804	1413	3.02%

Source: Nepal Bank Limited, Annual Reports.

Table 4.3 exhibit the ratio of NPL to total deposit of NBL for five consecutive years. Ratios of NPL to total deposit are 4.76% in mid July 2007, 4.94% in mid July 2008, 2.14% in mid July 2009, 2.93% in mid July 2010, 3.02% in mid July 2011. This gives in current years due to strict recovery policies and recovery actions of the banks, the repayment capacity of bank are improvement with lower NPL level compared to deposit growth rate indicates effective recovery action.

Figure 4.3

Status of Total Deposit and NPL

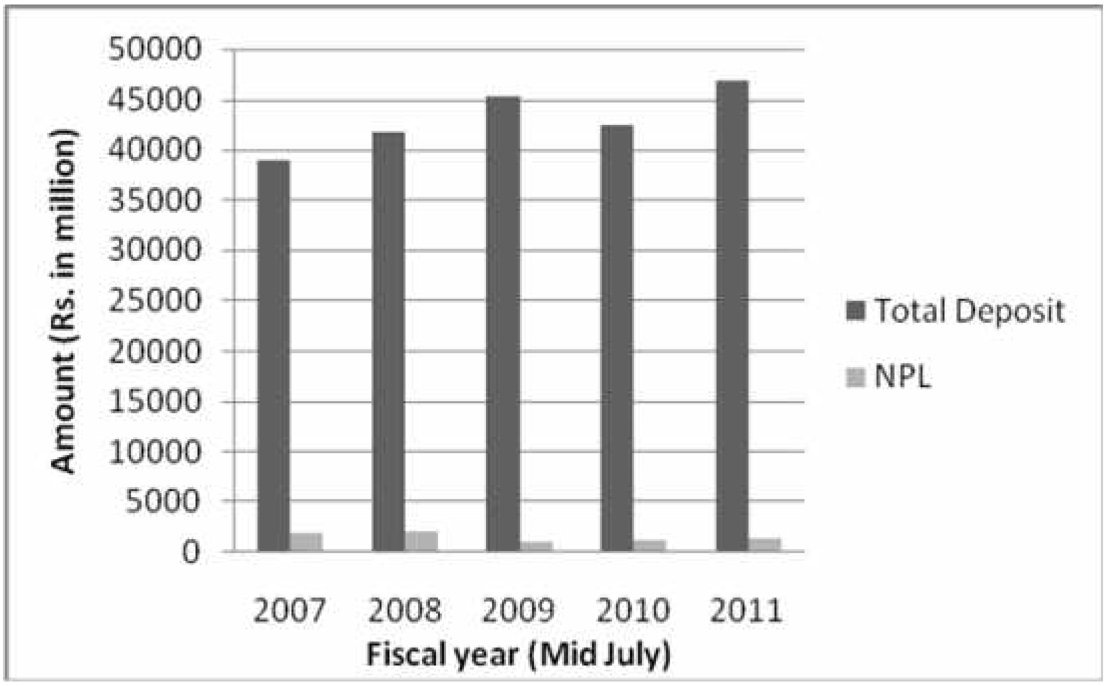


Figure 4.3 makes easier and clear to understand the status of NPL and total deposit of NBL for five consecutive years.

4.1.4 Loan Loss Provision to NPL Ratio

This ratio determines the proportion of provision held to NPL of the banks. This ratio measures up to what extent of risk inherent in NPL is covered by the total loan loss provision. Higher ratio signifies that the banks are safeguard against future contingencies that may create due to NPL or in other words, banks have cushion of provision to cape the problem that may be cause due to NPL. Hence higher the ratio better is the financial portion of the bank

Table 4.4

Loan Loss Provision to NPL Ratio (Rs. In million)

Year(mid July)	Loan Loss Provision	NPL	Ratio(%)
2007	2698	1856	145.37%
2008	2513	2067	121.58%
2009	1945	967	201.14%
2010	1528	1242	123.03%
2011	1502	1413	106.30%

Source: Nepal Bank Limited, Annual Reports.

Table 4.4 exhibit the ratio of provision held to NPL of NBL for five consecutive years. Ratios of LLP to NPL are 145.37% in mid July 2007, 121.58% in mid July 2008, 201.14% in mid July 2009, 123.03% in mid July 2010 and 106.30% in mid July 2011.According to table 4.4 the ratio of mid July 2007 to mid July 2008 & mid July 2009 to mid July 2011 was decreased and in mid July 2009 was increased. It shows that NBL has fluctuating trend for the study period. Higher LLP indicates the poor ineffective credit policy, higher proportion of NPA and poor performance of the economy. Hence the greater LLP of NBL suggest that there is high proportion of NPL in the total loan and advance and decreasing trend of loan provision amount of NBL explains that NBL has been successful to reduce its NPL resulting to decreasing LLP amount.

Figure 4.4

Status of NPL and Loan Loss Provision

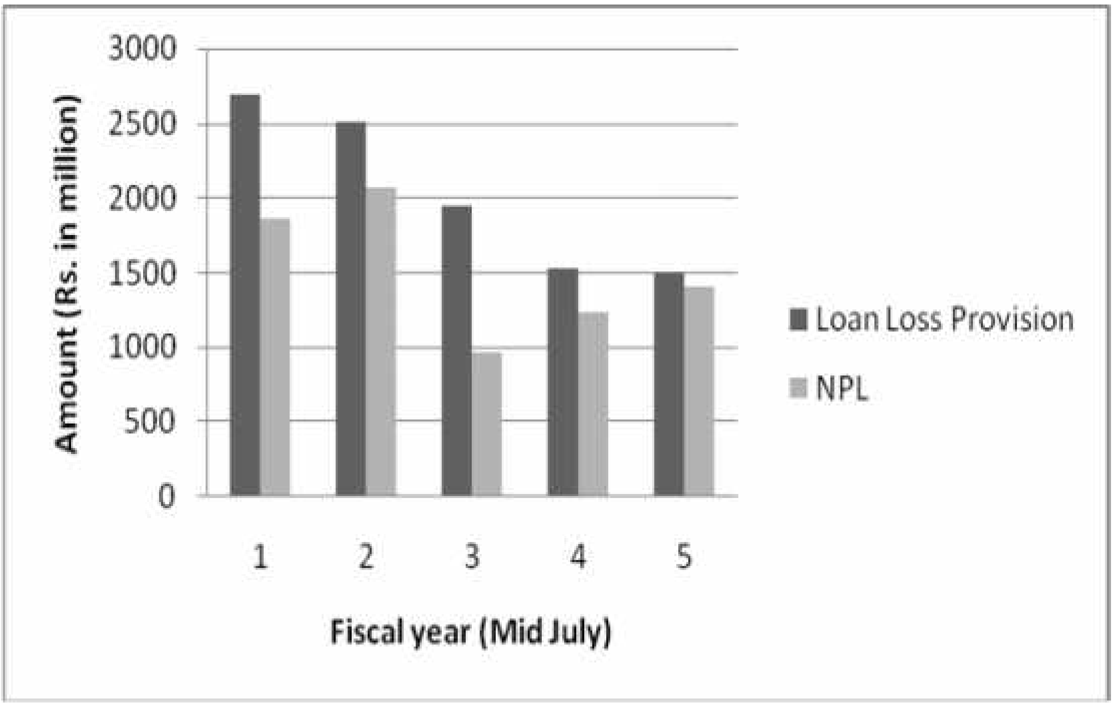


Figure 4.4 makes easier and clear to understand the status of NPL and loan loss provision of NBL for five consecutive years.

4.2 Trend Analysis

4.2.1 Trend Analysis of NPL

Under this topic, an effort has been made to calculate the trend value of NPL of NBL for five years form the mid July 2007 to mid July 2011 and forecast for next five year mid July 2012 to mid July 2016. The following table 4.5 shows the trend value of NPL for the ten years form mid July 2007 to mid July 2016.

Table 4.5

Trend Analysis of NPL

Year Mid July	**Deviation from mid July 2009 (x)**	**y_c =a+bx** **y_c =1509-171.10x**
2007	-2	1,851.20
2008	-1	1,680.10
2009	0	1,509.00
2010	1	1,337.90
2011	2	1,166.80
2012	3	995.70
2013	4	824.60
2014	5	653.50
2015	6	482.40
2016	7	311.30

Source: Annex -1.1

Table 4.5 shows that NBL has decreasing trend of NPL. The average NPL of NBL is Rs 1509 million, which is decreasing at the rate of Rs.171.10 million every year. NPL is expected to decrease from Rs 1166.80 million in mid July 2011 to Rs 311.30 million in mid July 2016, which is decreasing value for NPL. According to decreasing rate of NPL, the bank would recover the NPL in starting of study period. Here, NPL of NBL has decreasing trend. Decreasing trend of NPL shows that it is successful in reducing the NPL of bank and it show decreasing trend, which is an indication of decrement of NPL in the total assets quality.

Figure 4.5

Trend Analysis of NPL

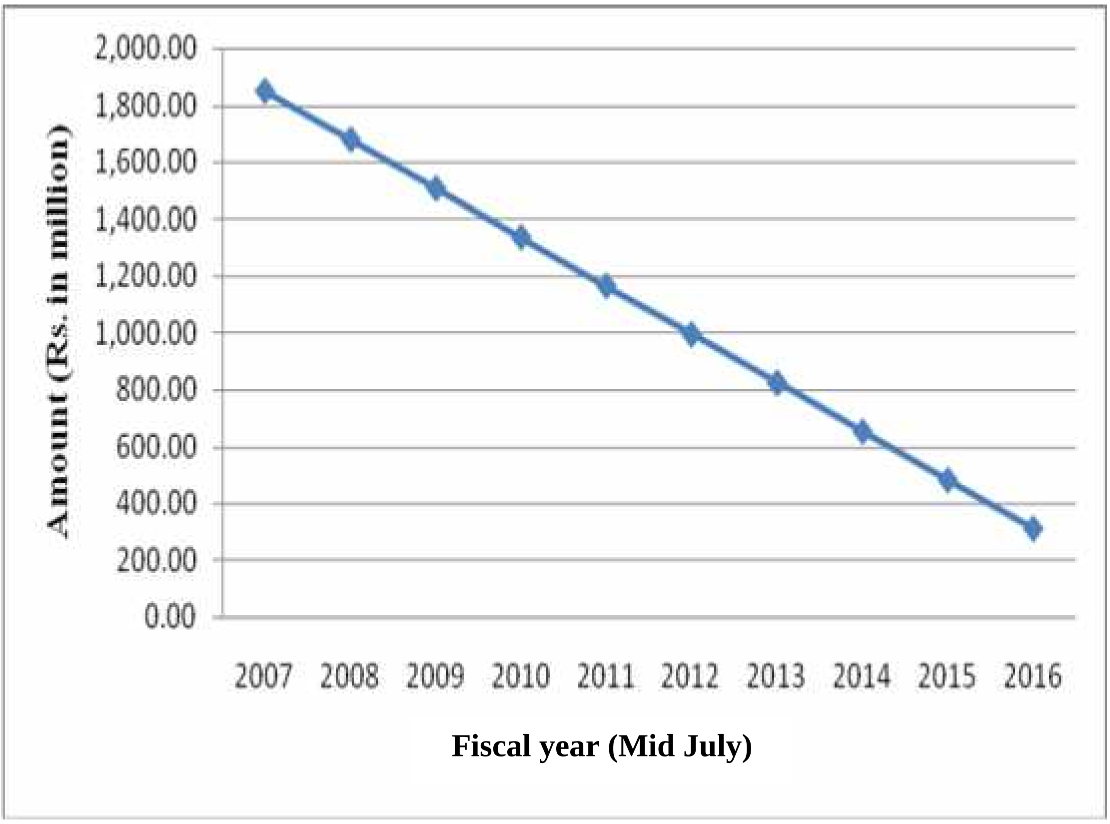


Figure 4.5 represents the trend line of NPL of bank for five consecutive years.

4.2.2 Trend Analysis of Total Loan and Advances

Under this topic, an effort has been make to calculate the trend value of total loan and advances of NBL for five years from the mid July 2007 to mid July 2011 and forecast for next five year from mid July 2012 to 2016. The following table shows the trend value of total loan and advances for ten years from mid July 2007 to mid July 2016.

Table 4.6

Expected Trend Value of Total Loan and Advances (Rs. in Million)

Year Mid July	Deviation from mid July 2009 (x)	y_c=a+bx y_c=20129.80+3507.60x
2007	-2	13,114.60
2008	-1	16,622.20
2009	0	20,129.80
2010	1	23,637.40
2011	2	27,145.00
2012	3	30,652.60
2013	4	34,160.20
2014	5	37,667.80
2015	6	41,175.40
2016	7	44,683.00

Source: Annex -1.2

Table 4.6 shows that NBL has increasing trend of total loan and advances. The average total loan and advances of NBL is Rs 20129.80 million, which is increasing at the rate of Rs 3507.60 million every year. Total loan and advances is expected to increase from Rs 27145 million in mid July 2011 to Rs 44683 million in mid July 2016. NBL is suffering from the problems of bad debts, they are concentrating more on recovering bad debts and there was further investment in the form of loan and advances, hence its loan and advances show increasing trend for the study period. But other side, its profitability opportunity will be gain because of increasing trend of loan and advance. Increasing trend of loan and advances shows that it is successful in increment of investment in loan and advances of bank, which is an indication of increment of net profit.

Figure 4.6

Trend Analysis of Total Loan and Advances

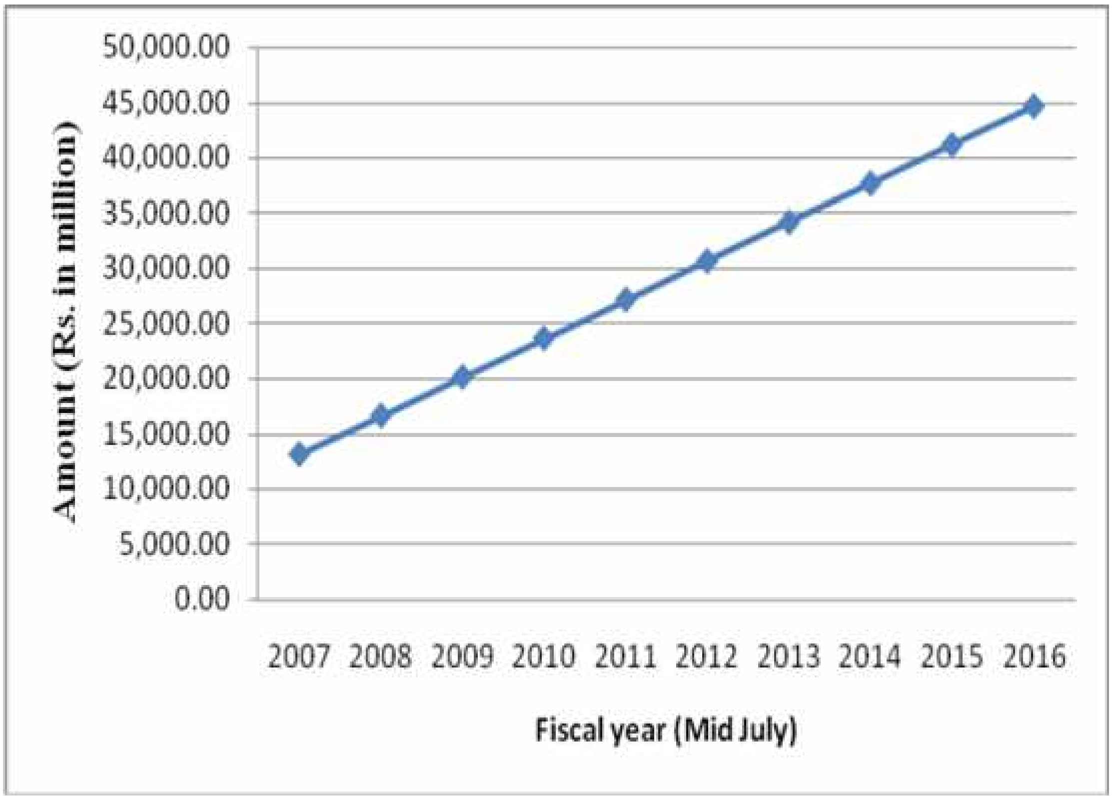


Figure 4.4 represents the trend line of total loan and advances of bank for five consecutive years.

4.2.3 Trend Analysis of Total Assets

Under this topic, an effort has been make to calculate the trend value of total assets of NBL for five years from the mid July 2007 to mid July 2011 and forecast the next five years from mid July 2012 to mid July 2016. The following table 4.7 shows the trend value of total assets for the ten years from mid July 2007 to mid July 2016.

Table 4.7

Trend Value of Total Assets (Rs in Million)

Year Mid July	Deviation from mid July 2009 (x)	$y_c = a+bx$ $y_c = 45580.60+3106.20x$
2007	-2	39,368.20
2008	-1	42,474.40
2009	0	45,580.60
2010	1	48,686.80
2011	2	51,793.00
2012	3	54,899.20
2013	4	58,005.40
2014	5	61,111.60
2015	6	64,217.80
2016	7	67,324.00

Source: Annex -1.3

Table 4.7 shows that NBL has increasing trend of total assets. The average total asset of NBL is Rs 45580.60 million which is increasing at the rate of Rs 3106.20 million every year. Total assets are expected to increase from 51,793.00 million in mid July 2011 to Rs 67,324.00 million in mid July 2016. According to increasing rate of total assets, the bank would be success of gaining profit in further year.

NBL is suffering from the problems of bad debts, it has huge amount of NPL in starting of study period. Higher the NPL is decreasing the total assets. Here NPL of NBL has decreasing trend, so total assets are increasing trend for study period. Hence, its total assets shows increasing trend. Increasing trend of total assets shows that it is successful in increasing good performance of bank. It shows increasing trend total assets, which is an indication of increment of profit.

Figure 4.7

Trend Value of Total Assets (Rs in Million)

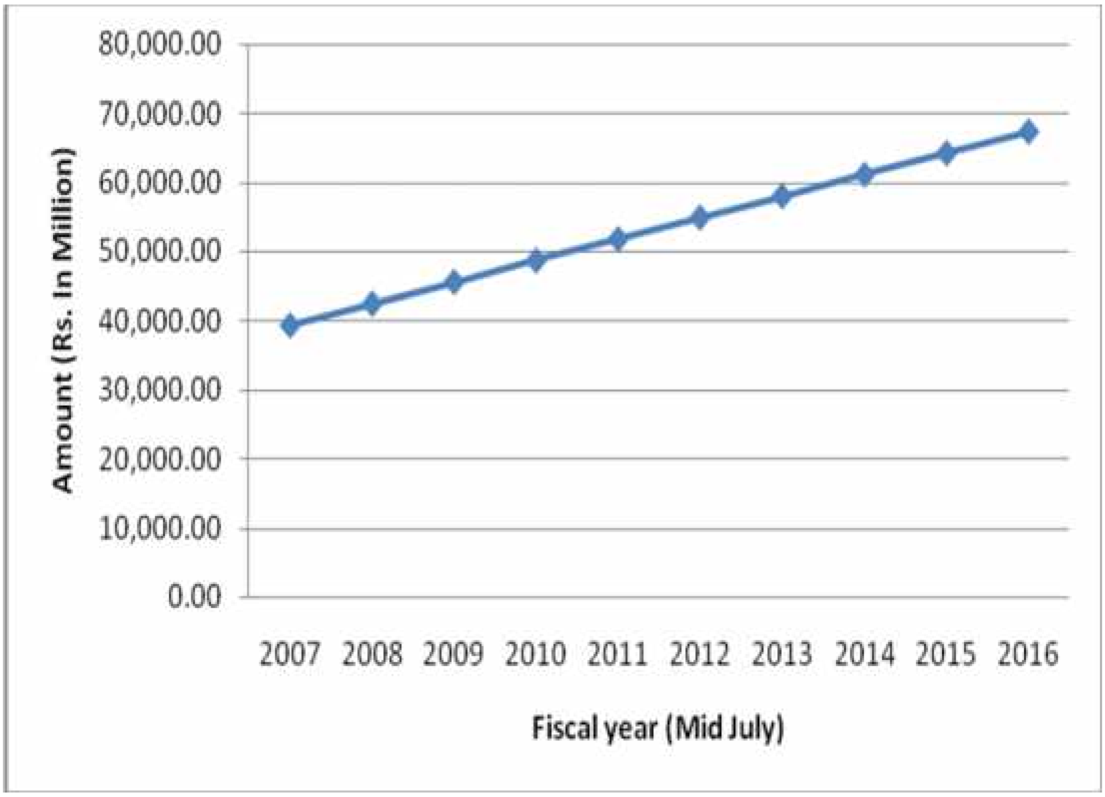


Figure 4.4 represents the trend line of total assets of bank for five consecutive years.

4.2.4 Trend Analysis of Loan Loss Provision

Under this topic, an effort has been made to calculate the trend value of loan loss provision of NBL, for five years from the mid July 2007 to mid July 2011 and forecast for next five year from mid July 2012 to mid July 2016. The following Table 4.8 shows the trend value of LLP for the ten years from mid July 2007 to 2016.

Table 4.8

Expected Trend Value of Loan Loss Provision (Rs in Million)

Year Mid July	Deviation from mid July 2008 (x)	$y_c = a+bx$ $y_c = 2037.20-337.70x$
2007	-2	2,712.60
2008	-1	2,374.90
2009	0	2,037.20
2010	1	1,699.50
2011	2	1,361.80
2012	3	1,024.10
2013	4	686.40
2014	5	348.70
2015	6	11.00
2016	7	-326.70

Source: Annex -1.4

Table 4.8 shows that NBL has decreasing trend of loan loss provisioning. The average LLP of NBL is Rs 2037.20 million which is decreasing at the rate of Rs 337.70 every year. LLP is expected to decrease from Rs 1316.80 million in mid July 2011 to Rs -326.70 million in mid July 2016. NBL is suffering from the problems of bad debts it has huge amount of NPL in starting of study period. Higher the NPL, higher would be the LLP and vice versa. Here LLP has decreasing trend for the study period because of NPL of NBL has decreasing trend. Hence its LLP shows decreasing trend of the further years. Decreasing trend of LLP shows that it is successful in reducing the NPL of bank and which is an indication of decrement of NPL in the total assets quality.

Figure 4.8

Trend Analysis of LLP

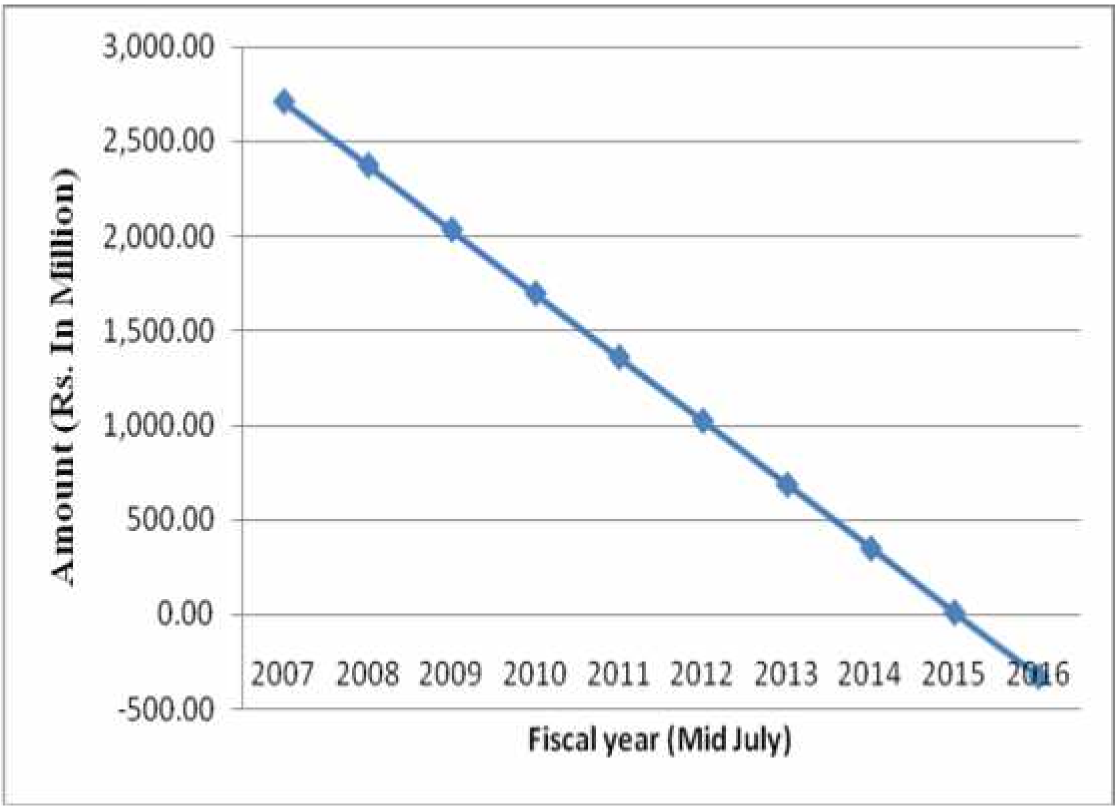


Figure 4.4 represents the trend line of loan loss provision of bank for five consecutive years.

4.2.5 Trend Analysis of Net Profit

Under this topic an effort has been made to calculate the trend value of net profit of NBL for five years from the mid July 2007 to mid July 2011 and forecast for next five years from mid July 2012 to mid July 2016. The following Table 4.9 shows the trend value of net profit for the ten years from mid July 2007 to mid July 2016.

Table 4.9

Trend Analysis of Net Profit (Rs. In million)

Year Mid July	Deviation from mid July 2009 (x)	$y_c = a+bx$ $y_c = 420+43x$
2007	-2	334.00
2008	-1	377.00
2009	0	420.00
2010	1	463.00
2011	2	506.00
2012	3	549.00
2013	4	592.00
2014	5	635.00
2015	6	678.00
2016	7	721.00

Source: Annex -1.5

Table 4.9 shows that NBL has increasing trend of net profit. The average net profit of NBL is Rs 420 million, which is increasing at the rate of Rs 43 million every year. Net profits are expected to increase from Rs 506 million in mid July 2011 to Rs 721 million in mid July 2016. According to increasing rate of net profit, the bank would be success of increasing of bank for further year.

NBL is suffering from the problems of NPL. It has huge amount of NPL in starting of study period. Here, NPL of NBL has decreasing trend for the study period. Lower NPL shows that it is successful in increasing good performance of bank and successful in credit management but low increasing trend of net profit says that bank has not be success to manage operating expenses and other internal factors.

Figure 4.9

Trend Analysis of Net Profit

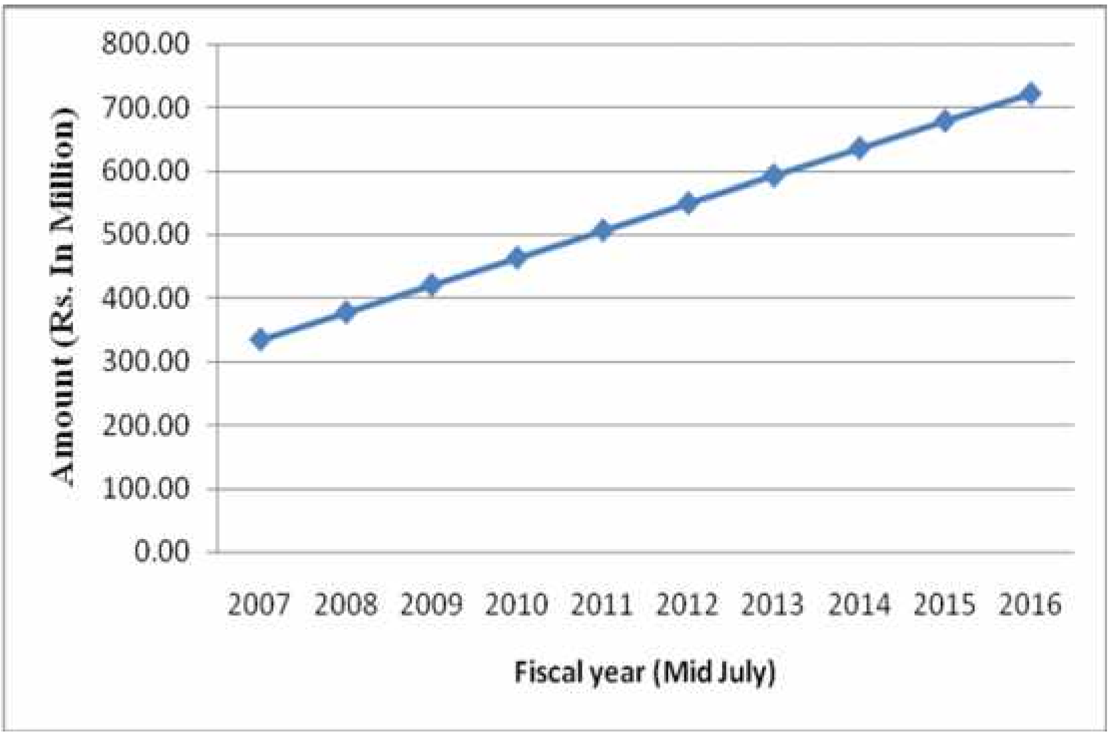


Figure 4.9 represents the trend line of net profit of bank for consecutive year.

4.2.6 Trend Analysis of Total Deposit

Under this topic, an effort has been made to calculate the trend value of deposit of NBL for five years from the mid July 2007 to mid July 2011 and forecast for next five years from mid July 2012 to 2016. The following Table 4.10 shows the trend value of total deposits for the ten years from mid July 2007 to mid July 2016.

Table 4.10

Expected Trend Value of Total Deposit (Rs in million)

Year Mid July	Deviation from mid July 2009 (x)	$y_c = a+bx$ $y_c = 43049.40+1615.70x$
2007	-2	39,818.00
2008	-1	41,433.70
2009	0	43,049.40
2010	1	44,665.10
2011	2	46,280.80
2012	3	47,896.50
2013	4	49,512.20
2014	5	51,127.90
2015	6	52,743.60
2016	7	54,359.30

Source: Annex -1.6

Table 4.10 shows that the deposit of NBL has the increasing trend. The average total deposit of NBL is Rs 43,049.40 million, which is increasing at the rate of Rs 1615.70 million every year. If the other things remain the same, total deposits are expected to increase from Rs 46,280.80 million in mid July 2011 to Rs 54,359.30 million in mid July 2016. According to increasing rate of total deposits the bank would be able to attract to its customer. Higher the NPL would be loss the belief of customers. Here, NPL of NBL has decreasing trend and total deposit of bank has increasing trend, so belief of customers increasing. Increasing trend of total deposits shows that it is successful in maintaining believes of customers and it show increasing trend, which is an indication of increment of total assets.

Figure 4.10

Trend Analysis of Total Deposit

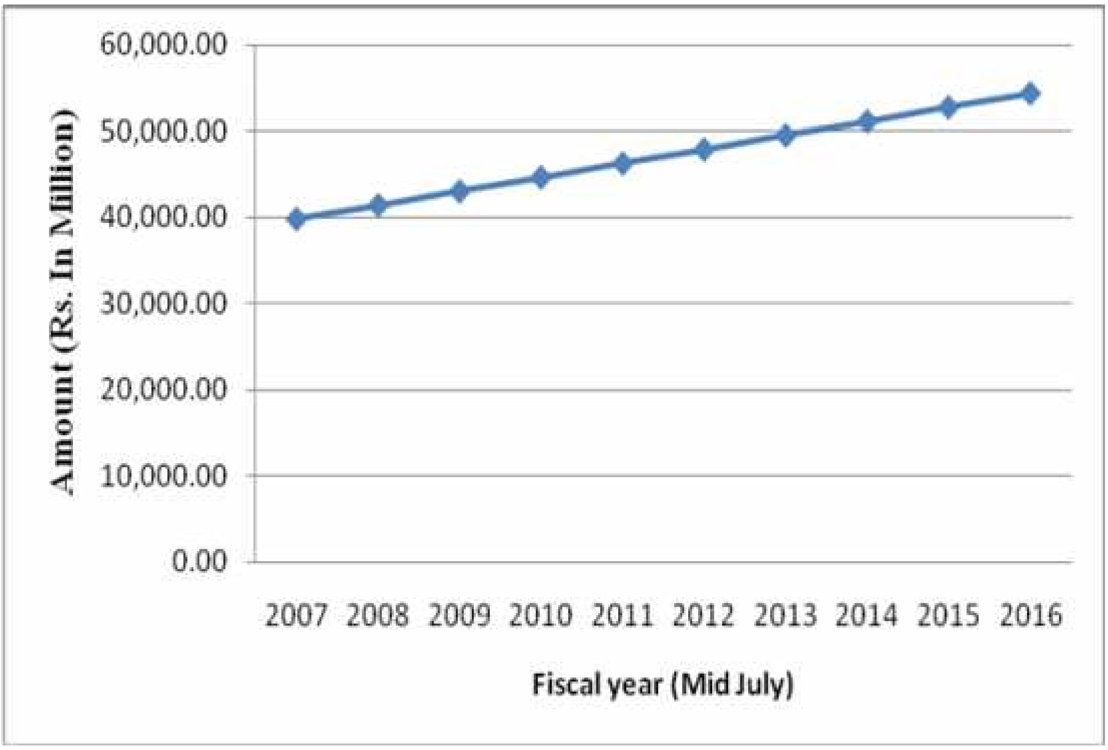


Figure 4.10 represents the trend line of total deposits of bank for consecutive years.

4.3 Correlation Coefficient Analysis

4.3.1 Correlation Coefficient between NPL and Total Loan and Advances

The correlation between NPL and loan and advances describes the relationship between NPL and loan and advances. How a unit changes in loan and advances effect the NPL is exhibited by this correlation. Here NPL is dependent variable and loan and advances is the independent variable.

Table 4.11

Correlation Coefficient between NPL and Total Loan and Advances

S.N.	Calculation of	Result
1	Correlation coefficient (r)	-0.6151
2	Coefficient determinant (r^2)	0.3784
3	Probable error (PE)	0.1872
4	6PE	1.1232
5	Significance / in Significance	Insignificant
6	Relationship	Negative

Source: Annex -2.1

Table 4.11 explains the relationship between NPL and loan and advances. Here the NBL have negative correlation between NPL and loan and advances. That means increment in loan and advances leads to decrement in NPL and vice versa. The correlation coefficient of NBL is -0.6151 and its PE is 0.1872. Since correlation coefficient (r) is not greater than 6PE, the correlation coefficient is not significant and reliable. In other words the NPL of NBL has negative correlation with the total loan and total advances during the study period. In other words the NPL of NBL has low degree of correlation with the total loan and total advances during the study period.

Coefficient of determinants (r) is 0.3784, which indicates that 37.84% of total variation in dependent variable (NPL) has been explained by the independent variable loan and advances and remaining is due to the effect of other factor.

4.3.2 Correlation Coefficient between NPL and Total Assets

The correlation between NPL and total assets describes the relationship between NPL and total assets. How a unit changes in total assets effect the NPL is exhibited by this correlation. Here NPL is dependent variable and total asset is the independent variable.

Table 4.12

Correlation Coefficient between NPL and Total Assets

S.N.	Calculation of	Result
1	Correlation Coefficient (r)	-0.6627
2	Coefficient of Determinant(r^2)	0.4392
3	Probable Error (PE)	0.1689
4	6PE	1.0132
5	Significance/ Insignificance	Insignificant
6	Relationship	Negative

Source: Annex -2.2

Table 4.12 explains the relationship between NPL and Total assets. Here the NBL has negative correlation between NPL and total assets. That means decrement in NPL leads to increment in total assets and vice versa. The correlation coefficient of NBL is -0.6627 and its PE and 6PE are 0.1689 and 1.0132. Since correlation coefficient (r) is less than 6 times the value of PE, the correlation coefficient is insignificant. In other words, the total NPL of NBL has negative correlation with the total assets during the study period and the increase in total assets is due to decrement in NPL for the bank.

Coefficient of determinants (r^2) is 0.4392 which indicates that 43.92% of total variation in dependent variable NPL has been explained by the independent variable (Total assets) and remaining is due to the effect of other factors.

4.3.3 Correlation Coefficient between NPL and Total Deposit

The correlation between NPL to total deposit describes the relationship between NPL and total deposits. How a unit change in total deposits effect the NPL is exhibited by this correlation. Here NPL is dependent variables and total deposit is the independent variable.

Table 4.13

Correlation Coefficient between NPL and Total Deposit

S.N.	Calculation of	Result
1	Correlation Coefficient (r)	-0.6295
2	Coefficient of Determinant (r^2)	0.3962
3	Probable Error (PE)	0.1818
4	6PE	1.0908
5	Significant / Insignificant	Insignificant
6	Relationship	Negative

Source: Annex -2.3

Table 4.13 explains the relationship between NPL and total deposits. Here the NBL has negative correlation between NPL and total deposits. That means decrement in NPL leads to increment in total deposits and vice versa. The correlation coefficient of NBL is -0.6295 and its PE and 6PE are 0.1818 and 1.0908. Since correlation coefficient (r) is less than 6 times the value of PE, the correlation coefficient is insignificant and the increase in total deposits is due to decrement in NPL for the bank.

Coefficient of determinants (r^2) is 0.3962, which indicates that 39.62 % of total variation in dependent variable (NPL) has been explained by the independent variable (Total deposit) and remaining is due to the effect of other factors.

4.3.4 Correlation Coefficient between NPL and LLP

The correlation between NPL and LLP describes the relationship between NPL and LLP. How a unit change in NPL effect the LLP is exhibited by this correlation. Here NPL is independent variable and LLP is the dependent variable. Higher the NPL higher will be the provisioning amount.

Table 4.14

Correlation Coefficient between NPL and LLP

S.N.	Calculation of	Result
1	Correlation Coefficient (r)	0.7391
2	Coefficient of Determinant (r^2)	0.5463
3	Probable Error (PE)	0.1366
4	6PE	0.1897
5	Significant / Insignificant	Significant
6	Relationship	Positive

Source: Annex -2.4

Table 4.14 explains the relationship between NPL and LLP. Here the NBL has positive correlation between NPL and LLP. That means increment in NPL leads to increment in LLP and vice versa. The correlation coefficient of NBL is 0.7391 and its PE and 6PE are 0.1366 and 0.1897. Since correlation coefficient (r) is greater than 6 times the value of PE, the correlation coefficient is significant and reliable. In other words, the total LLP of NBL is highly correlated with the NPL during the study period and the decrease in LLP of NBL is due to decrease in NPL for the bank and vice versa.

Coefficient of determinant (r^2) is 0.1366, which indicates that 13.66% of total variation in dependent variable (LLP) has been explained by the independent variable NPL and remaining is due to the effect of other factors.

4.3.5 Correlation Coefficient between NPL and Net Profit

The correlation between NPL and net profit describes the relationship between NPL and net profit. How a unit changes in NPL effect the net profit is exhibited bye this correlation. Here NPL is independent variable and net profit is the dependent variable.

Table 4.15

Correlation Coefficient between NPL and Net Profit

S.N.	Calculation of	Result
1	Correlation Coefficient (r)	-0.8226
2	Coefficient of Determinant (r^2)	0.6767
3	Probable Error (PE)	0.0974
4	6 PE	0.5844
5	Significant / Insignificant	Significant
6	Relationship	Negative

Source: Annex -2.5

Table 4.15 explain the relationship between NPL and Net Profit. Here the NBL has negative correlation between NPL and Net Profit. That means decrement in NPL leads to increment in Net Profit and vice versa. The correlation coefficient of NBL is 0.0974 and its PE and 6PE are 0.5844 and 1.806. Since correlation coefficient (r) is greater than 6 times the value of PE, the correlation coefficient is significant and reliable.

Coefficient of determinant (r^2) is 0.6767, which indicates that 67.67% of total variation in dependent variable (Net Profit) has been explained by the independent variable NPL and remaining is due to the effect of other factors.

4.4 Major Findings of the Study

From the analysis of data, following major findings have been obtained.

- Under this analysis, ratio of NPL to total loan and advances, NPL to total assets and NPL to total deposits are not satisfactory level for bank but these ratios are decreasing in each study periods. Higher ratio is not acceptable for bank so the ratio will be lower in coming year. LLP to NPL ratio is high and it is better for the NBL. It will be high ratio because it is the treatment of suffering of NPL problems. Major findings of these ratios are as follows:

- Ratio of NPL to total loan and advances is higher than international standard till 2008 mid July. The ratio is 5.29 % in mid July 2011. The ratio is greater than the standard level i.e. 5% which is not satisfactory.
- Ratio of NPL to total assets is not satisfactory level on banking transaction in the study period. Decreasing trend will be better for NBL.
- Ratio to NPL to total deposits also is not satisfactory level but it is decreasing in each consecutive years. Decrease the ratio repayment capacity of bank so the lower ratio is better for bank.
- LLP to NPL ratio is higher and it is fluctuating for recent years. This is the safeguard of bank for NPL problems. Higher ratio is better to safe from NPL problems.
- Trend Analysis of NPL and LLP are decreasing in each consecutive year respectively. Decreasing trends of NPL and LLP are better for banking transaction. They are helpful to increase the net profit of bank and it is using for investment. It is the best performance of banking policy for credit management.
- Trend of Net profit is increasing in the each year respectively. It is good signal for NBL. But low increasing trends of Net Profit is not satisfaction while NPL and LLP are decreasing . It seems that the bank is facing high operational cost. If the bank does not try to reduce the operational cost, the bank would not be generate high profit in coming years.
- Trend of total loan and advances is increasing in each year respectively. It is good for banking sector. It will be increasing and investing this fund in productive sector and generate the of bank.
- Trend of total assets and total deposits are increasing in each consecutive year respectively. Expected value of each trend will be acceptable and suitable for banks. Increasing trend of these is better result of banks managerial efficient.
- Correlation coefficient between NPL and total loan and advances is -0.6151, which is negative correlation. That means increment in loan and advances leads to decrement in NPL and vice versa. It shows the good credit

management and investing the fund in productive sector. It is less than 6 times the value of its PE and even less than 6PE. The correlation coefficient between NPL and total loan and advances is insignificant. Coefficient of determinant is 0.3784, which indicates that 37.84% of total variation in dependent variable (Total loan and advances) has been explained by the independent variable (NPL) and remaining is due to the effect of other factors.

- Correlation coefficient between NPL and total assets is -0.6627, which is highly negative correlation. It means increment of total assets leads to the decrement of NPL and vice versa. Here PE and 6PE are 0.1689 and 1.0132 since correlation coefficient is less than 6 times the value of 6PE, the correlation coefficient is insignificant.
- Correlation coefficient between NPL and total deposits is -0.6295, which is negative correlation. It means increment of total deposit leads to the decrement of and vice versa. Here PE and 6PE are 0.1818 and 1.0908 since correlation coefficient is less than 6 times the value of 6PE, the correlation coefficient is insignificant.
- Correlation coefficient between NPL and LLP is 0.7391, which is highly positive correlation. That means increment in NPL leads to increment in LLP and vice versa. Coefficient of determinant is 0.5463, which indicates that 54.63% of total variation in dependent variable (LLP) has been explained by the independent variable (NPL) and remaining is due to the effect of other factor.
- Correlation coefficient between NPL and net profit is -0.8226, which is negative correlation. Which indicate the decrement of NPL leads to the increment of net profit and vice versa. It is greater than 6 times the value of its PE and even greater than PE. The correlation coefficient between NPL and net profit is significant. Coefficient of determinant is 0.6767, which indicates that 67.67% of total variation in dependent variable (Net Profit) has been explained by the independent variable (NPL) and remaining is due to the effect of other factors.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATION

Finally this chapter includes the summary, conclusions and recommendation based on the result of the analysis of the data.

5.1 Summary

National development of any country depends upon the economic development of the country and economic development is supported by financial infrastructure of that country. Banks constitute an important segment of financial infrastructure of any country. Thus, Banks play an important role in the economic development of the country as the issue of development always rests upon the mobilization of resources.

A commercial bank means the bank, which deals with exchanging currency, accepting deposits, providing loans and doing other commercial transactions. Therefore one to the main functions of commercial bank is given loan. There is not so long history of commercial bank in Nepal. NBL was established on 30th Kartik 1994 B.S. It is that commercial bank which has the largest network in the country. Now there are 32 commercial banks have been extending their service in different part of the country.

This study is aimed at studying the NPL and its impacts in commercial banks. For this purpose descriptive and analytical research design was adopted. Out of the total population of 32 commercial banks, NBL is taken as a sample using judgmental sampling method because of due to highest proportion of NPL to total loan and advances. NBL is suffering of problem of NPL than joint venture private sector banks. Only secondary data has been used in the study. Secondary data has been collected through annual reports, newspapers and other publication. The data collected from various sources are recorded systematically and presented in appropriate form of table and chart and appropriate mathematical, statistical, financial and graphical tools have been applied to analyze the data. The data of five consecutive year of the NBL has been analyzed to meet the objective of the study.

Trend of NPL and LLP are decreasing and trend of total deposit, total assets, net profit and total loan and advances of NBL for the consecutive years are increasing trend. The ratios of NPL to total loan and advances, NPL to total deposits and NPL to total assets are decreasing of NBL for consecutive years which are a good symbol for bank. The low increasing trend of net profit clears that the bank's operational activities are poorly managed. The bank should give immediately attention for the bright future.

5.2 Conclusion

As a business institute, a bank aims at making huge profit. Since loan and advances are more profitable than any other assets, the bank is willing to lend as much as its fund as possible. But it has to be careful about the safety of such loan and advances. So it is very important to be reminded that must of the banks failures in the world due to the shrinkage in the value of loan and advance. Hence loan is known is risky asset, constitutes primary sources of income to the bank. It means interest earned from loan and advances occupy major space in income statement of bank. Performing loan has multiple benefits while NPL erodes even existing capital. The success of any bank is depends upon the quality of loan, i.e. amount of performing loan. Performing loan are those loans that repay principle and interest to the bank from the cash flow it generates. Risk of non-repayment of loan is known as credit risk or default risks.

Nepalese banking sector has been facing the problem of swelling NPL. NPL are those loans, which neither pay interest nor repay principle from the cash flow it generates. Higher the NPL indicates the poor financial position and poor assets management. NPL is directly related with the loan and advances. The level of NPL in sampled bank is not satisfactory level. Many other banks have also higher NPL than international standard. Nepalese commercial banks are suffering from NPL problem. It is directly impact. Main cause of NPL is the weaknesses of credit management and other. The decreasing trend remain continue in coming days, the situation will be satisfactory. Level of NPL of NBL has been gradually decreasing every year so we can say that credit management is improving of this bank after foreigner handle the management of the bank. There are many factors, which are effecting to the increment level of NPL. There are two type of factor, one is internal factor and other is external factor. The banks will microanalysis of these factor and take the action immediately. It has been found that bank has high level of NPL that makes higher provision to maintain this provision. Bank interest higher amount in the income generally assets i.e. loan and advances it is loss.

However, the bank's credit management is in good condition. Bank has giving emphasis on loan restructuring of bad loan as well, and main focus of NBL is recovering the bad loan using different of strategies. Level of NPL is decreasing gradually with the implementation of comprehensive financial sector reform program. But existing level is still alarming in order to restore the financial sustainability in the system.

Main causes of increment of NPL are following:

- Weaknesses of credit management of bank
- Over valuation of collateral
- Lack of good project evaluation
- Lack of implementation of rules and regulations of borrower

- Political environment
- Weaknesses of employees

5.3 Recommendations

High level of NPL or NPA not only decreasing the profitability of the banks but also affects the entire financial as well as operational health of the organization. If the NPL does not control immediately, it will be proved it as a cause for the banks in future. Therefore, following are some of the recommendations, which will help to reduce the level of NPL of Nepalese commercial banks.

- **Improvement of credit management:** Main cause of increment of level of NPL is the weakness of credit management of bank. Therefore, the bank should improvement the credit management or bank.
- **Financial analysis of Loan Proposal:** Lack of proper financial analysis of the borrower and his project by the banks, is one of the major cause behind increasing NPA of Nepalese commercial banks. Therefore proper financial analysis should be performed before giving loan to the borrower.
- **Microanalysis and control the factors:** There are many factors which raise the NPL, so bank should microanalysis of these factors and control them.
- **To take the adequate collateral:** Banks want to ensure that their loan is repaid even in case of default. To protect banks from such happenings, the banks take collateral from the borrower so that in the event of default this collateral is disposed for recovery of loan. Therefore banks should take enough collateral so that the bank at least can able to recover its principle and interest amount in case of being unable to repay by the borrower.

- **Improvement of bank:** Management inefficiency is one of other major cause behind high level of NPA of Nepalese commercial banks. Therefore, all banks should provide necessary training regarding loan management to the managers and staffs who are involving in managing their lending experts within or outside the country whatever possible. Banks should be done the analysis of projects of borrower, suitable valuation of collateral, adopt the good lending policy, collecting related information about the borrowers.
- **To take the action for recovery of bad loan:** Those banks having high level of NPL should take immediate action toward recovering their bad loan as possible as soon. In case of default to repay the loan by borrower, the bank, should dispose off the collateral taken from the borrower and recover principle and interest amount.
- **Maintain the loan loss provision:** To decrease the NPL, loan loss provision will be managed so all Nepalese commercial banks are recommended to maintain loan loss provision in accordance to the NRB's directives.
- **Corporate structure of the banks:** Corporate structure of the banks play key role in the effective loan management. Being loan as risky asset, effort should be made to have proper control in the every step of loan management. Single person or a single department cannot do anything. There should be involvement of at least two officials or two departments.
- **Investment in productive sector:** Sample bank has an increasing trend of total loan and advances i.e. each year. Entire economy is largely dependent upon the proper execution of lending function by commercial banks. Low level of lending means low level of investment resulting to low level of productivity which may ultimately affect negatively o the national economy. Loans and advances on one hand is the highest income generating asset of bank and on the other hand it also helps to

upgrade the economic health of country. Hence the banks are recommended to increase its investments in productive sector in the form of loan and advances.

- **Collecting related information about the borrowers:** It is often said that prevention is better than cure. Hence it is recommended for all the banks to take preventive measures before the loan goes to default. All the banks are recommended to have and information system together all the possible information and activities about its borrowers so that necessary precautions can be taken in time.
- **Co- operative with NRB and CIB:** The regulation regarding loan classification and provisioning is stringent and tighter than the previous hence NRB should not only impose directives but also create supportive environment for the commercial banks. NRB is recommended to strengthen Credit Information Bureau (CIB) so that banks can get required credit information about the borrowers on time. This would help in reducing NPL.
- **Improvement of operational management:** If the operational activities are not managed smoothly, increasing trend of loan and advances, deposits, assets and decreasing trend of NPL and LLP does not attribute acceptable figure of net profit .So appropriate and healthy operation is heart of successful way of future.

ANNEX-1

TIME SERIES ANALYSIS

Trend analysis can be calculated using following equation:

$$Y_c = a + bX$$

Where,

Y_c = Trend Values

a = Y intercept or the computed trend figure of the Y variable, when X = 0

b = Slope of the trend line of the amount of change in Y variable that is associated with change in 1 unit in X variable.

X = Variable that represent time i.e. time variable

The value of the constants a and b can be determined by solving the following two normal equations.

$$Y \; X Na \, \Gamma b \quad X \; \ldots\ldots\ldots\ldots\ldots\ldots\text{(i)}$$

$$XY \; Xa \quad X \, \Gamma b \quad X \ldots\ldots\ldots\ldots\text{(ii)}$$

Where, N = number of years

The values of constant a and b can easily be determined by using following formula.

$$a = \frac{Y}{N}$$

$$b = \frac{XY}{X^2}$$

1.1 Calculation of Determinants for Expected Trend Value of NPL.

Year(mid July)	NPL(Y)	Deviation from mid July 2009 (X)	X^2	XY
2007	1856	-2	4	-3712
2008	2067	-1	1	-2067
2009	967	0	0	0
2010	1242	1	1	1242
2011	1413	2	4	2826
Total	**7545**	**0**	**10**	**-1711**

Where,

$\phi y=7545$, $\phi x^2=10$ $\phi xy= -1711$, $\phi x=0$

When $\phi x=0$, from the two normal equations,

$$a=\frac{y}{n}=\frac{7545}{5}=1509$$

$$b=\frac{xy}{x2}=\frac{Z1711}{10}=-171.10$$

Thus,

Average total NPL (a) =1509

Rate of Change of total NPL (b) =-171.10

Hence, the equation of straight line trend is y_c=a+bx

y_c=1509-171.10x

Calculation of Expected Trend Value of NPL.

Year(mid July)	Loan & Advance (Y)	Deviation from mid July 2009 (X)	X^2	XY
2007	13757	-2	4	-27514
2008	15765	-1	1	-15765
2009	19482	0	0	0
2010	24935	1	1	24935
2011	26710	2	4	53420
Total	**100649**	**0**	**10**	**35076**

Year (Mid July)	Deviation from mid July 2009 (X)	Y=a+bx Y =1509-171.10x
2007	-2	1,851.20
2008	-1	1,680.10
2009	0	1,509.00
2010	1	1,337.90
2011	2	1,166.80
2012	3	995.70
2013	4	824.60
2014	5	653.50
2015	6	482.40
2016	7	311.30

1.2 Calculation of Determinants for Expected Trend Value of Total Loan & Advances.

Where,

$\phi y=100649$ $\phi x^2=10$ $\phi xy= 35076$, $\phi x=0$

When $\phi x=0$, from the two normal equations,

$$a=\frac{y}{n}=\frac{100649}{5}=20129.80$$

$$b=\frac{xy}{x2}=\frac{35076}{10}=3507.60$$

Thus,

Average total Loan & Advances (a) =20129.80

Rate of Change of total Loan & Advances (b) =3507.60

Hence, the equation of straight line trend is y_c=a+bx

y_c=20129.80+3507.60x

Calculation of Expected Trend Value of Loan & Advances.

Year (Mid July)	Deviation from mid July 2009 (X)	Y=a+bx y=20129.80+3507.60x
2007	-2	13,114.60
2008	-1	16,622.20
2009	0	20,129.80
2010	1	23,637.40
2011	2	27,145.00
2012	3	30,652.60
2013	4	34,160.20
2014	5	37,667.80
2015	6	41,175.40
2016	7	44,683.00

1.3 Calculation of Determinants for Expected Trend Value of Total Assets.

Where,

Year(mid July)	Total Asset (Y)	Deviation from mid July 2009 (X)	X^2	XY
2007	39259	-2	4	-78518
2008	42053	-1	1	-42053
2009	47559	0	0	0
2010	46431	1	1	46431
2011	52601	2	4	105202
Total	**227903**	**0**	**10**	**31062**

$\phi y=227903$, $\phi x^2=10$, $\phi xy= 31062$, $\phi x=0$

When $\phi x=0$, from the two normal equations,

$$a=\frac{y}{n}=\frac{227903}{5}=45580.60$$

$$b=\frac{xy}{x2}=\frac{31062}{10}=3106.20$$

Thus,

Average total Assets (a) =45580.60

Rate of Change of total Assets (b) =3106.20

Hence, the equation of straight line trend is y_c=a+bx

y_c=45580.60+3106.20

Calculation of Expected Trend Value of Total Assets.

Year (Mid July)	**Deviation from mid July 2009 (X)**	**Y=a+bx** **y_c=45580.60+3106.20**
2007	-2	39,368.20
2008	-1	42,474.40
2009	0	45,580.60
2010	1	48,686.80
2011	2	51,793.00
2012	3	54,899.20
2013	4	58,005.40
2014	5	61,111.60
2015	6	64,217.80
2016	7	67,324.00

1.4 Calculation of Determinants for Expected Trend Value of Loan Loss Provision.

Year(mid July)	**Loan Loss Provision (Y)**	**Deviation from mid July 2009 (X)**	**X^2**	**XY**
2007	2698	-2	4	-5396
2008	2513	-1	1	-2513
2009	1945	0	0	0
2010	1528	1	1	1528
2011	1502	2	4	3004
Total	**10186**	**0**	**10**	**-3377**

Where,

$\phi y=10186$, $\phi x^2=10$, $\phi xy= -3377$, $\phi x=0$

When $\phi x=0$, from the two normal equations,

$$a=\frac{y}{n}=\frac{10186}{5}=2037.20$$

$$b=\frac{xy}{x2}=\frac{Z3377}{10}=-337.70$$

Thus,

Average total Loan Loss Provision (a) =2037.20

Rate of Change of total Loan Loss Provision (b) =-337.70

Hence, the equation of straight line trend is y_c= a+bx

y_c= 2037.20-337.70x

Calculation of Expected Trend Value of Loan Loss Provision.

Year (Mid July)	**Deviation from mid July 2009 (X)**	**Y=a+bx** y_c **= 2037.20-337.70x**
2007	-2	2,712.60
2008	-1	2,374.90
2009	0	2,037.20
2010	1	1,699.50
2011	2	1,361.80
2012	3	1,024.10
2013	4	686.40
2014	5	348.70
2015	6	11.00
2016	7	-326.70

1.5 Calculation of Determinants for Expected Trend Value of Net Profit

Year(mid July)	**Net Profit (Y)**	**Deviation from mid July 2009 (X)**	$\mathbf{X^2}$	**XY**
2007	227	-2	4	-454
2008	239	-1	1	-239
2009	894	0	0	0
2010	357	1	1	357
2011	383	2	4	766
Total	**2100**	**0**	**10**	**430**

Where,

$\phi y=2100$, $\phi x^2=10$, $\phi xy= 430$, $\phi x=0$

When $\phi x=0$, from the two normal equations,

$$a=\frac{y}{n}=\frac{2100}{5}=420$$

$$b=\frac{xy}{x2}=\frac{430}{10}=43$$

Thus,

Average total Net Profit (a) =420

Rate of Change of total Net Profit (b) =43

Hence, the equation of straight line trend is y_c= a+bx

y_c= 420+43x

Calculation of Expected Trend Value of Net Profit.

Year (Mid July)	**Deviation from mid July 2009 (X)**	**Y=a+bx** **y_c= 420+43x**
2007	-2	334.00
2008	-1	377.00
2009	0	420.00
2010	1	463.00
2011	2	506.00
2012	3	549.00
2013	4	592.00
2014	5	635.00
2015	6	678.00
2016	7	721.00

1.6 Calculation of Determinants for Expected Trend Value of Total Deposits.

Year (mid July)	**Total Deposits (Y)**	**Deviation from mid July 2009 (X)**	**X^2**	**XY**
2007	39014	-2	4	-78028
2008	41829	-1	1	-41829
2009	45194	0	0	0
2010	42406	1	1	42406
2011	46804	2	4	93608
Total	**215247**	**0**	**10**	**16157**

Where,

$\phi y=215247$, $\phi x^2=10$, $\phi xy= 16157$, $\phi x=0$

When ϕx=0, from the two normal equations,

$$a=\frac{y}{n}=\frac{215247}{5}=43049.40$$

$$b=\frac{xy}{x2}=\frac{16157}{10}=1615.70$$

Thus,

Average total Deposits (a) =43049.40

Rate of Change of total Deposits (b) =1615.70

Hence, the equation of straight line trend is y_c= a+bx

y_c= 43049.40+1615.70x

Calculation of Expected Trend Value of Total Deposits.

Year (Mid July)	**Deviation from mid July 2009 (X)**	**Y=a+bx** y_c**=43049.40+1615.70x**
2007	-2	39,818.00
2008	-1	41,433.70
2009	0	43,049.40
2010	1	44,665.10
2011	2	46,280.80
2012	3	47,896.50
2013	4	49,512.20
2014	5	51,127.90
2015	6	52,743.60
2016	7	54,359.30

ANNEX-2

CORRELATION ANALYSIS

Karl Pearson's correlation coefficient is calculated by using following formula:

$$r = \frac{n\Sigma xy - \Sigma x \Sigma y}{\sqrt{n\Sigma x^2 - (\Sigma x)^2}\sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

2.1 Calculation of Correlation Coefficient between NPL & Total Loan & Advances:

Year Mid July	NPL (x)	Total Loan & Advances(y)	xy	x^2	y^2
2007	1856	13757	25532992	3444736	189255049
2008	2067	15765	32586255	4272489	248535225
2009	967	19482	18839094	935089	379548324
2010	1242	24935	30969270	1542564	621754225
2011	1413	26710	37741230	1996569	713424100
Total	**7545**	**100649**	**145668841**	**12191447**	**2152516923**

Where,

n=5 ϕx=7545, ϕy=100649, ϕxy=145668841, ϕx^2=12191447, ϕy^2=2152516923

$$r = \frac{n\Sigma xy - \Sigma x \Sigma y}{\sqrt{n\Sigma x^2 - (\Sigma x)^2}\sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

$$= \frac{5*145668841 Z 7545*100649}{\sqrt{5*12191447 Z (7545)^2}\sqrt{5*2152516923 - (100649)^2}} = -0.6151$$

Calculation of Coeffi. of Determination (r^2) = $(-0.6151)^2$ = 0.3784

Calculation of Probable error (PE),

$$= \frac{1-r^2}{\sqrt{n}} | 0.6745, = \frac{1 Z 0.3784}{\sqrt{5}} | 0.6745, = 0.1872$$

Calculation of 6PE,

= 6 | PE, = 6 | 0.1872, = 1.1231

2.2 Calculation of Correlation Coefficient between NPL & Total Assets:

Year Mid July	NPL (x)	Total Assets(y)	xy	x^2	y^2
2007	1856	39259	72864704	3444736	1541269081
2008	2067	42053	86923551	4272489	1768454809
2009	967	47559	45989553	935089	2261858481
2010	1242	46431	57667302	1542564	2155837761
2011	1413	52601	74325213	1996569	2766865201
Total	**7545**	**227903**	**337770323**	**12191447**	**10494285333**

Where,

n=5, ϕx=7545, ϕy=227903, ϕxy=337770323, ϕx^2=12191447, ϕy^2=10494285333

$$r = \frac{n\Sigma xy - \Sigma x \Sigma y}{\sqrt{n\Sigma x^2 - (\Sigma x)^2}\sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

$$= \frac{5 * 337770323 \, Z \, 7545 * 227903}{\sqrt{5 * 12191447 \, Z (7545)^2}\sqrt{5 * 10494285333 - (227903)^2}} = -0.6627$$

Calcula of Coeffi. of Determination (r^2) = $(-0.6627)^2$ = 0.4392

Calculation of Probable error (PE),

$$= \frac{1 - r^2}{\sqrt{n}} | 0.6745, = \frac{1 Z 0.4392}{\sqrt{5}} | 0.6745, = 0.1689$$

Calculation of 6PE, = 6 |PE, = 6 |0.1698, = 1.0132

2.3 Calculation of Correlation Coefficient between NPL & Total Deposits:

Year Mid July	NPL (x)	Total Deposit (y)	xy	x^2	y^2
2007	1856	39014	72409984	3444736	1522092196
2008	2067	41829	86460543	4272489	1749665241
2009	967	45194	43702598	935089	2042497636
2010	1242	42406	52668252	1542564	1798268836
2011	1413	46804	66134052	1996569	2190614416

Total	**7545**	**215247**	**321375429**	**12191447**	**9303138325**

Where,

n=5, $\phi x=7545$, $\phi y=215247$, $\phi xy=321375429$, $\phi x^2=12191447$, $\phi y^2=9303138325$

$$r = \frac{n\Sigma xy - \Sigma x \Sigma y}{\sqrt{n\Sigma x^2-(\Sigma x)^2}\sqrt{n\Sigma y^2-(\Sigma y)^2}}$$

$$= \frac{5*321375429 \, Z \, 7545*215247}{\sqrt{5*12191447 \, Z(7545)^2}\sqrt{5*9303138325-(215247)^2}} = -0.6295$$

Calculation of Coefficient of Determination (r^2)

$= (-0.6295)^2 = 0.3962$

A Calculation of Probable error (PE),

$= \frac{1-r^2}{\sqrt{n}} | 0.6745, = \frac{1 \, Z \, 0.3962}{\sqrt{5}} | 0.6745, = 0.1818$

Calculation of 6PE,

$= 6 | PE, = 6 | 0.1818 = 1.0908$

1.4 Calculation of Correlation Coefficient between NPL & LLP:

Year Mid July	NPL (x)	Loan Loss Provision (y)	xy	x^2	y^2
2007	1856	2698	5007488	3444736	7279204
2008	2067	2513	5194371	4272489	6315169
2009	967	1945	1880815	935089	3783025
2010	1242	1528	1897776	1542564	2334784
2011	1413	1502	2122326	1996569	2256004
Total	**7545**	**10186**	**16102776**	**12191447**	**21968186**

Where,

n=5 $\phi x=7545$, $\phi y=10186$, $\phi xy=16102776$, $\phi x^2=12191447$, $\phi y^2=21968186$

$$r = \frac{n\Sigma xy - \Sigma x \Sigma y}{\sqrt{n\Sigma x^2 - (\Sigma x)^2}\sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

$$= \frac{5 * 16102776 \, Z 7545 * 10186}{\sqrt{5 * 12191447 \, Z (7545)^2}\sqrt{5 * 221968186 - (10186)^2}} = 0.7391$$

Calculation of Coefficient of Determination (r^2)

$= (0.7391)^2 = 0.5463$

Calculation of Probable error (PE),

$$= \frac{1 - r^2}{\sqrt{n}} | 0.6745, = \frac{1 Z 0.5463}{\sqrt{5}} | 0.6745, = 0.1366$$

Calculation of 6PE,

$= 6 | PE, = 6 | 0.1366, = 0.8197$

1.5 Calculation of Correlation Coefficient between NPL & Net Profit:

Year Mid July	NPL (x)	Net Profit (y)	xy	x^2	y^2
2007	1856	227	421312	3444736	51529
2008	2067	239	494013	4272489	57121
2009	967	894	864498	935089	799236
2010	1242	357	443394	1542564	127449
2011	1413	383	541179	1996569	146689
Total	**7545**	**2100**	**2764396**	**12191447**	**1182024**

Where,

n=5, ϕx=7545, ϕy=2100, ϕxy=2764396, ϕx^2=1219447, ϕy^2=1182024

$$r = \frac{n\Sigma xy - \Sigma x \Sigma y}{\sqrt{n\Sigma x^2 - (\Sigma x)^2}\sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

$$= \frac{5 * 2764396 \, Z 7545 * 2100}{\sqrt{5 * 12191447 \, Z (7545)^2}\sqrt{5 * 1182024 - (2200)^2}} = -0.8226$$

Calculation of Coefficient of Determination (r^2)

$= (-0.8226)^2 = 0.6767$

Calculation of Probable error (PE),

$= \frac{1-r^2}{\sqrt{n}} | 0.6745, = \frac{1 Z 0.6767}{\sqrt{5}} | 0.6745, = 0.0974$

Calculation of 6PE,

$= 6 | PE, = 6 | 0.0974, = 0.5844$

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