CHAPTER-1

INTRODUCTION

1.1 Background of the study

National development of any country depends upon the economic development of that country and economic development is supported by financial infrastructure of that country. Banks constitute an important segment of financials infrastructure of any country. Bank came into existence mainly with the objective of collecting the idle funds and mobilizing them to productive sectors causing overall economic development, which finally leads to national development of the country. “A bank can be defined as a financial department store” which render a host of financials services besides taking deposits and giving loans.” Bank pools the fund scattered in the economy and mobilizes them to the productive sector in the form of loans and advances. Bank is financial institution, which deals with money by accepting various types of deposits, disbursing loan and rendering various types of financial services. It is the intermediary between the and surplus of the financial resources. “Banking when properly organized, aids and facilitates growth of trade and industry and hence of national economy. in the modern economy banks are to be considered not as dealers in money but as the leaders of developments. Banks are not just the storehouses of the country’s wealth but are the reserver of resources necessary for economic development.”

It cannot be denied that the issue of development rests upon the mobilization of resources and banks deals in the process of channelising the available resources in the needed sector. Commercials 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 proportion 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 interests it receives from the borrowers. An average bank generates 60-70 % of its revenues through its lending

activities. The return that the banks enjoy of deposits mobilization through loans and advances is very attractive but they 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; borrowers risk etc. such risks in excessive form had led many banks to go bankrupt in a number of countries.

Amongst the many risk that the banks faces one of the most critical is the borrower's risk the risk of non-payment of the disbursed loans and advances. Failure to collect money disbursed may sometimes results in the bank's inability to make repayment of the money to the depositors and return to the shareholders. The risk involved is so high that it can bring bank to a verge of bankruptcy. The bakers have the responsibility of safeguarding the interest of the depositors, the shareholders and the society they are serving. If a bank behaves irresponsibly, the cost born by the economy is enormous. "Banking system is volatile and sensitive sectors of national economy, which requires effective monitoring and efficient supervision. Smooth and effective regulation of banking activities is a must for sustainable economic growth of a country. The regulatory agency should always be watchful of banking activities carried out by governmental &non governmental banking and financial institution."

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 banks issue various directives and guidelines form 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.

1.1.1 Brief History of Evolution of Banking

The evolution of banking history had started a long time back, during ancient times. There was reference to the activities of moneychangers in temples of Jerusalem in the New Testament. In ancient Greece, the famous temples of Delphi and Olympia served as

the great depositories for people's surplus funds and these were the centers of money lending transactions. However, as a public enterprise, banking made its first beginning around the middle of twelfth century in Italy. The bank of Venice, founded in 1157 was supposed to be the most ancient bank. Following it were established the bank of Barcelona and the Bank of Geneva in 1401 and 1407 respectively. Subsequently Bank of Amsterdam set up in 1609, which was very popular then. The Bank of Venice and the Bank of Geneva continued to operate until the end of eighteenth century .with the expansion of commercial banking activities in Northern Europe, there sprang up number of private banking houses in Europe and slowly it spread throughout of the world.

However, the development of banking in Nepal is relatively recent. Like other countries, landlords, moneylenders, merchant, goldsmith etc are the ancient bankers of Nepal .Though establishment of banking industry was very recent, some crude banking operations were in practice even in the ancient times. In the Nepalese Chronicle, it was recorded that the new era known as Nepal Sambat was introduced by Shankhadhar, a Sudra merchants of kantipur in 880 A.D. after having paid all the outstanding debts in the country. This shows the basis of money lending practice in ancient Nepal. The establishment of "Tejarath Adda" during the year 1877A.D. was the first step in institutional development of banking sector in Nepal. Tejarath Adda did not collect deposit from public but granted loans to public against the collateral of bullions. Consequently the major parts of the country remain untouched from these limited banking activities. The development of trade with India and other countries increase the necessity of the institutional banker, which can act more widely to enhance the trade and commerce and to touch the remote non- banking sector in the economy. Reviewing this situation, the "Udyog Parishad" was constituted in 1936A. D. One year after its formulation, it formulated the "Company Act" and "Nepal Bank Act" in 1937 A.D

Modern banking practices emerged with the establishment of Nepal Bank Limited in 1934 A.D. However; the stand of Nepal Bank Limited alone in total monetary and financial sector was not sufficient and satisfactory. Thus Nepal Rashtra Bank was set up on 2013.01.14 as a central bank under Nepal Rashtra Bank Act 2012 B.S. Similarly on 2022.10.10 Rashtriya Banijya Bank was established as a fully government owned commercial banks. With emergence of RBB, banking spread to both the urban and rural

areas but customers failed to have taste of quality/competitive service because of excessive political and bureaucratic interference. For industrial development, Industrial Development Centre was set up in 2013 B.S. which was converted to Nepal Industrial Development Corporation (NIDC) in 2016 B.S. Similarly, Agriculture Development Bank(ADB) was established in 2024.10.07 with an objective to promote agricultural product so that agricultural productivity could be enhanced through introduction of modern agricultural techniques.

Despite all these efforts of the government, financial sector was sluggish. With the opening of Nabil Bank Limited (while Nepal Arab Bank Limited) in 2041.03.29, the door of opening commercial banks was opened to the private sector. NABIL emerged as the first joint venture bank when the banking industry is totally dominated by Government and Semi –Government banks mainly to revitalize the economy by accelerating productivity in various sectors and to provide efficient customer service. Having observed the success on NABIL based on marketing concept and also because of liberal economic policy adopted by the successive governments, many commercial banks have been established till date. The table no. 1 shows the list of licensed commercial banks as on Mid-January 2008.

Table No. 1
List of Licensed commercial Banks
Till July 2010

S.N	Name of the Bank	Operation date A.D	Head Office
1	Bank Nepal Limited	1937.11.15	kathmandu
2	Rashtriya Banijya Bank	1966.01.23	kathmandu
3	Agricultural Development Bank	1968.01.02	kathmandu
4	Nabil Bank Limited	1984.07.16	kathmandu
5	Nepal Investment Bank	1986.02.27	kathmandu
6	Standard Chartered Bank Nepal Ltd	198601.30	kathmandu
7	Himalayan Bank Limited	1993.01.18	Kathmandu
8	Nepal SBI Bank Limited	1993.07.07	kathmandu
9	Nepal Bangladesh Bank Limited	1993.06.05	kathmandu

10	Everest Bank Limited	1994.10.18	kathmandu
11	Bank of Kathmandu Limited	1995.03.12	kathmandu
12	Nepal Credit & commerce Bank	1996.10.14	siddharthnaugar
13	Lumbini Bank Limited	1998.07.17	narayangarh
14	Nepal ind. & Commercial Bank	1998.07.21	Biratnagar
15	Machhapuchhre Bank Limited	2000.10.03	Pokhara
16	Kumari Bank Limited	2001.04.03	kathmandu
17	Laxmi Bank Limited	2002.04.03	Birgunj
18	Siddhartha Bank Limited	2002.12.24	kathmandu
19	Global Bank Limited	2007.01.02	Birgunj
20	Citizen Bank International Bank Limited	2007.06.21	kathmandu
21	Prime Bank Limited	2007.09.24	kathmandu
22	Sunrise Bank Limited	2007.10.12	kathmandu
23	Bank Of Asia Limited	2007.10.12	kathmand
24	Kist Bank Limited	21.02.2003	kathmandu
25	Janta Bank Limited	21.03.2004	Kathmandu
26	Megha Bank Limited	10.12.2006	Kathmandu

1.1.2 Brief profile of the subjected Banks

Nepal Bank Limited (NBL)

Nepal's first commercial bank, Nepal Bank Limited established on 13th kartik 1994 B.S (1937 AD) in the technical assistance of Imperial Bank of India under 'nepal Bank Act 1937 was inaugurated by His Majesty king Tribhuwan Bir Bikram Shah Dev. The establishment of NBL laid the foundation of institutional banking system in the country. "Nepal Bank Limited had a Herculean responsibility of attracting people toward banking sector from the predominant money lenders net and of expanding banking services," Nepal Bank Limited headquarter was in Katmandu and altogether 117 branches in

different urban and semi urban parts of the country. There are 3415 employees working in the bank. As NBL was established prior to Nepal Rashtra Bank, i.e. Central Bank it carried out the function of commercial bank as well as of the Central Bank until the inception of NRB. Now in the presence of a separate central bank, it is providing wide range of commercial banking services.

Even being one of the largest and oldest banks of the country, the financial health of the bank was very bad. Due to its ill health, under financial sector reform program of NRB in technical assistance program of World Bank and DFID, a management team "ICCMT" consisting of International Bankers form Bank of Scotland (Ireland) has been appointed in NBL in July 22, 2002 to restructure the bank for two years contract and it was renewed after two years. Recently, NRB is looking for new management team. NBL was established as a joint venture of government and private individuals. At first the government owned the majority of the share. Now the government owns only 40% share with the suggestion of World Bank to transfer the ownership to the private sector for better functioning of the financial sector. The present shareholding pattern is as follows.

Sharing Holding Pattern

Nepalese Government ……40.49%
Nepalese General Public……59.51%

Nabil Bank Limited (NABIL)

Nabil Bank Limited formerly named as Nepal Arab Bank Limited was established on July 12th 1984 under a technical service agreement with Dubai Bank Limited, Dubai, which was later merged with Emirates Bank, UAE. It is the pioneer joint venture bank of Nepal. NABIL is the only joint venture bank with 40 points of representation in various parts of the country. NABIL is amongst the most successful bank in Nepal registering strong growth in the balance sheet footings as well as profits year after year. The initial capital of Rs 30 million has grown to Rs 2560.34 million as at mid July2007. NABIL launched its operation with the marketing concept. NABIL has also been a pioneer in

introducing modern banking and innovative products in Nepal like consortium finance, credit card etc. NABIL is the sole banker to a multitude of International Aid Agencies, Non- Government Organization, Embassies and consultant in the kingdom. NABIL has been providing wide range of banking services to various parts of the society. NABIL bank ranks among the top three financial institution in Nepal in terms of market share of handling Nepal's trade. NABIL bank is being managed by a team of qualified and highly experienced professionals. There are altogether 427 employees working in the bank.

Share Holding pattern

NB International Limited, Ireland……..50%
Local financial institutional……20%
Nepalese public……..30%

Standard Chartered Bank Nepal Limited (SCBNL)

Standard Chartered Bank Nepal Limited, formerly known as Nepal Grindlays Bank Limited, was established in 1987 as the third Joint Venture Bank of Nepal in technical collaboration with ANJ Grindlays Bank. In 2000, ANJ Grind lays Bank was amalgamated in Standard Chartered Banking Group and 50% share of Nepal Grindlays Bank was transferred to Standard Chartered Banking Group. Consequently, the name of the bank has been changed as Standard Chartered Bank Nepal Limited. SCBN has altogether 15 branches/outlets within the kingdom. SCBNL is also one, which comes under the top three financial institution of Nepal and has also won the "Banker of the year" award in 2002. There are altogether 351 employees working in the bank.

Share holding pattern

Standard Chartered Grindlays Bank Limited ……50%
Nepal Bank Limited ……..33%
Nepalese Public …….17%

1.2 Focus of the study

Bank disburses loans and advance for predetermined fixed periods or every loan and advances has its maturity period or expiry date and the borrowers must repay the loans by the maturity date. Some loans are recovered within the maturity period but some loans cannot be recovered even after its maturity and remain as non-performing assets of the bank. Bank in Nepal are in poor health. Increasing non performing asset is one of the serve problems to the Nepalese banks. The total none performing of Nepalese banking sector is estimated to be about 15%. As per data of Credit Information Bureau (CIB) there are altogether 2225 black listed borrowers as on 16th July 2007. Bank Investment in the form of loans and advances are not giving desired return. Banks are facing problems in recovering the granted loans that had turned to NPA. The nationalized two commercial banks namely Nepal Bank Ltd and Rashtriya Banijya Bank have non- performing assets to the extent of 20% and 30% respectively .Now a days, in most of national newspaper, it can be seen that government owned commercial banks are publishing names of borrowers who default in making payment of the bank loans. Even the private and joint venture banks are also facing the problem of increasing NPAs. This problem may lead to bankruptcy of bank and failure of banking system adversely affecting the depositors and other parties of the society. The following table shows the NPL status of different banks as on fiscal year 2008/09.

Table No -2
Bank wise NPL

SN	Name of the Banks	June, 2010		
		Total loans Rs million	NPL	
			%	Amount
1	Nepal Bank Limited	17614.89	3.43	604.01
2	Rashtriya Banijya Bank	18644.02	2.1	391.52
3	Agriculture Development Bank Ltd	*19554.10*	*3.01*	*588.57*
4	Nabil Bank Limited	*27999*	*0.80*	*109.43*

5	Nepal investment Bank Limited	*36241*	*0.58*	*210.19*
6	Standard Chartered Bank Limited	*13679.75*	*0.66*	*9028.63*
7	Himalayan Bank Limited	*24793*	*2.16*	*535.52*
8	Nepal SBI Bank Limited	*16789.98*	*1.09*	*183.01*
9	Nepal Bangladesh Bank Limited	*18797.64*	*2.33*	*437.98*
10	Everest Bank limited	*23884*	*0.48*	*114.64*
11	Bank of Kathmandu	*14647*	*1.27*	*186.01*
12	Nepal Credit and Commerce Bank Ltd	*15696*	*1.78*	*279.38*
13	Lumbini Bank Limited	*17602.31*	*1.98*	*348.52*
14	Nepal Industrial and commercial Bank Ltd	*13679*	*0.93*	*127.21*
15	Machhapuchhre Bank Limited	*19876.68*	*.98*	*194.79*
16	Kumari Bank Limited	*14593*	*0.44*	*64.20*
17	Laxmi Bank Limited	*19654.74*	*1.94*	*381.30*
18	Siddhartha Bank Ltd	*13328*	*0.45*	*59.97*
19	Global Bank Limited	*9063*	*0.09*	*8.15*
20	Citizen Bank International Ltd	*15465.68*	*1.65*	*255.18*
21	Prime Bank Limited	*12012.66*	*.89*	*106.91*
22	Sunrise Bank Limited.	*13466.59*	*1.52*	*204.69*
23	Bank of Asia Nepal Ltd	*11232.30*	*1.02*	*114.56*
24	Kist Bank Limited	*6803*	*0.22*	*1496*
25	NMB Bank	*5194*	*0.51*	*26.48*
26	Janta Bank Ltd	*5122*	*0.49*	*25.09*

Sources: -Annual Report and Account 2008/09 (SCBankNL)
: - Annual Report and Account 2008/09 (NABIL BANK Ltd)
: - Annual Report and Account 2008/09 (NEPAL BANK Ltd)

 # NA stands for not applicable as the banks came into operations after mid June 2010.

In order to rescue banks from financial distress, to safeguard depositor's interest and to ensure stability in the economy, BRN issues directives from time to time related to

various aspects of the banks. NRB Directive N o. 2 (2001) is related to loan classification and provisioning of commercial banks. As per this directive commercial banks are supposed to categorize the loans disbursed into four different categories on the basis of ageing of its past dues and each category of loan requires certain percentage of it be provisioned for the probable loss. Going through the old directives regarding loan loss provision, bank has to classify the loans into six different categories and as per that directive, for a loan to be bad the time period of past due was 5 years but with the new directive, that period has also been reduced. This means the previously categorized substandard loan will now be a doubtful loan and doubtful loan will be bad. Accordingly more provision has to be made for probable loss in years to come than previous years. The provisioning amount is taken by deducting from the profit of the bank. Hence there id great impact of loan provision (LLP) in the profitability of the banks. The provision of the loan means the net profit of the bank will come down by that amount. Increase in loan loss provision decrease the profit of the leading to decrease in dividends to the shareholder. However adequate loan loss provision strengthens the financial health of the banks by controlling credit risk and safeguards the depositor's money leading to overall economic development of the country.

1.3 Statement of the problem

After the liberalization started in 1980s, the financial sector made some progress and prudent regulatory measures have been introduced by central bank. However, actual performance of the financial institution could improve. Commercial banks/financial institution in Nepal have been facing several problems like lack of smooth functioning of economy, different policies and guidelines of NRB, political instability, security problem, poor information system, over liquidity caused by lack of good lending opportunities, increasing non performing assets etc. in the present context where Nepalese Banks are facing the problem of increasing NPAs, more amounts have to be allocated for loan loss provision. As earlier mentioned, the provision amount is taken out by deducting from the profit of the bank; the bank's profit margin comes down. This research has been conducted to find out the solution of following problems.

What is the proportion of non-performing loan in the selected commercial banks?

What are the factors leading to accumulation of non- performing loan?

#what are the guidelines and provisions pertaining to loan classification and loan loss provisioning?

#what is the relationship between loan and loan loss provision in selected commercial banks?

#what is the impact of loan loss provision on the profitability of the commercial banks?

1.4 Objectives of the study

a. To find out the proportion of non-performing loan in the selected commercial banks.
b. to find out the factors leading to accumulation of non-performing loan in commercial bank.
c. To study and analyses the guidelines and provision pertaining to loan classification

d. To find out the relationship between loan and loan loss provision in the selected commercial bank.
.

e. To study and the impact of loan loss provision on the profitability of the commercial banks.

1.5 Significance of the study

Through literature of review it has been found that there are no research regarding non-performing loans& loan loss provisioning. Increasing non-performing loan followed by increased loan loss provision is one of the challenges faced by commercial banks in the present context. Proper classification of loans and adequate loan loss provisioning strengthens the financial health of the banks and also reflects the true picture of bank's asset. This research will be able to deliver some of the present issues, latest information and data regarding non-performing loan and loan loss provisioning. Hence, this study will be significant to bankers, shareholders, depositors, further researchers, students etc.

1.6 Limitation of the study

a. Only Nepalese commercial banks have been considered for the study and three banks have been selected as samples for the study.

b. the period of the study is limited from fiscal year 2003/04 to 2008/09

c. because of the strict policy of commercial banks the study is based on the secondary data. The data published in annual reports of respective banks, articles, publication, journals etc has taken into consideration. Any misrepresentation, mistakes, omission etc may affect the outcome to the study. Thus, the reality of study depends on secondary sources of data and questionnaires filled and responses given by the respondents.

e. all the analysis in this study is based on the data as of end of fiscal year i.e. mid July of respective year. Any abnormality in this date may affect the conclusion of the study.

1.7 organization of the study

This research work has been divided into five chapters, namely introduction, review of literature, research methodology, data presentation and analysis and finally summary, conclusion and recommendation.

The **first chapter** includes various aspects of this study like background of the study, focus of the study, statement of the problem, objective of the study, significance of the study and limitation of the study.

The **second chapter** incorporates review of theoretical and related literature regarding the subject matter.

The **third chapter** deals with the research methodology, which consist of research design, sources of data, population and sample along with different statistical and financial tools used in the study.

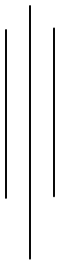
The **forth chapter** includes presentation and analysis of data using different statistical tools and major findings.

The **final and fifth chapter** includes summary conclusion and recommendation regarding the subject matter.

After the completion of the introductory chapter, some relevant literature in the form of books, policies, directives, journals articles, and previous thesis are going to be reviewed in the next chapter.

Thesis Proposal of

A COMPARATIVE STUDY ON **NPA** MANAGEMENT OF COMMERCIAL BANKS IN NEPAL



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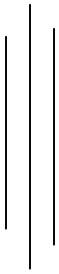

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Chapter -3

Research methodology

Research methodology is a systematic way to solve the research problem. Actually it's a science through which the research is study scientifically. In it, the various sequential steps that are generally adopted by the researcher, studying his research problem among with certain objectives in view are studied. A research methodology helps us to find out accuracy, validity and suitability. Research is a systematic inquiry of any particular topic and methodology is the method of doing research in a well manner. Hence research methodology s the systematic study of research problem that solves them with some logical evidence. The research methodology adopted in the present study as discussed below.

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 answer so to research questions and to control variance. This research will follow analytical and descriptive research design.

3.2 Populations and Sampling

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

A list of licensed commercial banks was obtained from NRB. There are altogether 23 commercial banks in Nepal . the commercial banks of Nepal can be categorized into two types namely Public Sector and Private Sector. Public sector banks include three old bnks NBL, RBB and ADB and private sector banks comprise remaining 20 banks. Out of the total population following 3 commercial banks were selected as samples for this study by using judgmental sampling method.

- **Nepal Bank Limited (NBL)**
- **Nabil Bank Limited (NABIL)**
- **Standard Chartered Bank Nepal Limited (SCBNL**)

Nepal Bank Limited was selected from public sector commercial bank and two major joint venture banks NABIL and SCBNL were selected from private sector commercial banks so that the study could represent true picture of commercial banks.

3.3 Sources of Data

Both primary and secondary data has been used in this study. Bank employees are the primary sources of data and following are the secondary sources of data used in the study.

- Annual reports, newspapers, newsletter, broachers etc of the subject banks.
- Laws, guidelines and directives regarding the subject matter.
- Text books
- Articles published in newspapers, journals, magazines and other publications
- Unpublished thesis and dissertation
- Various reports published by NRB , CIB etc
- Various related websites besides above any kind of other sources, such as assertions, interviews, remarks/opinion by the experts that provides valuable data and conclusion regarding the subject matter has been considered in this study.

3.4 Data Collection Techiniques

Primary datra has been obtained through questionnaire, direct interviews, field visit and telephonic inquiries. The annual reports of NABIL and SCBNL were collected forom concerned banks. The annual reports of NBL were published in Gorkhapatra and the same was referred for the study.

Various publications of NRB were collected from the website CIB. The reference of BRB directives and guidelines has been executed form Nabil Bank Limited and website of NRB. Various reports, textbooks, journals, and unpublished dissertation have been obtained by visiting TU Library and Shankar Dev College Library.

3.5 Data Analysis Tools

The data collected from different sources are recorded systematically and identified. 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 table and charts. For analysis purpose different kinds of appropriate mathematical, statistical and financial tools have been applied. Further to represent the data in simple form diagrams and graphs have also been used.

3.5.1 Financial Tools

While adopting financial tools, a ratio 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 firm by properly establishing relationship between the items of the balance sheet and profit and loss account. Financial analysis is the use of financial statements to analyze a company’s financial position and performance and to assess future financial performance.

3.5.2. Ratio analysis

Ratio analysis is the widely used tool of financial analysis. A ratio is simply one number expressed in term of another and as such it expresses the numerical or quantitative relationship between two variable . ratio anaiysis reflects the relative strengths and weakness of any organization and also indicates the operating and financial growth of the organization. Ratios helps to summarize large quantities of financial data and to make puantitative judgement about the form’s financial performance. The relationship between two accounting figures expressedx mathematically is known as financial ratios. Even though there are many ratios, only those ratios have been calculated which are related to the subject matter. Following ratios have been computed and analyzed in this study.

Loans and Advances to Total Assets Ratio

Loan and advances of any commercial banks represent the major portion in volume of total assets. The ratio of loans and advances to total assets measures the volume of volume of loans and advances in the structure of total assets. The high degree of ratio indicates the performance of the banks in mobilizing its fund by way of lending functions. However, in its reverse side, the high degree is representative of low liquidity ratio. Granting loans advances always carries a certain degree of risk. Thus this asset of banking business is regarded as risky assets. Hence, this ratio measures the management attitude towards risky assets. The low ratio is indicative of low productivity and high degree of safety in liquidity and vice versa. This ratio is calculated as follow.

$$\text{Loans and advances to Total assets ratio} = \frac{\text{Loans and Advances}}{\text{Total Assets}}$$

Loans and advances to total Deposit Ratio (CD Ratio)

The core banking function is to mobilize the funs obtained from the depositors to borrowers and earns profit and CD ratio is the fundamental parameter to ascertain fund development efficiency of commercial bank. In the other words this ratio is calculated to find out how successfully the banks are utilizing their total deposits on credit or loans and advances for profit generation purpose as loans and advances yield high rate of return. Greater CD ratio implies the better utilization of total deposits and better earning, however, liquidity requirements also needs due consideration. Hence 70%-80% CD ratio is considered as appropriate. This ratio is calculated by dividing total credit by total deposit of the bank.

$$\text{Loan and Advances to Total deposit ratio} = \frac{\text{Loans and Adv.}}{\text{Total Deposits}}$$

Non performing Loans to Total Loans and Advances Ratio

This ratio determines the proportion of non-performing loans in the total loan portfolio. Higher ratio implies the bad quality of assets of banks in the form of loans and advances. Hence lower NPL to total credit ratio is preferred. As per international standard only 4% NPL is allowed but in the context of Nepal 10% NPL is acceptable. It is calculated as follows.

$$\text{Non Performing Loans to Total loans and advances} = \frac{\text{Non Performing Loans}}{\text{Total Loans Advances}}$$

Loan Loss Provision to Total Loans and Advances Ratio

This ratio describes the quality of assets in the form of loans and advances that the bank holds. Since, there is risk inherent in loans and advances, NRB has directed commercial banks to classigy 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 fto be made for non-peformintgloan 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 efficiently it manages loan and advances and makes efforts to cope with probable loan loss. Higher ratio implies, higher portion of NPL in the total loan portfolio. This ratio is calculated as follows:

$$\text{Loan Loss Provision Ratio} = \frac{\text{Loan Loss Provision}}{\text{Total Loans Advances}}$$

Provision Held to Non- Performing Loan

This ratio determines the proportion of provision held to non performing loan of the bank. 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 safeguarded against future contingencies that may create due to non performing loan or in other words banks have cushion of provision to cope the problem that may because due to NPL. Hence, higher the ratio better is the financial strength of the bank. This ratio is computed as follows:

$$\text{Provision Held to Non Performing Loan} = \frac{\text{Total Loan Loss Provision}}{\text{Non Performing Loan}}$$

Return on loans and Advances

This ratio indicates how efficiently the bank has employed its resources in the form of loan and advances. It is the ratio of net profit and total loans and advances of bank. Net profit refers to that profit which is obtained after all types of deduction like employee bonus, tax, provision etc. hence, this ratio measures bank's profitability with respect to loans and advances. Higher the ratio better is the performance of the bank. It is calculated as under:

$$\text{Return on Loans and advances} = \frac{\text{Net Profit}}{\text{Total Loans Advances}}$$

3.5.3 Statistical Tools

Statistical tools are the mathematical techniques used to facilitate the analysis and interpretation of numerical data. Statistical analysis is one particular language, which describes the data and makes possible to talk about the relations and the difference of the variables. Following statistical tools have been used in this study.

3.5.2.1 Percentages

A percent is a number of hundredth parts one numbers to another. Uses of percentages make the data much simpler and grasp. It is the simplest statistical device used in interpretation of phenomenon. It can reduce everything to a common base and thereby helps in meaningful presentation. Mathematically, let a represents the base used for comparision, B represents the given data to be compared with the base, then the percentage of givrn number in the base may calculated as

$$\text{percentage}\,(\text{P}\,\%) = \frac{\text{B}}{A} * 100$$

3.5.2.2 Measurement of Central Tendency

Measures of central value are simple statistical treatments of distribution that attempts to find the single figure to describe the entire distribution. It is the best possible value of a group of variables that singly represents to whole group. In the statistical analysis the central value falls with in the approximately middle value of the whole data. Among the several tools of measuring central value, the mean has been used in this analysis where and when necessary. The mean is the arithmetic average of a variable. Arithmetic Mean of a series is given by

$$\text{Mean}\left(\bar{x}\right) = \frac{\sum X}{N}$$

3.5.2.3 Measures of Dispersion

Dispersion measures the variation of the data from the central value. The central value alone is not enough to analyze the quality of data regarding its variability. With the light of dispersion, an average becomes more powerful and meaningful. Following tools of measuring dispersion has been used in this study.

3.5.2.4 Standard Deviation

Standard deviation is the most popular and the most useful measure of dispersion. It indicates the ranges and the size of device from the middle or mean. It measures the absolute dispersion. Higher the value of standard deviation higher is the variability and vice versa. It is the positive square root of average sum of squares of deviations of observations from the arithmetic mean of the distribution. It can be calculated as follows:

$$\text{Standard Deviation}\left(\pm\right) = \sqrt{\frac{\Sigma\left(X - \bar{X}\right)}{N}}$$

3.5.2.5 Coefficient of Variation

The percentage measure of coefficient of standard deviation is called coefficient of variation. The less is the C.V more is the uniformity and consistency and vice-versa. Standard deviation gives an absolute measure of dispersion. Hence, where the mean value of the variable is not equal it is not appropriate to compare two pairs of variables based in S.D only. The coefficient of variation measures the relative measures of dispersion, hence capable to compare two variables independently in terms of their variability.

$$\text{Coefficient of Variation (C.V)} = \frac{\pm}{\bar{X}} * 100$$

3.5.2.6 Correlation Coefficient Correlation (r)

Correlation refers to the degree of relationship between two variables. Correlation coefficient determines the association between the dependent variables and independent variables. If between the variables, increase or decreases in one caus increase or decrease in another, then such variables are cofrrelatid variables. " correlation may be defned as the degree of linear relationship existing between two or more variables. Two varaiables is said to be correlated when the change in the value of one is accompanied by the ahange of another variable. There are different techniques of calculating correlation coefficient. Among various techniques wi have used Karl Pearson Coefficient of correlation. It is calculated as follows:

$$\text{Correlation Coefficient(r)} = \frac{\sum ¡¥}{N \pm x * \pm ¥}$$

Since, r = + 1 shows the perfect positive relation
And r = - 1 shows the perfect negative relation

The reliability of the correlation coefficient is judged with the help of probable error (PE). It is calculated as follows:

$$\text{Probable Error}\,(\text{PE}) = \frac{0.6745(1 - r2)}{\sqrt{N}}$$

Where, r = correlation coefficient

N =No. of pairs of observations

If r>6PE then the correlation coefficient is significant and reliable

If r<6PE, then the correlation coefficient is insignificant and reliable and shows no evidence of correlation.

3.5.3 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. The formula of least square method for the straight line is represented by the following formula.

$$Y_c = \mathbf{a} + \mathbf{bX}$$

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.

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

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

Where, N = No. of years

But for simplifications, if the time variable is measured as a deviation form its mean i.e. mid point is taken as the origin, the negative value in the first half of the series balance out the positive values in the second half so that $\sum x = 0$. The value of constant "a" and "b" can easily be determined by using formula.

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

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

3.5.4. Diagrammatic and Graphical Representation

Diagrams 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 charts and graph have been used for presentation and analysis of data.

After highlighting the research methodology, the next chapter concentrates on presentation and analysis of the study.

Chapter-4
Data Presentation and Analysis

In this section raw form of data collected from various sources are changed into an understand able 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, conclusion and recommendation are going to be derived form the calculations and analysis done in this section.

4.1 Ratio Analysis

4.1.1 Loans and Advances to Total Assets Ratio

Loans and advances of any commercial banks represent the major portion in volume of total assets. The ratio of loan and advances to total assets measures the volume of loans and advances in the structure of total assets. The high degree of ratio indicates the good performances of the banks in mobilizing its fund by way of lending function. However in its reserve side, the high degree is representative of low liquidity ratio. Granting loans and advances always carries a certain degree of risk. Thus this asset of banking business is regarded as risky assets. Hence, this ratio measures the management attitude towards risky assets. The low ratio is indicative of low productivity and high degree of safety in liquidity and vice versa.

Table No.4
Loan and Advances to Total Assets Ratio (%)

Rs in millions

years	NBL			NABIL			SCBNL		
	Loan & advances	Total Assets	Ratio %	Loan & advances	Total Assets	Ratio %	Loan & advances	Total Assets	Ratio %
2003	8106	28405	28.53	8548.66	16745	51.04	6410	23642	35.77
2004	8910	3256	27.3	10586	1718	61.5	8143	2189	37.1

		6	5		6	9		3	9
2005	9756	35918	27.16	12922	22329	57.87	8935	25776	34.66
2006	11058	39258	28.16	15545	27253	57.03	10502	28596	36.72
2007	13251	42053	31.51	21365	37132	57.53	13718	33335	41.15
2008	17614	47559	37.03	27589	43867	62.89	13679	40587	33.70
Mean			**29.99**	**Mean**		**57.99**	**Mean**		**36.53**
S.D			**3.45**	**S.D**		**3.82**	**S.D**		**2.40**
C.V			**11.49**	**C.V**		**6.58**	**C.V**		**6.58**

See appendix no.1
Sources: Annual Reports & Websites of concerned Bank

The above table shows the loans and advances to total assets of three banks for five consecutive Years. Till 2000,the ratio is in decreasing trend in NBL but SCBNL and NABIL shows fluctuating trend. The overall ratio of the three banks has been ranged from 27.16% of NBL in 2005 to 62.89% of NABIL in 2008. The mean ratio of NBL, NABIL and SCBNL is 29.99%, 57.99% and 36.53%, respectively. Hence among the three banks, NABIL has the highest proportion of loans and advances in the total asset structure followed by NBL and then SCBNL. This infers that SCBNL has the lowest degree of investment in risky assets. The management of SCBNL is risk adverse like treasury bills, debentures, National Saving Bonds (NSBs) etc.

The standard deviation of NBL, NABIL and SCBNL are 3.45, 3.82 & 2.40 and CV,s are11.49%, 6.58% & 6.58% respectively. (Appendix-3) Thus it can be interpreted that NBL has higher deviation than NABIL and then SCBNL. This is due to the decreasing trend in loan and advances. But NABIL/SCBNL has equal variation than that of NBL Bank.

4.1.2 Loan and Advances to Total Deposit Ratio

This ratio is often called Credit Deposit ratio (CD ratio). The core banking function is to mobilize the funds obtained from the depositors to borrowers and earn profit and CD ratio is the fundamental parameter to ascertain fund deployment efficiency of commercial bank. In other words this ratio is calculate to find out how successfully the banks are utilizing their total deposits on credit or loans and advances for profit generating purpose as loans and advances yield high rate of return. Greater CD ratio implies the better utilization of total deposits and

better earning, however, liquidity requirements also needs due consideration. Hence 70%-80% CD ratio is considered as appropriate. This ratio is calculated by dividing total credit or loans and advances by total deposits of the bank.

Table No. 5
Loan and Advances to Total Deposits Ratio (%)

Rs. Million

Year Mid July	NBL			NABIL			SCBNL		
	Loan & Advances	**Total Deposits**	**Ratio (%)**	**Loan & Advances**	**Total Deposits**	**Ratio (%)**	**Loan & Advances**	**Total Deposits**	**Ratio (%)**
2003	8106	26710	30.34	8548.66	14119	60.54	6410	21161	30.29
2004	8910	30109	29.59	10586	14586	72.58	8143	19335	42.11
2005	9756	35829	27.22	12922	119347	66.79	8935	23061	38.74
2006	11058	39014	28.34	15545	23342	66.59	10502	24647	42.60
2007	13251	41829	31.68	21365	31915	66.94	13718	29743	46.12
2008	17614	45194	38.97	27589	37348	73.87	13679	35871	38.13
Mean $(\overline{X})$			**31.02**	**Mean $(\overline{X})$**		**68.55**	**Mean $(\overline{X})$**		**39.67**
SD $(\pm)$			**3.82**	**SD $(\pm)$**		**3.45**	**SD $(\pm)$**		**3.45**
CV			**12.33 %**	**CV**		**5.03 %**	**CV**		**5.04 %**

Sources: Annual Reports & Websites of relevant Bank

Appendix No. 2

Table no. 4 shows the loans and advances to total deposit of three banks for five consecutive years. This ratio shows decreasing trend till 2005 then from 2006 it is upwarding in NBL and there is almost increasing trend in NABIL and very much fluctuating in SCBNL. The overall ratio of the three banks has been ranged from 27.22% of NBL in 2005 to 73.87% of NABIL in 2008. NABIL has the highest ratio for the whole period. The mean ratio of NBL, NABIL and SCBNL is 31.02%, 68.55% and 39.67% respectively. Hence among three banks NABIL has the highest proportion of loans and advances in the total deposit followed by NBL and then SCBNL. It signifies that NABIL and NBL have been ahead in utilization depositor's money on loans and advances with the objective to earn profit. This infers that SCBNL has very low investment in the form of loans and advances. The management of SCBNL is risk adverse as they have invested higher

proportion of their deposit in risk free or nominally risky assets like treasury bills, debentures, national Saving Bonds (NSBs) etc.

The standard deviation of NBL, NABIL and SCBNL are3.82 , 3.45 and 3.45 respectively and the CV are 17.92%, 9.3% and 15.75% respectively. (Appendix-2) Thus it signifies that NBL has higher deviation wit higher degree of variation in this ratio. Eventhough SCBNL has least deviation but moderate in tg terms of variation. NABIL is moderate in terms of deviation and has least variability during the study period.

4.1.3 Non –Performing Loans to Total Loans and Advances Ratio

This ratio determines the proportion of non-performing loans in the total loan portfolio. As per NRB directives the loans falling under category of substandard, doubtful and loss are regarded as non-performing loan. Higher ratio implies the bad quality of assets of banks in the form of loans and advances. Hence lower NPL to total credit ratio is preferred. As per international standard only 5% NPL is allowed but in the context of Nepal maximum 10% NPL is acceptable.

Table No. 6
Non-Performing Loans to Loans & Advances (%)

Rs. in Million

Year	NBL			NABIL			SCBNL		
	NPL	Loans & Advances	Ratio (%)	NPL	Loans & Advances	Ratio (%)	NPL	Loans & Advances	Ratio (%)
2003	2386	8106	29.43	286	8548.66	3.34	252	6410	3.93
2004	2304	8910	25.86	144	10586	1.36	226	8143	2.77
2005	2262	9756	23.19	182	12922	1.4	195	8935	2.18
2006	1856	11058	16.78	178	15545	1.14	197	10502	1.87
2007	1951	13251	14.72	161	21365	0.75	128	13718	0.93
2008	966	17614	5.48	22	27589	0.81	91	13679	0.66

				4				
Mean $(\overline{X})$			**115.46**	**Mean $(\overline{X})$**		**1.47**	**Mean $(\overline{X})$**	**2.06**
SD $(\pm)$			**7.96**	**SD $(\pm)$**		**0.86**	**SD $(\pm)$**	**1.09**
cv			**41.35 %**	**cv**		**58.51 %**	**cv**	**53.17 %**

See appendix no. 3
(Sources: Annual Report & Websites of Concerned Banks)

Table No.5 exhibits the ratio of non-performing loans to and advances of NBL, NABIL and SCBNL for five year. The figure represented in the above table no. shows that NBL has the highest ratio through the study period. SCBNL is moderate in this ratio and shows the least ratio and shows the decreasing trend. NABILs and SCBNLs decreasing trend of NPL is the result of effective credit management of bank and it effort of recovering bad debts through establishment of Recovery Cell. The overall ratio has been ranged from 0.66% of NABIL in 2008 to 29.43 of NBL in 2003. The mean non-performing loan to total loan ratio of NBL, NABIL & SCBNL ARE 115.46%, 1.47%, AND 2.06% respectively. This ratio is significantly high of NBL in comparison to other two banks and portrays the critical condition of the banks. NBL has NPL very much higher than the acceptable standard of 10%. The average percentage for NPL to total loan of NABIL and SCBNL is below the prescribed standard.

The standard deviation of NBL, NABIL, and SCBNL are 7.96, 0.86 and 1.09 and CVs are 41.35, 58.51% & 53.17% respectively. (Appendix-3) Thus it signifies that SCBNL has the least deviation and also lower degree of variation in this ratio. Among the three banks, SCBNL is moderate in terms of deviation but has higher degree of variability and NBL has the highest deviation but the moderate variability of ratio during the period. Since NPL is one of the causes of banking crisis, NBL and even other two banks should give serious attention to this matter.

4.1.4 Loan Loss Provision to Total Loans and Advances 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, a 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 he banks. Since high provision has to be made for non-performing loan, higher provision for loan loss reflects increasing non-performing loan 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 efficiently it manages loan and advances and makes

efforts to cope with probable loan loss. Higher ratio implies higher proportion for NPL in the total loan portfolio.

Table No 7
Loan Loss Provision to Loans and Advances (%)

Rs. In million

Year	NBL			NABIL			SCBNL		
	LLP	Loan & Advances	Ratio	LLP	Loan & Advances	Ratio	LLP	Loan & Advances	Ratio
2003	2882	8106	35.55	358	8548.66	3.01	283	6410	3.00
2004	2710	8910	30.41	360	10586	3.40	227	8143	2.78
2005	2685	9756	27.52	356	12922	2.75	270	8935	3.02
2006	2698	11058	24.39	357	15545	2.29	287	10502	2.73
2007	2513	13251	18.96	394	21365	1.84	245	13718	1.78
2008	1945	17614	11.04	409	27589	1.48	200	13679	1.46
Mean $(\overline{X})$			**24.64**	**Mean $(\overline{X})$**		**2.46**	**Mean $(\overline{X})$**		**2.46**
SD $(\pm)$			**7.95**	**SD $(\pm)$**		**0.66**	**SD $(\pm)$**		**0.62**
CV			**32.27 %**	**CV**		**26.96 %**	**CV**		**25.05 %**

See appendix no.4
(Source: Annual Reports & Websites of Concerned Banks)

Table No.6 exhibits the ratio of loans loss provision to loans and advances of NBL, NABIL and SCBNL for six consecutive years. The figure represented in the above table no. 6 shows that NBL has the highest ratio through out the study period. SCBNL shows the least ratio during the study period and NABIL is moderate in loan loss provision ratio. The overall ratio has been ranged from 1.46% of SCBNL in 2008 to 35.55% of NBL in 2003. The mean loan loss ratio of NBL, NABIL, & SCBNL are 24.64%, 2.46% and 2.46% respectively. This ratio of NBL is significantly high in comparison to other two banks. Higher LLP is indicative of poor and ineffective credit policy, higher proportion of non-performing asset and poor performances of the economy. Hence the greater ratio of NBL suggest that there is high proportion of NPL in the total loans and advances & decreasing trend of loan loss provision ratio of NABIL and SCBNL explains that both the has been successful to reduce its non performing loan resulting to decrease LLP.

The standard deviation of NBL, NABIL& SCBNL are 7.95, 0.66 &0.62 and C.Vs are 32.27 %, 26.96% & 25.05% respectively (appendix-4). Thus it signifies that NBL has higher deviation with higher degree of variation in this ratio. Among the three banks, NABIL is moderate in terms of variability and SCBNL has the least variability of ratio during the study period.

4.1.5Loan Loss Provision Held to Non-Performing Loan Ratio

This ratio determines the proportion of provision held to non-performing loan of the bank. This ratio measures upto what extent of risk inherent in NPL is recovered by the total loan loss provision. Higher ratio signifies that the banks are safeguarded against future contingencies that may create due to non-performing loan or in other words banks have cushion of provision to cope the problem that may be cause due to NPL. Hence higher ratio is the better financial position of the bank.

Table No. 8
Provision Held to Non-Performing (%)

Rs.in Million

Year	NBL			NABIL			SCBNL		
	LLP	NPL	Ratio (%)	LLP	NPL	Ratio (%)	LLP	NPL	Ratio (%)
2003	2882	2386	107.58	358	286	125.17	283	252	112.30
2004	2710	2304	108.66	360	144	250.00	227	226	100.44
2005	2685	2262	118.70	356	182	195.60	270	195	138.46
2006	2698	1856	145.36	357	178	200.56	287	197	145.68
2007	2513	1951	128.80	394	161	244.72	245	128	191.40
2008	1945	966	201.34	409	224	182.58	200	91	219.78
Mean $(\bar{X})$			**113.51**	**Mean $(\bar{X})$**		**199.77**	**Mean $(\bar{X})$**		**151.34**
SD $(\pm)$			**32.31**	**SD $(\pm)$**		**6.45**	**SD $(\pm)$**		**42.05**
CV			**23.92%**	**CV**		**3.23%**	**CV**		**27.78%**

See appendix no.5
(Source: Annual Report & Website of Concerned Banks)

Table No.7 exhibits the ratio of provision held to non Performing loan of NBL, NABIL and SCBNL for six consecutive years. The overall ratio has been ranged from 100.44% of SCBNL in 2004 to 250.00% of NABIL in 2004. The mean ratio of NBL, NABIL & SCBNL are 113.51%, 199.77%, and 151.34% respectively. This ratio of NABIL is significantly high in comparison to other two banks and

portrays that the bank has adequate provision against non-performing loan but this ratio sf SCBNL is comparatively lower.

The standard deviation of NBL, NABIL, & SCBNL are 32.31, 6.45 & 42.05 and C.V is 23.92 %, 3.23% and 27.78% respectively (appendix-5). Thus it signifies that SCBNL has the lowest deviation along with the least degree of variation in this ratio. Among the three banks, NBL is moderate in terms of both deviation and variability and NABIL has the highest deviation and the highest variability of variability of ratio during the study period.

4.1.6 Return on loan and advances

This ratio indicates how efficiently the bank has employed its resources in the form of loans and advances. This ratio is calculated by dividing net profit of the bank by total loans and advances. Net profit refers to that profit which is obtained after all types of deduction like employee bonus, tax provision, etc. hence this ration measures bank's profitability wit respect to loans and advances. Higher the ratio better is the performance of the bank.

Table no. 9
Return on Loan and Advance (%)

Rs. in million

Year	NBL			NABIL			SCBNL		
	Net Profit/ loss	Loan & advance	Ratio (%)	Net Profit/ loss	Loan & advance	Ratio (%)	Net Profit/ loss	Loan & advance	Ratio (%)
2003	1302	8106	16.06	455	8548.66	5.32	537	6410	8.37
2004	1398	8910	15.69	518	10586	4.89	539	8143	6.62
2005	1207	9756	12.37	635	12922	4.91	658	8935	7.36
2006	226	11058	2.04	673	15545	4.32	691	10502	6.57
2007	239	13251	1.80	746	21365	3.49	818	13718	5.96
2008	894	17614	5.07	1031	27589	3.73	1025	13679	7.49
Mean $(\bar{X})$			**8.84**	**Mean $(\bar{X})$**		**4.44**	**Mean $(\bar{X})$**		**7.06**
SD $(\pm)$			**6.07**	**SD $(\pm)$**		**0.68**	**SD $(\pm)$**		**0.79**
CV			**68.17%**	**CV**		**15.44%**	**CV**		**11.27%**

Sources: Annual Reports & Websites of Concerned Banks
Appendix no. 6

Table No. 8 exhibits the ratio of return on loans and advances of NBL, NABIL and SCBNL for six year. The figure represented in the above table no.8 show that

NBL has the highest ratio through out the study period except in year 2003 and 2004. SCBNL is moderate in this ratio and shows decreasing trend. NBL is in loss in first two years but after that it is in profit during the study period. The overall ratio has been ranged from 1.80% of NBL in 2007 to 16.06% of NBL in 2003. The mean ratio of NBL, NABIL & SCBNL is 8.84%, 4.44%, and 7.06% respectively. Since NBL's net profit is the highest among all the three banks, this ratio is also the highest.

The standard deviation NBL, NABIL and SCBNL are 6.07, 0.68, and 0.79 and C.Vs are 68.17%, 15.44% & 11.27% respectively (appendix-6). Thus it signifies that NABIL has the least deviation with moderate degree of variation in this ratio. Among the three banks SCBNL is moderate in terms of deviation & least in variability. NBL has the highest deviation with the highest variability of ratio during the study period. Thus it can be concluded that even though NBL has the highest exposure on loans and advances, the bank has failed to earn return of loans and advances.

Following figure no. 12&3 represents six years Performing Loans, Non-Performing Loans and Loan Loss Provision of NBL, NABIL and SCBNL.

Figure No.1
Loan& Advance, Non Performing Loan & Loan Loss Provision Status.

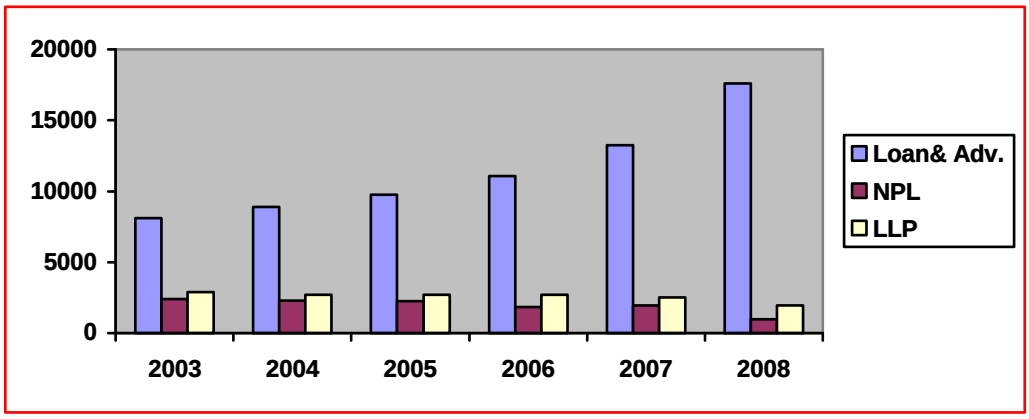

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Figure No. 2
Loan and Advance, Non Performing Loan & Loan Loss Provision

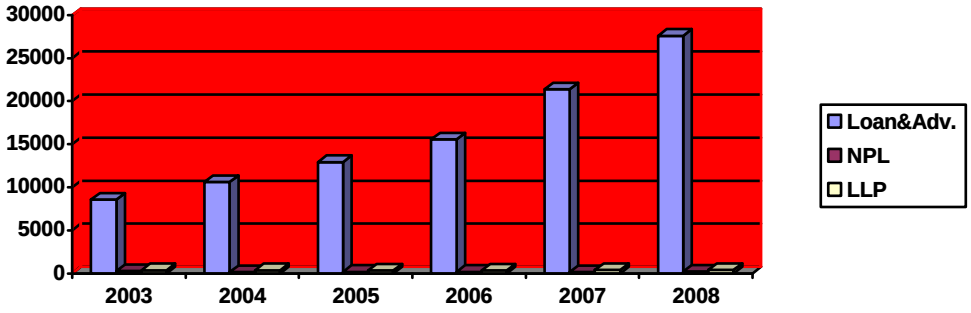
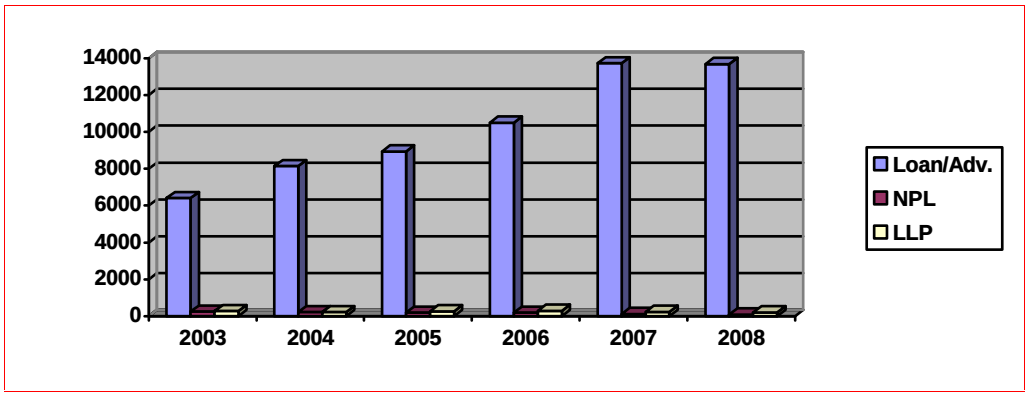


Figure No.3
Loan and Advance, Non Performing Loan & Loan Loss Provision



4.2 Correlation Analysis

4.2.1 Correlation between Loan Loss Provision and Loans and Advances

The correlation between LLP and loans and advances shows the degree of relationship between these two items. How a unit increment in loans and advances affect the loan loss provision is measured b this correlation. Here loans and advances is independent variable and LLP is dependent variable.

Table No.10
Correlation between LLP and Loans and Advances

Banks	Correlation coefficient (r)	Probable Error (P.E)	6*PE
NBL	(0.86)	0.5745	3.45
NABIL	0.29	0.25	1.50
SCBNL	0.55	.30	1.80

Table no. 9 explains the relationship between LLP and loans and advances (appendix 7). Here the correlation coefficient of NBL is-0.86 and it is less than 6 times the value of its P. E and even more than P.E the correlation coefficient is insignificant. In other words, the total LLP of NBL is correlated with the loans and advances during the study period. The correlation coefficient is negative as the loans and advances are increasing and also LLP is decreasing due to decrease non-performing loan of NBL.
The correlation coefficient of NABIL is 0.29 and P.E is 0.25 and 6P.E is 1.25. Since r is less than 6 PE, there is positive correlation between LLP and loans and advances of NABIL. So, correlation coefficient is said to be low significant. It is due to increasing trend in loan and advances and decreasing trend in LLP because of decrease in NPL because of decrease in NPL.

The correlation coefficient of SCBNL is 0.55 and it is more than PE an also less than 6 times the value of PE. Hence there is positive correlation between LLP and loans and advances of SCBNL and its correlation coefficient is moderate. This is due to increasing trend in loan and advances and decreasing trend in LLP due to decrease in NPL.

4.2.2 Correlation between Loan Loss Provision and Non-Performing Loan

The correlation between LLP describes the relationship between LLP and NPL. How a unit increases in NPL effect the LLP is exhibited by this correlation. Here non-performing loan is independent variable and LLP is dependent variable. As earlier mentioned NPL are the loan falling of the category of Substandard, Doubtful and Loss loan and the respective provisioning requirement is 25%, 50% and 100%. Higher the NPL higher will be the provisioning amount.

Table No.11
Correlation between Loan Loss Provision and Non-Performing Loan

Banks	Correlation Coefficient (r)	Probable Error (PE)	6*PE
NBL	0.00005	0.2751	1.65
NABIL	0.02	0.2751	1.65
SCBNL	0.67	0.153	0.92

Table no. 10 explains the relationship between LLP and NPL. (Appendix 8) all the three banks have positive correlation between LLP and NP:. That means increment in NPL leads to increment in LLP. The correlation coefficient of NBL is 0.000005 and its P.E and 6PE are 0.2751 and 1.65. Since correlation coefficient (r) is lesser than 6 times the value of P.E which represents no significant, the correlation coefficient is significant and reliable..

The correlation coefficient fo NABIL is 0.02 and its P.E is .027 and 6PE is 1.659. in case of NABIL r is less than 6 times the value of P.E but greater than the PE. Hence its correlation coefficient is said to be insignificant and there is low degree of positive correlation between LLP and NPL on NABIL.

The correlation coefficient of SCBNL is 0.67. It is less than 6 times the value of P.E but higher than the value of PE. Hence here is positive correlation between NPL and LLP of SCBNL but has moderate condition.

4.2.3 Correlation between Loans and advances and deposit

Deposit is one of the major items of liability side and loans and advances is the major item of assets side of balance sheet of any commercial bank. Bank's disburses loans and advances through the funds received from the depositors. The correlation coefficient between loans and advances and deposit describes the degree of relationship between these two variables. Here deposit is independent variable and loans and advances is dependent variable. Hence how a unit increase in deposit impact in the volume of loans and advances is exhibited by this correlation coefficient.

Table No.11
Correlation between Loan & Advances and Deposit

Banks	Correlation Coefficient (r)	Probable Error (PE)	6*PE
NBL	0.91	0.048	0.288
NABIL	0.99	0.0044	0.0267
SCBNL	0.90	0.048	0.288

See Appendix :- 9

Table no. 11 shows the correlation coefficient between loan and advance and deposit of all three banks. In NBL, the r between loan and advance and deposit is 0.91 which P.E is 0.048 and 6P.E is 0.288. here r>6 P.E which represent the definite positive relation.

In NABIL, the r is 099 which represents the high degree of positive relation. The PE is 0.004and 6P.E is 0.027. Here the r>6PE that shows the definite Positive relation

Similarly, in SCBNL the r is 0.90, PE is 0.048 and 6PE is 0.28 respectively. The calculation of r>6PE which shows the definite relation.

4.3 Trend Analysis

Trend analysis is statistical tool, which helps to forecast the future values of different variables on the basis of past tendencies of variables. Trend analysis informs about the expected future values of variables. Among the various methods to determine trend the least square method is widely used in practices. Hence in this study also least square method has been adopted to measure the trend behaviors of these selected banks. However, trend analysis is based on the assumption that past tendencies continues in the future. Under this heading the effort has been made to calculate trend values of following variables from mid July 2003 to 2008 and forecaste is done for next five years from mid July 2008 to mid July 2013.

4.3.1Trend Analysis of Loans and Advances

The value of average loan and advances (a), rate of change of loans and advances (b) and trend values of loans and advances of three banks for 10 Years from mid July 2003 to mid July 2013 are as follows. (Appendix 10)

Table No. 12
Trend Value of Loans & Advances

Years (mid July)	Banks		
	NBL, a=11449.17 b=883.79	NABIL, a=16075.83 b=2822.14	SCBNL, a=10231.16 b=960.94
2003	8106	8548	6410
2004	8910	10586	8143
2005	9756	12922	8935
2006	11058	15545	10502
2007	13251	21365	13718
2008	17614	27589	13679
2009	17635.67	19754.98	16957.74
2010	18519.49	38652.95	17918.68
2011	19403.28	41475.09	18879.62
2012	20287.07	44296.93	19840.56
2013	21170.86	47119.37	20801.50

Above table shows that all the three banks NBL, NABIL and SCBNL have increased trend of loans and advances. The average loans and advances of NBL is Rs.11449.17, which is increase at the rate of Rs 1382.1 million every year. Loans and advances are expected to decrease from Rs.17614 in 2008 to 21170.86 million in 2013.

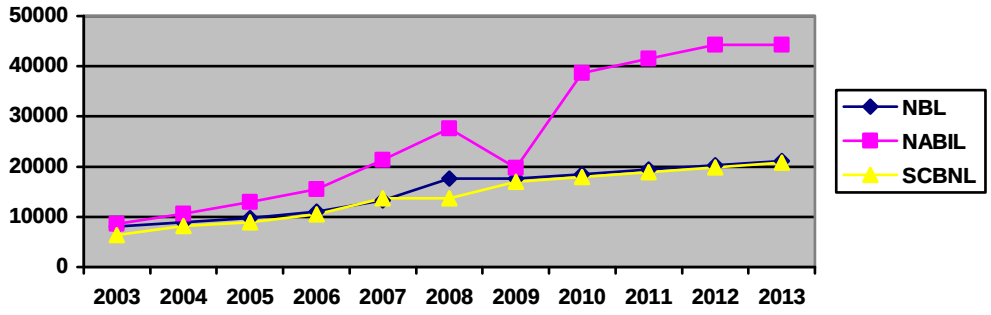
NABIL's average loans and advances is Rs 16075.23and are increasing every year at the rate of Rs 2822.14 million and that of SCBNL at the rate of Rs 960.54

million each year. Hence the expected loans and advances of NABIL are supposed to increase from Rs.27589 in 2008 to 47119.37 million in 2013.

The average loans and advances of SCBNL is Rs.10231.16 million, which is increasing every at the rate of Rs.960.54 million. Accordingly loans and advances of SCBNL are expected to be increase from Rs.13679 in 2008 to Rs 20801.5 million in 2012.

Here non of the Bank is suffering from the problems of baddebts, they are concentrating more on recovering baddebts than the further investment in the form of loans and advances. Hence its loans and advances show increasing trend. Even though NABIL and SCBNL shows increasing trend, rate of increment of NABIL is higher than that of SCBNL. From this it can be interpreted that SCBNL has policy of low investment in loans and advances. Following figure no. 4represents the trend line of line of Loans & Advances for three banks for 10 consecutive years.

Trend Line- Loan & Advance of NBL, NABIL and SCBNL Bank



Financial Year Ending (Mid July)

4.3.2 Trend Analysis of Non-Performing Loan

The calculated values of average Non Performing Loan (a), rate of change fo NPL (b) and trend values of NPL for 10 years from mid July 2003 to mid July 2012 are as follows: (appendix 5)

Table No.13
Trend Values of Non- Performing Loan

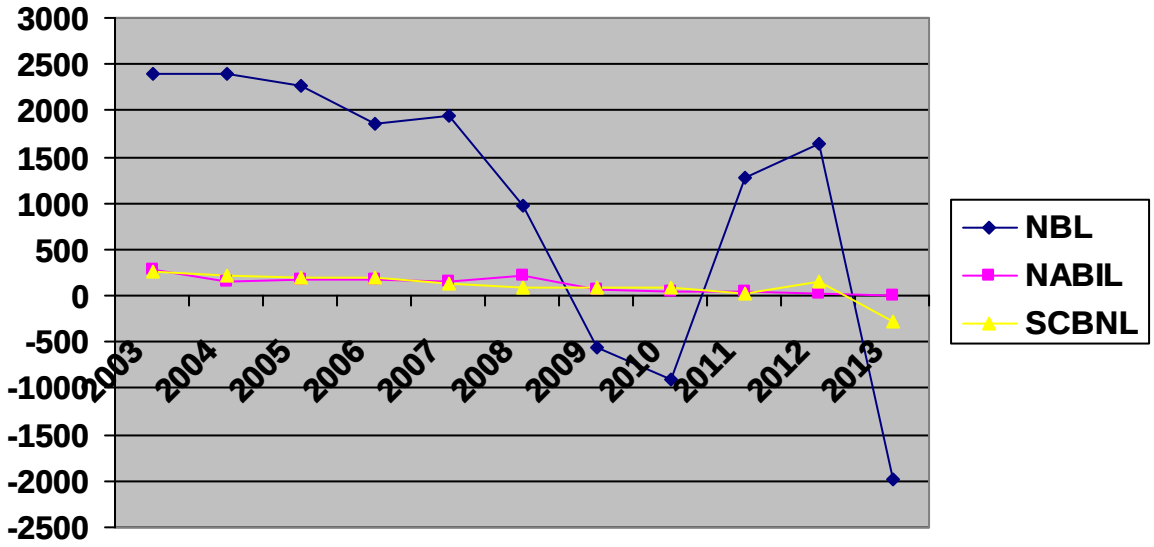
Rs. In million

Years Mid July	Banks		
	NBL, a=1971 b=360.28	NABIL, a=195.33 b=17.68	SCBNL,a=181.5 b=124.25
2003	2401	286	252
2004	2390	144	226
2005	2262	182	195
2006	1856	178	197
2007	1951	161	128
2008	966	224	91
2009	-550	71.57	219.25
2010	-911.24	53.89	95
2011	-1271.52	36.21	-29.25
2012	-1631.80	18.53	-153.35
2013	-1992.08	0.85	-277.75

Table no.13 shows that all the three banks have decreasing trend of NPL. The average NPL of NBL is Rs 1971cg is increasing at the rate of Rs360.28 on every year. NPA is expected to increase from Rs966 million in 2008 and in minus till 2013.. NBL is concerning more on recovering baddebts than the further investment in the form of loans and advances, so its rate of decreasing of NPL is higher. After the certain period the decreasing rate may decrease and the NPL may not be zero.

NABIL's average NPL is Rs 195.33 is increasing rate may te of Rs 17.68 million. ion. Hence the expected NPL of NABIL is supposed to increase from Rs 224 million in 2008 to Rs minus million in 2013.

The average NPL as SCBNL is Rs 181.5 million, which is increasing every year at the rate of Rs. 124.25. Accordingly NPL of SCBNL is expected to increase from Rs 91 million in minus. NBL has significantly high non-performing loan in the total volume of loans and advances but its rate of decrease is also very high. If this trend continues, it would able to decrease its NPL dramatically. Due to NABIL's recovery efforts through establishment of Recovery cell; its NPL has come down in recent years. Hence NABIL shows decreasing trend of NPL. Before few years NPL of SCBNL was relatively lower that that of other two banks, but in the recent years NABIL has the lower NPL. Following figure no.5 represents the trend line on non-performing loan of three banks for 11 consecutive years.



4.3.3 Trend Analysis of Loan Loss Provision

The calculated values of average Loan Loss Provision (a) rate of change of LLP (b)and trend value of LLP for 10 Years from mid July 2003 to mid July 2013 of the three banks are as follows (Appendix 5)

Table No. 15
Trend Values of Loan Loss Provision

In Rs. Million

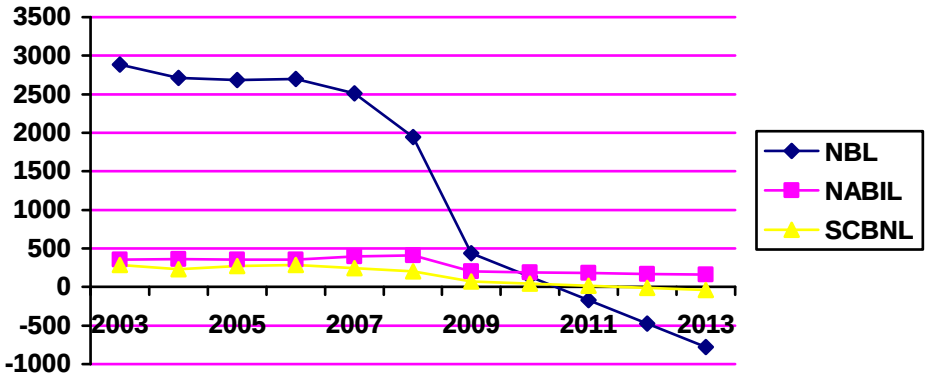
Years Mid July	Banks		
	NBL, a=2572.16 b=304.54	NABIL, a=272.33 b=10.17	SCBNL,a=252 b=26.22
2003	2882	358	283
2004	2710	360	227
2005	2685	356	270
2006	2698	357	287
2007	2513	394	245
2008	1945	409	200
2009	4.40	201.13	68.40
2010	135.84	190.97	42.24
2010	-168.7	180.80	16.02
2012	-472.84	170.63	-10.2
2013	-777.78	160.46	-36.42

Table No. 14 shows that among three banks NABIL is not showing the decreasing trend of LLP. The average LLP of NBL is Rs.2572.16, which is increasing at the rate of Rs.304.54 million every year. LLP of NBL is expected to decrease from Rs 1945 in 2008 to Rs -777.78 million in 2013.

NABIL's average LLP is Rs 272.33 which is increasing every at the rate of Rs.10.17 million. Hence the expected LLP of NABIL is supposed to decrease from Rs. 409 million in 2008 to Rs 160.46 million in 2013.

The average LLP of SCBNL is Rs. 252.00 million, which is increasing every year at rate of Rs. 26.22 million. Accordingly LLP of SCBNL is expected to decrease from Rs 200 million in 2008 to Rs. -36.42 million in 2013.

As, NBL is concentrating to recover the bad debt and trying to decrease the amount of NPL which decreasing rate of LLP is very high. As shown on the above table no, 14 the LLP amount of NBL is expected to be zero after 2010. But it is not possible because according to the rule of Nepal Rashtra Bank the provision should be done in every loan either they are good or bad. NABIL's and SCBNL's decreasing trend of LLP shows that they are successful in reducing the non-performing loans of the bank. Following figure no.6 represents the trend line of loan loss provision of three banks for 11 consecutive years.



4.3.4 Trend Analysis of Net Profit

The calculated values of average of Net Profit (a), rate of change of Net Profit (b) and trend values of Net Profit for 11 years from mid July2003 to mid July 2013 of the three banks are as follows (Appendix 5)

Years	Banks

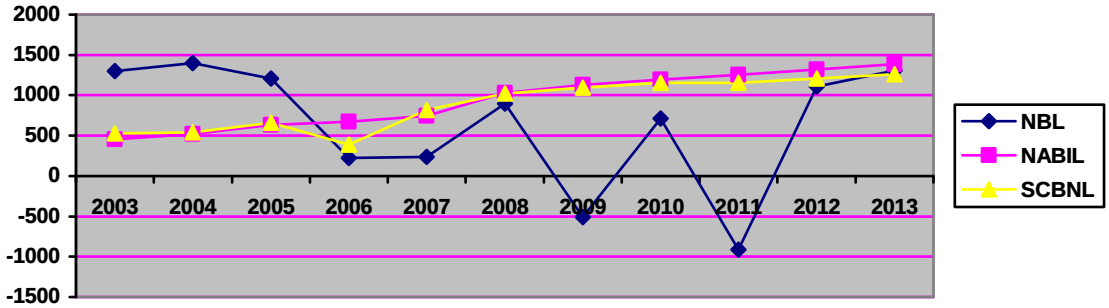
Mid July	NBL, a=877.66 b=-198.57	NABIL, a=676.33 B=64.45	SCBNL, a=711.33 b=55.09
2003	1302	455	537
2004	1398	518	539
2005	1207	635	658
2006	226	673	691
2007	239	746	818
2008	894	1031	1025
2009	-512.33	1127.48	1096.92
2010	-710.9	1191.93	1152.05
2011	-909.47	1256.38	1207.14
2012	-1108.04	1320.83	1262.23
2013	-1306.61	1385.28	1317.32

Table no.15 shows that among three banks except NBL, NABIL & SCBNL is in increasing trend of Net Profit. NBL's average NP is Rs877.66, which is decreasing every year at the rate of Rs.-198.57. Hence the expected NP of NBL is supposed to increase from Rs.894 million in 2008 to Rs -1306.61 million in 2013.

NABIL's average NP is Rs 676.33 million, which is increasing every year at the rate of Rs, 64.45 million. Hence the expected NP of NABIL is supposed to increase from Rs 686 million in 2007 to Rs.1046 million in 2012.

The average NP of SCBNL is Rs586.40, which is increasing every year at the rate of Rs 49.10 million. Accordingly NP os SCBNL is expected to increase from Rs.1127.48 million in 2008 to Rs 1385.28 million in 2013.

The above figures depicts that NABIL is ahead in generating net profit and its rate of increment of net profit is higher than that of SCBNL. But in the actual SCBNL is generating more profit than the NABIL. It is due to huge fluctuation in the profit of NABIL. However, among the three banks, NBL has the highest growth rate and to seems to be abnormal, it due to write back of Loan Loss Provision. Following Figure no. 7 represents the trend line of Net Profit of three banks for 11 consecutive years.



4.4 Analysis of Loan Classification & Loan Loss Provisioning Directives

Nepal Rashtra Bank, being central bank of Nepal issues and amends various directives regarding banking regulation from time to time on order to streamline the financial activities and rescue the banks from financial crisis. In 2001, NRB amended several old directives and issued many new circulars regarding banking regulation and operation. In this course, the directive regarding loan classification and provisioning was also changed. As per of provision, which remained in force for about 11 years, the loans were to be categorized into two groups, namely large loans and small loans. All the loans below Rs 100,000 were regarded as small loans and remained as large loans. The classification of large loans were to be made in six categories on the basis of some clearly defined and some not so clearly defined parameter while small loans were categorized on the basis period of past due. The directive was not clear where the borrower had wide fluctuation with respect to some financial indicators. In such case the borrower would qualify for different rating under each indicator. Due to these difficulties the new loan classification and provisioning rule came in effect from July 16, 2001. The table no.16 below presents the major changes brought by the new directives issued in 2001.

Table No.16
Comparative table of loan classification and provisioning

Area of Changes	Old Directive (Effective from March 22,1991 to July 15,2001)	New Directive (Effective From July 16, 2001 onwards)
Basis of	Classification to be made on the	Classification to be

classification.	basis of ageing of past dues for small loans and on the basis of certain financial ratios for large loans.	made on the basis of ageing of past dues for all loans.
Loan categorization & provisioning	Loans are to be classified into six categories with following present provision. **Loan category Provisioning** Good 1% Acceptable 1% Evidence of substandard 5% Substandard 25% Doubtful 50% Bad 100%	Loans are to be classified into four categories with following present provisioning. **Loan Category provision** Pass 1% Substandard 25% Doubtful 50% Loss 100%
Overdue period	**Loan category Overdue period** Good Not overdue Acceptable Up to 1 month Evidence of substandard 1-6 months Substandard 6 months to 1 Yr Doubtful 1 to 5 Year Bad more than 5 Year The period of overdue of each category of loan is longer.	**Loa category Overdue period** Pass not overdue upto 3Months Substandard 3-6months Doubtful 6-12months Loss more than 1 Yr. The period of overdue of each Category of loan is shorter.

Source: NRB Directives

Table no. 16 shows exhibits that the present's directives of loan classification and provisioning are tighter than the previous one. Hence this leads to increment on loans loss provision requirement. However, in the present context where Nepalese banking sector is severely affected by increasing non-performing loan, tightening loan loss provisioning requirements on loans and advances is essential to

safeguard the banks from banking and to ensure that the bank's remain liquid even during economic downturns.

Analysis of Classification of Loans and Provisioning as per New Directive.

As per the new directive, loans and advances are to be classified into four categories, namely Pass, Substandard, Doubtful and Loss with respective provisioning 1%, 25%, 50%, 100% on the basis of ageing of past dues. Besides this in case of insured priority and deprived sector loan, the provisioning requirement. Hence, the respective provisioning requirement for Pass, Substandard, and Doubtful & Loss Loan are 0.25%, 6.25%, 12.5%, and 25% of the outstanding loan. In case of rescheduled or restructured or swapped loan, if such loan falls under pass category, the minimum provisioning requirement is 12.5% and if this is the case of priority sector loan, 3.125% provisioning should be provided for probable loss. Further if the loan is granted only against personal guarantee, where the loan falls under the category of Pass, Substandard and Doubtful, in addition to the normal Loan Loss Provision applicable for the category, an additional 20% must be provided. Hence, in this case the provisioning required for Pass, Substandard and Doubtful is 21%, 45% and 70% respectively. Hence, it can be concluded that Loan Loss Provisioning required for different category of loan ranges as follow:

Loan category	Loan Loss Provision Ranges from
Pass	0.25% -21.00%
Substandard	6.25% -25.00%
Doubtful	12.5%- 50.00%
Loss	25.00%- 100.00%

In addition to overdue basis, loans and advances have to be classified as Loss on the basis of other factors like CIB blacklisting, collateral value, misuse of fund, bankruptcy of the borrower etc. The loan falling under Pass category is termed as Performing loan and the loan falling under remaining three categories is termed as Non-Performing Loan. The LLP set aside fro Performing Loan in defined as General Loan Loss Provision (GLLP) and LLP set aside for Non- performing Loan is defined as Specific Loan Loss Provision (SLLP). Besides this, if a bank provides any provision in excess of the proportion as required under the directives of NRB, the whole amount of such additional provision may be included in GLLP.

The new directive issued in 2001, regarding loan classification and provisioning was effective from fiscal year 2001/02. the data regarding loan classification and provisioning of three banks as per new directive, for mid July 2003 and mid July 2007 has been analyzed as follows.

Table No. 17
Loan Classification and Provisioning of NBL

	As on Mid July 2003				As on Mid July 2008			
Particular	Loan O/s	% of Total Loan	LLP	% of Total LLP	Loan O/s	% of Total Loan	LLP	% of Total LLP
Performing loan	7167	39.53	84	0.83	13688	86.91	416	17.75
Pass	7167	39.53	84	0.83	13688	86.91	416	17.75
Non-performing loan	10965	60.47	7852	77.27	2060	13.09	1927	82.25
Substandard(SS)	1291	7.12	298	2.93	63	0.41	57	2.43
Doubtful (DF)	2644	14.58	760	7.48	21	0.14	10	0.43
Loss	7030	38.77	6794	66.86	1976	12.54	1860	79.39
Additional Provisioning			2225	21.9				
Total	18132		10161	100	15748	100	2343	100

Source: NBL & NRB

Table No. 17 exhibits different categories of loans and advances and the provision provided to each category of loans of NBL for the fiscal year 2002/03 and 2008/09. In 2003, the total loan outstanding of NBL was Rs 18132 million out of which non-performing loan was Rs.10965. Out of total loan pass, SS DF & Loss loan comprises 39.53%, 7.12%, 14.58% &38.77% respectively. Hence it is clear that 39.53% of total loan is performing and remaining 60.47% is non-performing. Besides this in 2003, NBL has the highest degree of loss loans followed by DF loan and then SS loan in total NPL. Similarly out of total provision provided of Rs.10161 million, out of which, Pass, SS, DF & Loss loan comprises 0.83%, 2.93%, 7.48% & 66.86% respectively. Besides, this regular provision, additional of Rs.2225 comprising 21.90% was also provisioned by the bank. Hence out of total LLP, GLLP comprises 22.73% and SLLP comprises remaining 77.27%.

In 2008/09, the total loan outstanding of NBL has decreased to Rs 15748 million and its non-performing loan has decreased to Rs.2060 million. Out of total loan Pass, SS, DF & Loss loan comprises 17.75%, 2.43%, 0.43% & 79.397% respectively. In 2008, Pass loan have increased but also it is higher than the standard. The higher proportion of Loss account in the total asset quality of the bank is also an indicative of the very critical condition of the bank. Similarly the total LLP of the bank has decreased to Rs. 1947 million. Out of which, pass, SS, DF and Loss loan comprises 17.75%, 2.43%, 0.43% and 79.39% respectively. Hence out of total LLP, GLLP comprises 13.39% and SLLP comprises remaining

86.61%. Following pie charts or figures no. 8 and 9 represents the loan categorization of NBL for two fiscal years.

Table No.18
Loan classification and Provisioning of NABIL

	As on mid July 2003				As on mid July 2008			
Particular	Loan O/s	% of Total loan	LLP	% of Total	Loan O/s	% of Total loan	LLP	% of Total LLP
Performing loan	7664	94.45	123	34.36	15725	98.88	249	71.14
Pass	7664	94.45	123	34.36	15725	98.88	249	71.14
Non-Performing loan	450	5.55	235	65.65	178	1.12	101	28.86
Substandard (SS)	77	0.95	18	5.03	120	0.75	56	16.00
Doubtful (DF)	279	3.44	137	38.27	14	0.09	7	2.00
Loss	94	1.16	80	22.34	44	0.28	38	10.86
Total	8114	100	258	100	15903	100	350	100

(Source: Annual Report)

Table No. 18 shows different categories of loans and advances and the provision provided to each category of loans of NABIL for the fiscal year 2002/03 and 2007/08. In 2003, the total loan outstanding of NABIL was Rs. 8114 million. Out of the total loan, pass, substandard, doubtful and loss loan comprises 94.45%, 0.95%, 3.44% & 1.16% respectively. Hence it is clear that 94.45% of total loan is performing and remaining 5.55% is non-performing. Besides this in 2003, NABIL has the highest degree of DF loans followed by Loss loan and then SS loan in total NPL. Similarly, out of total provision provided of Rs.358 million, 34.36%

comprises for pass loan and the provision provided for SS, DF, & Loss loan comprises 5.03%, 38.27% & 22.34% respectively making provision for non-performing loan 65.65% of total LLP. Hence it can be understood tat the General LLP comprises 34.36% and Specific LLP comprises 65.65% of total LLP.

In 2008, the total loan outstanding of NABIL has increased to Rs. 15903 million. Out of total loan Pass, SS, DF and Loss loan comprises 98.88%, 0.75%, 0.09% & 0.28% respectively. In 2008, SS loan has increased but Pass, SS & Loss loan have decreased. Similarly, out of total LLP of Rs. 350 million, the respective % of Pass, SS, and DF & Loss loan is 71.14%, 16.00%, 2.00% and 10.86%. Hence out of total LLP, GLLP comprises 71.14% and SLLP comprises remaining 28.86%. The two years data shows that the proportion of all the categories of loans except Pass and SS loan has decreased. Accordingly provision amount has also increased in Pass and SS loan.

In 2003, NABIIL has the highest % of DF loan to total NPL but in 2008, it is SS loan. In 2003, NABIL has Rs. 450 million but in 2008, it is Rs 101 million which indicates the increasing asset quantity of the bank. Following pie charts or figure no. 10 & 11 represents the loan categorization of NABIL for two fiscal years.

Table No.19
Loan Classification and Provisioning of SCBNL

Rs. in Million

	As on mid July 2003				As on mid July 2007			
Particulars	Loan O/s	% of total loan	LLP	% of total LLP	Loan O/s	% of total Loan	LLP	% of Total LLP
Performing loan	5752	95.87	94	30.82	10593	98.17	106	36.81
Pass	5752	95.87	94	30.82	10593	98.17	106	36.81
NonPerforming loan	248	4.13	211	69.18	197	1.83	182	63.19
Substandard	7	0.12	2	0.66	16	0.15	4	1.39
Doubtful	130	2.16	98	32.13	66	0.61	63	21.88
Loss	111	1.85	111	36.39	115	1.07	115	39.93
Total	6000	100	305	100	10790	100	288	100

Source: Annual report

Table No. 19 exhibits different categories of loans and advances and the provision provided to each category of loans of SCBNL for the fiscal year 2002/03 and 2008/09. In 2003, the total loan outstanding of SCBNL was Rs.6000 million. Out

of the loan, pass, substandard, doubtful and loss loan comprises 95.87%, 0.12%, 2.16% & 1.85% respectively. Hence it is clear that 95.87% of total loan is performing and remaining 4.13% is non-performing. Besides this in 2003, SCBNL has the highest degree of DF loans followed by Loss loan and then SS loan in the total NPL. Similarly, out of total provision provided of Rs.305 million, 30.82% comprises for pass loan and the provision provided for SS, DF & Loss loan comprises 0.66%, 32.13%, & 36.39% respectively making provision for non-performing loan 69.18% of total LLP. Hence it can be understood that the General LLP comprises 30.82% and Specific LLP comprises 69.18% of total LLP.

In 2008, the total loan outstanding of SCBNL has increased to Rs. 10790 million. Out ot total loan Pass, SS, DF & Loss loan comprises 98.17%, 0.15%, 0.61% & 1.07% respectively. In 2007, the entire loan has increased except DF loan. Similarly outr of total LLP of Rs. 288 million, the respective % of Pass, SS and DF and loan loss is 36.81%, 1.39%, 21.88% and 39.93%. Hence out of total LLP, GLLP comprises remaining 63.19%. As non-performing loan has decreased accordingly provision amount has also decreased

Effect on Profitability

Latest loan loss provision norm have a great impact on profitability of the banks. As earlier mentioned, loan loss provision is deducted from the profit of the bank. Therefore the net profit of the bank will come down by the amount of provision. Hence increase in LLP means lesser net profit resulting to less earning per Share (EPS) , less dividend per share (DPS) or no dividend at all and finally lower Market Value Per Share(MVPS). If any banks make profit less than the amount of provision to be made, it may have to show losses in the balance sheet. For instance the LLP of NBL, NABIL & SCBNL as on mid July 2007 is Rs 2383 million, Rs. 350 million & 288 million respectively. Hence the net profit of NABIL & SCBNL is reduced by the respective provisioned amount.

However, the impact of Loan Loss Provision on Profitability of banks is short term. After few years, when banks have enough provision for loss loans & have sound credit management, the profitability will again pick up. Hence in long term basis banks will enjoy greater cushion against loan disbursed and improve their financial strength leading to increased profitability.

4.5 Analysis of Questionnaire

The questionnaire was distributed to the concerned department's employees of NABIL, NBL & SCBNL. The questionnaire was distributed to 20 individuals but there were only 18 respondents. After collecting the questionnaire they were tabulated in simple form. For each question the responses converted to percentage

based on the total number of respondents. From the percentage analysis of questionnaire following results were derived.

Que. No. 1

When asked about the importance of the directives related to loan classification and provisioning, 100% of the respondents agreed that the directives are very important.

Que. No.2

When asked about whether present directive regarding loan classification and provisioning is appropriate and better than the previous one, 94% of the respondent believe that it is better than the previous one while 6% believe previous one is – better.

Que. No.3

When asked about the impact of new directives on provision for loan loss of commercial bank, 100% of the respondents are of the view that newly issued directives regarding loan classification and provisioning will increase the provision for loan loss.

Que. No.4

When asked about the impact of new directives regarding loan classification & provisioning of on the credit exposure of the bank, 61% of the respondent are of the view that there will be no impact on credit exposure but 34% believe that the credit exposure of the bank will decrease.

Que.No.5

When asked about the effect of present loan classification & provisioning directive on the shareholders of the bank, 100% of the respondents think that they shareholders will enjoy lesser dividend and will have their EPS decreased however everyone believes that it is only for short term.

Que.No.6

In this question it was asked how the new directive would affect the three factors of the banks, Liquidity, Profitability & Profitability would decrease and Operational procedure would increase but remaining 6% were of the view that there would be no effect on all these three factors.

Que.No.7

This question was posed mainly to find out which alternative the banks are pondering to cope the problem brought about by the amendment in loan loss provisioning directive. 100% of the respondents said that, they would control credit disbursal by being more stringent and would strengthen the monitoring and follow-up procedures.

Que. No.8

When asked about to what extent today's banking industry is effected by problem of NPA, 80% of the respondents were of the view that it is severely affected while 11% were of the view that today's banking industry is moderately affected by the problem of NPA.

Que. No.9

When asked about the best measure to resolve the problem of NPL, everyone i.e 89% respondents were of the view that setting up a recovery cell is the best measure to confront the problem on NPL while 11% were of the view that hiring Asset Management Company is the best measure.

Que.No.10

When asked to rate the major factors leading to NPL, 94% of the respondent rated as below:

1. Improper Credit Appraisal System
2. Ineffective Credit Monitoring and Supervision
3. Economic Slowdown
4. Borrower's Misconduct
5. Political Pressure to lent to uncreditworthy borrowers

But 6% of the respondents rated as below:

1. Economic slowdown
2. Improper Credit Appraisal System
3. Borrower's Misconduct
4. Ineffective Credit Monitoring & Supervision
5. Political Pressure to lend to uncreditworthy borrowers

4.6 Major Finding

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

1.The average loans and advances to total asset ratio of NBL, NABIL and SCBNL during the study period is found to be 29.99%, 57.99% and 36.53% respectively. The relatively low ratio of SCBNL is the indication of risk adverse attitude of the management or they have the policy of investing low in the risky assets i.e loans and advances. They have higher proportion of their investment in risky free of nominally risky asset like treasury bills, National Saving Bonds etc. here this ratio is the highest of NABIL. NABIL shows the highest degree of deviation while SCBNL has the highest degree of variation through out the study. NBL is moderate in terms of the ration, its deviation and variability.

2.The core banking function is to mobilize the funds obtained from the depositors and how successfully this function have been discharged by the banks is measured by the ratio of loans and advances to total deposit ratio or simply CD ratio. The average CD ratio of NBL, NABIL and SCBNL during the study period is found to be 31.02%, 68.55% & 39.67% respectively. The average ratio of NABIL is highest followed by NBL and then SCBNL. NABIL has the most consistent and least deviated ratio during the study period whereas NBL has higher deviation and variability in this ration. SCBNL is moderate among the three banks in terms of deviation and variability of ratio.

3.The analysis of non-performing loans to total loans revealed that, average NPL of NBL, NABIL & SCBNL is 31.02 , 68.55 & 39.67 of total loan respectively. That means 68.98, 31.45 & 60.33 of total loan of NBL, NABIL & SCBNL is performing loan. Hence NBL has significantly higher proportion of the non-performing loan in the total loans portfolio but this ratio shows decreasing trend, due to hiring the new management team and giving priority to recovery. NABIL, in recent years has shown significant increment in NPL which is the results of banks effective credit management and its efforts of covering baddebts through establishment of Recovery Cell. During the study period this ratio is the least in NABIL. SCBNL is moderate in terms of CD ratio and it is in decreasing trend. SCBNL has the least deviation and NABIL has highest variation whereas NBL has highest deviation and is moderate in variation through out the study period.

4.The Loan Loss Provision ratio of NBL, NABIL & SCBNL is found 24.64, 2.46,&2.46 respectively where NBL has got higher than other. Since higher ratio is an indication of higher non-performing loan in the total loans and advances NBL's relatively higher ratio is the result of higher proportion of NPL in the total loan. SCBNL's and NABIL's average ration is found similar in this ratio which means both of the bank's asset quality is improving. NBL has the highest deviation by 7.95 than other with variation to by32.27% .

5.The average ratio of provision held to non-performing loan of NBL, NABIL & SCBNL was found to be135.07, 199.77 & 151.34 respectively. Hence NABIL has significantly higher ratio in comparison to other two banks, which portrays that the bank has adequate provision against non-performing loan but this ratio of NABIL is comparatively lower. SCBNL shows the highest deviation and variability in this ratio followed by NABIL and then NBL.

6.The main objective of commercial banks is to earn profit through mobilization of fund. The ratio of return on loans and advances ratio revealed that NBL seems to be failure to earn return on loans and advances. Eventhough NBL has higher investment in the most income –generating asset i.e loans and advances, it was in loss since last many years. The average return on loans and advances is 8.84(NBL). SCBNL with an average of 7.06% return on loans and advances has the highest ratio as it is ahead in generating net profit. NABIL is moderate with an average of 4.44% return on loans and advances. NBL has the highest variability followed by SCBNL and then NABIL.

7.The correlation coefficient between LLP and loans and advances of NBL, NABIL & SCBNL is -0.86, 0.29, 0.5557. Since NBL is showing highly negative relation rather than other NABIL and SCBNL. NABIL is in moderate condition where as SCBNL is expressing less relation .However higher provision has to be provided for non-performing loan, the positive correlation of NBL is the result of high non-performing loans in the total portfolio. But it is in decreasing trend due to the effect of giving priority to recover the bad loans.

a. In NBL there r is less than P.E therefore it represents no evidence of relation with insignificant.
b. In NABIL the r is 0.29 which represents low degree of correlation.
c. In SCBNL the r is 0.56 which shows the high degree of positive correlation. And
if r>6PE then it can be significant.

8.The correlation between LLP and NPL reveal that there is positive correlation between LLP and NPL in all the three banks but very few in NBL and NABIL and moderate condition in SCBNL Bank. As earlier mentioned higher provisions needs to be provided for NPL, higher the NPL higher would be the LLP. The correlation coefficient between these two variables in NBL is less significant than that of SCBNL

9.While analyzing correlation between loans and advances and deposit, it has been found that NBL, NABIL & SCBNL have of positive correlation between these two variables. The respective correlation coefficient of NBL, NABIL & SCBNL is

0.9075 & 0.9919 an d 0.9018, which is very significant and reliable. In recent years, NBL is concentrating on loan recovery and there was no further investment of the bank in the form of loans and advances but deposits are increasing.

10 . Trend analysis was based on the data of past six years and forecast was made for next five years. The trend of loans and advances showed decreasing trend in NBL and increasing trend in regards to NABIL and SCBNL but rate of increment of NABIL is higher than that of SCBNL. The loans and advances of NBL is increasing at rate of Rs.883.79 million every year and that of NABIL & SCBNL is increasing at the rate of Rs.2822.14 million and Rs. 960.54 million every year respectively.

11. From the trend analysis of NPL, it is found that NPL is decreasing in case of all the three banks. The NPL of NBL is increasing at the rate of Rs 360.28million every year and that of NABIL & SCBNL is increasing at the rate of Rs 17.68 million and 124.25 million every year respectively. The decreasing trend of NPL in NABIL and SCBNL is due to its efforts towards recovering baddebts. But in case fo NBL is due to its effort towards recovering baddebts and there was no further investment of the bank in the form of loans and advances.

12. From the trend analysis of LLP, it is found that LLP is expected to increase in coming years in case of all the three banks. The LLP of NBL, NABIL and SCBNL is increasing at the rate of Rs304.54, Rs.64.4510.17and26.2255.09 million every year respectively. The decreasing trend of LLP in NBL not in NABIL& SCBNL banks is due to their recovery efforts towards reducing NPL.

13. From the trend analysis of Net Profit, it is found that NP is expected to increase in coming years in all the three banks. NBL shows increment of net profit at the rate of Rs 198.57 million each year. Similarly, Net Profit of NABIL & SCBNL is increasing every year by Rs 64.45 million and Rs 55.09 million respectively. As NBL has high rate of increment, if this trend is to continue, NBL would soon surpass NABIL & SCBNL in providing net profit.

14. As per the latest directive, loans and advances are to be classified into four categories, namely Pass, Substandard, Doubtful & Loss with respective provisioning 1%, 25%, 50%, 100% on the basis of ageing of past dues. Besides this in case of insured priority and deprived sector loan, the provisioning requirement is one-fourth of that of normal loan loss provisioning requirement. Hence the respective provisioning requirement for pass, substandard, doubtful and loss loan are 0.25%, 6.25%, 12.5% and 25% of the outstanding loan. In case of rescheduled of restructured or swapped loan, if such loans falls under Pass, category, the minimum provisioning requirement is 12.5% and if this is the case of priority sector loan, 3.125% provisioning should be provided for probable loss.

Further if the loan is granted only against personal guarantee, the provisioning required for pass, substandard and doubtful is 21%, 45% and 70% respectively.

15. From the analysis of loan classification and provisioning of NBL it has been found that out of total loan pass, substandard, doubtful and loss loan comprises 39.53%, 7.12%, 14.58% &38.77% respectively in mid July 2003 & that of mid July 2008 is 13.3986.91% 0.41%, 0.14F% & 12.54%. NBL has he highest proportion of loss loans followed by Doubtful and then substandard loan out of NPL which is an indication of bad quality of assets of NBL. It has also provided additional provision of Rs 2225 million in 2003.

16. From the analysis of loan classification and provisioning of NABIL, it has been found that out ot total loan Pass, Substandard, Doubtful and Loss loan comprises 94.45%, 0.95%, 3.44% and 1.16% respectively in mid July 2003 & that of mid July 2008 is 98.88%, 0.75, 0.08% & 0.28%. NABIL has the highest proportion of Doubtful loan followed by Loss and then Substandard loan out of total NPL in 2003 but in 2008 there is higher proportion of Substandard loan and but its Doubtful and loss loan has decreased which is an indication of increasing good quality of asset of NABIL. And performing loan of NABIL has also increased.

17. From the analysis of loan classification and provisioning of SCBNL it has been found that out of total loan Pass, Substandard, Doubtful & Loss loan comprises 95.87%, 0.12%, 2.16% & 1.85% respectively in mid July 2003 & that of mid July 2008 is 98.17%, 0.15%, 0.61% & 1.07%. In the year 2003 SCBNL has the highest proportion of Doubtful loans followed by Loss and then substandard loan in total non-performing loan. But in the year 2008, all the loans (SS, DF & Loss) has decreased which is an indication of increasing good quality of asset of SCBNL.

18. Increasing non-performing loan is one of the burning problems of Nepalese banking sector. Improper credit appraisal system, ineffective credit monitoring & supervision system, economic, slowdown, borrower's misconduct, political pressure to lend to uncreditwotthy parties etc are the major factors leading to non-performing assets. Setting up recovery cell , hiring Asset Management Company etc are some to the measure to resolve the problem of NPA. Loan classification and loan loss provision also helps to confront the problems thus created due to non-performing loans. Since loan loss provision is deducted from the profit of the bank, increase in provision decrease the profit of the bank by the same amount but this type of negative effect is only for short period. Once the banks have adequate provision and sound credit management, the profitability will again gear up.

After the completion of analysis of data, the next chapter or the final chapter incorporates the summary, conclusions and recommendation regarding the subject matter.

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Appendix-I

Year	Ratio (X)	X^2
2003	28.53	813.96
2004	27.55	759.00
2005	27.16	737.67
2006	28.16	792.99
2007	31.51	992.88
2008	37.03	1,371.22
Total	179.94	5,467.72

$\bar{X}$

29.99

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{5467.72}{6} - (29.99)^2} = \sqrt{11.88} = 3.45$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{3.45}{29.99} \times 100\% = 11.49\%$$

NABIL Bank

Year	Ratio (x)	X2
2003	51.04	2,605.08
2004	61.59	3,793.33
2005	57.87	3,348.94
2006	57.03	3,252.42
2007	57.53	3,309.70
2008	62.89	3,955.15
Total	347.95	20,264.62

$\bar{X}$

57.99

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{2026462}{6} - (57.99)^2} = \sqrt{14.59} = 3.82$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{3.82}{57.99} \times 100\% = 6.58\%$$

SCBNL Bank

Year	Ratio (X)	X2
2003	35.77	1,279.49
2004	37.19	1,383.10
2005	34.66	1,201.32
2006	36.72	1,348.36
2007	41.15	1,693.32
2008	33.7	1,135.69
Total	219.19	8,041.28

$\bar{X}$

36.53

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{8041.28}{6} - (36.53)^2} = \sqrt{5.77} = 2.40$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{2.40}{36.53} \times 100\% = 6.58\%$$

Appendix-2 **NBL Bank**

Year	Ratio (X)	X^2
2003	30.34	920.52
2004	29.59	875.57
2005	27.22	740.93
2006	28.34	803.16
2007	31.68	1,003.62
2008	38.97	1,518.66
Total	186.14	5,862.45

$\bar{x}$

31.02

N=6

$$\text{Standard Deviation}(\pm) = \sqrt{\frac{\sum X^2}{n} - \left(\bar{X}\right)^2} = \sqrt{\frac{5862.45}{6} - (31.02)^2} = 3.82$$

$$\text{Coefficient of Variation}(C.V) = \frac{\pm}{\bar{x}} \times 100 = \frac{3.82}{31.02} \times 100 = 12.33\%$$

NABIL Bank

Year	Ratio (X)	X^2
2003	64.54	4,165.41
2004	72.58	5,267.86
2005	66.79	4,460.90
2006	66.59	4,434.23
2007	66.94	4,480.96
2008	73.87	5,456.78
Total	411.31	28,266.14

$\bar{x}$

68.55

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\bar{X}\right)^2} = \sqrt{\frac{28266.14}{6} - (68.55)^2} = \sqrt{11.92} = 3.45$$

$$= C.V = \frac{\pm}{\bar{X}} \times 100\% = \frac{3.45}{68.55} \times 100\% = 5.036\%$$

SCBNL Bank

Year	Ratio (X)	X^2
2003	30.29	917.48
2004	42.11	1,773.25
2005	38.74	1,500.79
2006	42.6	1,814.76
2007	46.12	2,127.05
2008	38.13	1,453.90
Total	237.99	9,587.24

$\bar{x}$	39.67	$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\bar{X}\right)^2} = \sqrt{\frac{28266.14}{6} - \left(68.55\right)^2} = \sqrt{11.92} = 3.45$ $C.V = \frac{\pm}{\bar{X}} \times 100\% = \frac{3.45}{68.55} = 5.04\%$

Appendix-3 **NBL Bank**

Year	Ratio (X)	X²
2003	29.43	866.12
2004	25.86	668.74
2005	23.19	537.78
2006	16.78	281.57
2007	14.72	216.68
2008	5.48	30.03
Total	115.46	2,600.92

$\bar{X}$

19.24

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{2600.92}{6} - \left(19.24\right)^2} = \sqrt{63.31} = 7.96$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{7.96}{19.24} = 41.35\%$$

NABIL Bank

Year	Ratio (X)	X²
2003	3.34	11.16
2004	1.36	1.85
2005	1.4	1.96
2006	1.14	1.30
2007	0.75	0.56
2008	0.81	0.66
Total	8.8	17.48

$\bar{X}$

1.47

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{17.48}{6} - \left(1.47\right)^2} = \sqrt{0.74} = 0.8602$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{0.8602}{1.47} = 58.51\%$$

SCBNL Bank

Year	Ratio (X)	X²
2003	3.93	15.44
2004	2.77	7.67
2005	2.18	4.75
2006	1.87	3.50
2007	0.93	0.86
2008	0.66	0.44

Total	12.34	32.67

$\bar{x}$ 2.06

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\bar{X}\right)^2} = \sqrt{\frac{32.67}{6} - \left(2.06\right)^2} = \sqrt{1.20} = 1.09$$

$$= C.V = \frac{\pm}{\bar{X}} \times 100\% = \frac{1.09}{2.06} = 53.17\%$$

N=6

APPENDIX-4 **NBL**

Year	Ratio (x)	X²
2003	35.55	
2004	30.41	924.77
2005	27.52	757.35
2006	24.39	594.87
2007	18.96	359.48
2008	11.04	121.88
Total	147.87	4,022.16

$\bar{x}$ 24.645

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\bar{X}\right)^2} = \sqrt{\frac{4022.16}{6} - (24.64)^2} = \sqrt{63.24} = 7.95$$

$$= C.V = \frac{\pm}{\bar{X}} \times 100\% = \frac{7.95}{24.64} \times 100\% = 32.27\%$$

NABIL Bank NABIL Bank

Year	Ratio (x)	X²
2003	3.01	9.06
2004	3.4	11.56
2005	2.75	7.56
2006	2.29	5.24
2007	1.84	3.39
2008	1.48	2.19
Total	14.77	39.00

$\bar{x}$ 2.46

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\bar{X}\right)^2} = \sqrt{\frac{39}{6} - (2.46)^2} = \sqrt{0.44} = 0.66$$

$$= C.V = \frac{\pm}{\bar{X}} \times 100\% = \frac{0.66}{2.46} \times 100\% = 26.96\%$$

SCBNL Bank

Year	Ratio (x)	X²
2003	3	9.00
2004	2.78	7.73
2005	3.02	9.12
2006	2.73	7.45
2007	1.78	3.17
2008	1.46	2.13
Total	14.77	38.60

$\bar{x}$ 2.46

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{38.6}{6} - (2.46)^2} = \sqrt{0.38} = 0.62$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{0.62}{2.46} \times 100\% = 25.05\%$$

Appendix 3 NBL Bank

Year	Ratio (x)	X²
2003	107.58	11,573.46
2004	108.66	11,807.00
2005	118.7	14,089.69
2006	145.36	21,129.53
2007	128.8	16,589.44
2008	201.34	40,537.80
Total	810.44	115,726.91

$\overline{x}$

135.07

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{19287.82}{6} - (135.07)^2} = \sqrt{1043.92} = 32.31$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{32.31}{135.07} \times 100\% = 23.92\%$$

NABIL Bank

Year	Ratio (x)	X²
2003	125.17	15,667.53
2004	250	62,500.00
2005	195.6	38,259.36
2006	200.56	40,224.31
2007	244.72	59,887.88
2008	182.58	33,335.46
Total	1198.63	249,874.54

$\overline{x}$

199.77

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{39}{6} - (2.46)^2} = \sqrt{0.44} = 0.66$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{0.66}{2.46} \times 100\% = 26.96\%$$

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{24987454}{6} - (199.77)^2} = \sqrt{41.68} = 6.45$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{6.45}{199.77} \times 100\% = 3.23\%$$

SCBNL Bank

Year	Ratio (x)	X²
2003	112.3	12,611.29
2004	100.44	10,088.19
2005	138.46	19,171.17
2006	145.68	21,222.66
2007	191.4	36,633.96
2008	219.78	48,303.25
Total	908.06	148,030.53

$\bar{x}$

151.34

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{148030.53}{6} - (151.34)^2} = \sqrt{1767.96} = 42.05$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\%$$

Appe

Year	Ratio (x)	X²
2003	16.06	
2004	15.69	
2005	12.37	153.02
2006	2.04	4.16
2007	1.8	3.24
2008	5.07	25.70
Total	53.03	690.22

$\bar{x}$

8.84

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{302.84}{6} - (7.06)^2} = \sqrt{0.63} = 0.79$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{0.79}{7.06} \times 100\% = 11.27\%$$

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{690.22}{6} - (8.84)^2} = \sqrt{36.89} = 6.07$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{3.07}{8.84} \times 100\% = 68.71\%$$

NABIL Bank

Year	Ratio (x)	X²
2003	5.32	28.30
2004	4.89	23.91
2005	4.91	24.11
2006	4.32	18.66
2007	3.49	12.18
2008	3.73	13.91
Total	26.66	121.08

$\bar{x}$

4.44

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\overline{X}\right)^2} = \sqrt{\frac{121.08}{6} - (4.44)^2} = \sqrt{0.47} = 0.6856$$

$$= C.V = \frac{\pm}{\overline{X}} \times 100\% = \frac{0.6856}{4.44} \times 100\% = 15.44\%$$

SCBNL Bank

Year	Ratio (x)	X²
2003	8.37	70.06
2004	6.62	43.82
2005	7.36	54.17
2006	6.57	43.16
2007	5.96	35.52
2008	7.49	56.10
Total	42.37	302.84

$\bar{x}$

7.06

N=6

$$\pm = \sqrt{\frac{\sum X^2}{n} - \left(\bar{X}\right)^2} = \sqrt{\frac{302.84}{6} - (7.06)^2} = \sqrt{0.63} = 0.79$$

$$= C.V = \frac{\pm}{\bar{X}} \times 100\% = \frac{0.79}{7.06} \times 100\% = 11.27\%$$

NBL Bank Appen

Year	X(LLP)	Y(Loar					x1*y1
2003	2583					11176786	-265782.02
2004	2597	8910	93.50	(2,539.17)	8742.25	6447384.3	-237412.4
2005	2685	9756	181.50	(1,693.17)	32942.25	2866824.6	-307310.36
2006	2698	11058	194.50	(391.17)	37830.25	153013.97	-76082.565
2007	2513	13251	9.50	1,801.83	90.25	3246591.3	17117.385
2008	1945	17614	(558.50)	6,164.83	311922.25	38005129	-3443057.6
Total	15021	68695			397847.5	61895729	-4312527.5
$\bar{x}$	2503.5	11,449.17					

$$r = \frac{\sum x1 \cdot y1}{\sqrt{\sum x1^2}\sqrt{\sum y1^2}} = \frac{-4312528}{\sqrt{397847.5}\sqrt{61895729}} = -0.86$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(-0.86)^2}{6} = 0.6745 \times \frac{1-0.7552}{2.45} = 0.5745$$

NABIL Bank

Year	X(LLP)	Y(Loan/Adv.)	$x - \bar{x} = x1$ x=X-	$y - \bar{y} = y2$	$x1^2$	$y1^2$	x1*y1
2003	358	8548.66	-14.33	-7543.95	205.3489	56911182	108104.8
2004	360	10586	-12.33	-5506.61	152.0289	30322754	67896.501
2005	356	12922	-16.33	-3170.61	266.6689	10052768	51776.061
2006	357	15545	-15.33	-547.61	235.0089	299876.71	8394.8613
2007	394	21365	21.67	5272.39	469.5889	27798096	114252.69
2008	409	27589	36.67	11496.39	1344.6889	132166983	421572.62
Total	2234	96555.66			2673.3334	257551659	771997.54
$\bar{x}$	372.33	16092.61					

$$r = \frac{\sum x1 \cdot y1}{\sqrt{\sum x1^2}\sqrt{\sum y1^2}} = \frac{771997.54}{\sqrt{2673.33}\sqrt{257551659}} = 0.29$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(0.29)^2}{6} = 0.6745 \times \frac{1-0.088}{2.45} = 0.25$$

SCBNL

Year	X(LLP)	Y(Loan/Adv.)	$x - \bar{x} = x1$ x=X-	$y - \bar{y} = y2$	$x1^2$	$y1^2$	x1*y1
2003	283	6410	31	-3821.17	961	14601340	-118456.27
2004	227	8143	-25	-2088.17	625	4360453.9	52204.25
2005	270	8935	18	-1296.17	324	1680056.7	-23331.06
2006	287	10502	35	270.83	1225	73348.889	9479.05
2007	245	13718	-7	3486.83	49	12157983	-24407.81
2008	200	13679	-52	3447.83	2704	11887532	-179287.16
Total	1512	61387			5888	44760715	-283799
$\bar{x}$	252	10,231.17					

$$r = \frac{\sum x1 \cdot y1}{\sqrt{\sum x1^2}\sqrt{\sum y1^2}} = \frac{-283799}{\sqrt{5888}\sqrt{44760715}} = 0.5557$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(0.5557)^2}{6} = 0.6745 \times \frac{1-0.3088}{2.45} = 0.3088$$

NB

Ye			$x - \bar{x} = x1$	$y - \bar{y} = y2$	$x1^2$	$y1^2$	x1*y1
					20.25	184900	34185
					42.25	175561	39176.5
2005	2685	2262	181.5	291	32942.25	84681	52816.5
2006	2698	1856	194.5	-115	37830.25	13225	-22367.5
2007	2513	1951	9.5	-20	90.25	400	-190
2008	1945	966	-558.5	-1005	311922.25	1010025	561292.5
Total	15021	11826			397847.5	1468792	664913
$\bar{x}$	2503.5	1971					

$$r = \frac{\sum x_1 y_1 - \sum x_1 \cdot \sum y_1}{\sqrt{\sum x_1^2}\sqrt{\sum y_1^2}} = \frac{644913}{\sqrt{397847.5}.\sqrt{1468792}} = 0.00005$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(0.00005)^2}{\sqrt{6}} = 0.6745 \times \frac{1}{2.45} = 0.2751$$

NABIL Bank

Year	X (LLP)	Y (NPL)	$x - \bar{x} = x1$ x=X-	$y - \bar{y} = y2$	$x1^2$	$y1^2$	x1*y1
2003	358	286	-14.33	90.17	205.35	8,130.63	(1,292.14)
2004	360	144	-12.33	-51.83	152.03	2,686.35	639.06
2005	356	182	-16.33	-13.83	266.67	191.27	225.84
2006	357	178	-15.33	-17.83	235.01	317.91	273.33
2007	394	161	21.67	-34.83	469.59	1,213.13	(754.77)
2008	409	224	36.67	28.17	1,344.69	793.55	1,032.99
Total	2234	1175			2,673.33	13,332.83	124.33
$\bar{x}$	372.33	195.83					

$$r = \frac{\sum x_1 y_1 - \sum x_1 \cdot \sum y_1}{\sqrt{\sum x_1^2}\sqrt{\sum y_1^2}} = \frac{124.33}{\sqrt{2673.33}.\sqrt{1333283}} = 0.02$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(0.0002)^2}{\sqrt{6}} = 0.6745 \times \frac{0.9995}{2.45} = 0.2751$$

SCBNL

Year	X (LLP)	Y (NPL)	$x - \bar{x} = x1$ x=X-	$y - \bar{y} = y2$	$x1^2$	$y1^2$	x1*y1
2003	283	252	31	70.5	961	4970.25	2185.5
2004	227	226	-25	44.5	625	1980.25	-1112.5
2005	270	195	18	13.5	324	182.25	243
2006	287	197	35	15.5	1225	240.25	542.5
2007	245	128	-7	-53.5	49	2862.25	374.5
2008	200	91	-52	-90.5	2704	8190.25	4706
Total	1512	1089			5888	18425.5	6939
$\bar{x}$	252	181.5					

$$r = \frac{\sum x_1 y_1 - \sum x_1 \cdot \sum y_1}{\sqrt{\sum x_1^2}\sqrt{\sum y_1^2}} = \frac{6939}{\sqrt{5888}.\sqrt{18425.5}} = 0.67$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(0.\ldots)}{\sqrt{6}} = 0.6745 \times \frac{0.3362}{2.45} = 0.153$$

NB

Ye			$x - \bar{x} = x1$	$y - \bar{y} = y2$	$x1^2$	$y1^2$	x1*y1
					11176785.65	94818906	32554118
2004	8910	30109	-2539.17	-6338.5	6447384.289	40176582	16094529
2005	9756	35829	-1693.17	-618.5	2866824.649	382542.25	1047225.6
2006	11058	39014	-391.17	2566.5	153013.9689	6586922.3	-1003937.8
2007	13251	41829	1801.83	5381.5	3246591.349	28960542	9696548.1
2008	17614	45194	6164.83	8746.5	38005128.93	76501262	53920686
Total	68695	218685			61895728.83	247426758	112309169
$\bar{x}$	11449.167	36447.5					

$$r = \frac{\sum x_1 y_1 - \sum x_1 \cdot \sum y_1}{\sqrt{\sum x_1^2}\sqrt{\sum y_1^2}} = \frac{112309169}{\sqrt{61895729}\sqrt{247426758}} = 0.9075$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(0.9075)^2}{\sqrt{6}} = 0.6745 \times \frac{0.1764}{2.45} = 0.048$$

NABIL Bank

Year	X (Loan/Adv)	Y (Deposit)	$x - \bar{x} = x1$ x=X-	$y - \bar{y} = y2$	$x1^2$	$y1^2$	x1*y1
2003	8548.66	14119	-7543.95	-9323.83	56911181.6	86933806	70338507
2004	10586	14586	-5506.61	-8856.83	30322753.69	78443438	48771109
2005	12922	19347	-3170.61	-4095.83	10052767.77	16775823	12986280
2006	15545	23342	-547.61	-100.83	299876.7121	10166.689	55215.516
2007	21365	31915	5272.39	8472.17	27798096.31	71777665	44668584

2008	27589	37348	11496.39	13905.17	132166983	193353753	159859257
Total	96555.66	140657			257551659.1	447294651	336678953
$\bar{x}$	16092.61	23,442.83					

$$r = \frac{\sum x_1 y_1 - \sum x_1 \cdot \sum y_1}{\sqrt{\sum x_1^2}\sqrt{\sum y_1^2}} = \frac{336678953}{\sqrt{257551659}\sqrt{447294651}} = 0.9919$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(0.9919)^2}{\sqrt{6}} = 0.6745 \times \frac{0.016}{2.45} = 0.0044$$

SCBNL			$x - \bar{x} = x1$	$y - \bar{y} = y2$	$x1^2$	$y1^2$	
Year	X (Loan/Adv)	Y (Deposit)	x=X-				x1*y1
2003	6410	21161	-3821.17	-4475.33	14601340.17	20028579	17100997
2004	8143	19335	-2088.17	-6301.33	4360453.949	39706760	13158248
2005	8935	23061	-1296.17	-2575.33	1680056.669	6632324.6	3338065.5
2006	10502	24647	270.83	-989.33	73348.8889	978773.85	-267940.24
2007	13718	29743	3486.83	4106.67	12157983.45	16864738	14319260
2008	13679	35871	3447.83	10234.67	11887531.71	104748470	35287402
Total	61387	153818			44760714.83	188959645	82936033
$\bar{x}$	10,231.17	25,636.33					

$$r = \frac{\sum x_1 y_1 - \sum x_1 \cdot \sum y_1}{\sqrt{\sum x_1^2}\sqrt{\sum y_1^2}} = \frac{82936033}{\sqrt{44760715}\sqrt{188959645}} = 0.9018$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(0.9018)^2}{\sqrt{6}} = 0.6745 \times \frac{0.1868}{2.45} = 0.0514$$

YE						
					-40530	
					-26730	
			1	1	-9756	
2006	4	11058	1	1	11058	
2007	5	13251	3	9	39753	
2008	6	17614	5	25	88070	
	∑X=21	∑y=68695	∑X=◦	∑x²=70	∑x*y=61865	
here year is supposed by 1,2 …..6respectively.		1, 2,3 4,5 6 respectively.				

Let the trend line be $y = a + bx$

Where $x = 2$(X - A.M of two middle Year).

Since, $\sum x = 0$, $a = \frac{\sum y}{n} = \frac{68695}{6} = 11449.17$ & $b = \frac{\sum xy}{\sum x^2} = \frac{61865}{70} 883.79$

Substituti ng these values of a and b in (1), we get reqd. fitted trend line as

$Y_c = 11449.17 + 883.79x$

For 2009, i.e 7th year

Estimated Loan & Advance for 7th year $= 11449.17 + 883.79 * 7 = 17635.67$

Estimated ....8th year $= 11449.17 + 883.79 * 8 = 18519.49$

Estimated. ....9th year $= 11449.17 + 883.79 * 9 = 19403.28$

Estimated. .... .10thyear $= 11449.17 + 883.79 * 10 = 20287.07$

NABIL Bank Ltd.

YEAR	Year (X)	loan/adv.(y)	x=X(3+4)/2	x^2	x*y
2003	1	8548	-2.5	6.25	-21370
2004	2	10586	-1.5	2.25	-15879
2005	3	12922	-0.5	0.25	-6461
2006	4	15545	-0.5	0.25	-7772.5
2007	5	21265	1.5	2.25	31897.5
2008	6	27589	2.5	6.25	68972.5
	∑X=21	∑y=96455	∑x=0	17.5	49387.5

Here YEAR is supposed year 1, 2, 3, 4, 5, 6 respectively.

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=96455/6=16075.83 and b=∑xy/∑x²=49387.5/17.5=2822.14

Substituting these values of a and b in (1), we get required fitted line as

Y=16075.83+2822.14X

For 7th year i.e 2009

When x=7, then expected loan&advance of 7th year=16075.83+2822.14*7=19754.98

Similarly,

When x=8, then expected loan&adv. of 8th year=16075.83+2822.14*8=38652.95

When x=9, then expected loan&adv. of 9th year=16075.83+2822.14*9=41475.09

When x=10, then expected loan&adv. of 10th year=16075.83+2822.14*10=44296.93

When x=11, then expected loan&adv. of 11th year=16075.83+2822.14*11=47119.37

SCBNL Bank Ltd.

YEAR	Year (X)	loan/adv.(y)	x=X(3+4)/2	x^2	x*y
2003	1	6410	-2.5	6.25	-16025
2004	2	8143	-1.5	2.25	-12214.5
2005	3	8935	-0.5	0.25	-4467.5
2006	4	10502	-0.5	0.25	-5251
2007	5	13718	1.5	2.25	20577
2008	6	13679	2.5	6.25	34197.5
	∑X=21	∑y=61387	∑x=0	17.5	16816.5

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=61387/6=10231.16 and b=∑xy/∑x²=16816.5/17.5=960.94

Substituting these values of a and b in (1), we get required fitted line as

Y=10231.16+960.94X

For 7th year i.e 2009

When x=7, then expected loan&advance of 7th year=10231.16+960.94X=16957.74

Similarly,

When x=8, then expected loan&adv. of 8th year=10231.16+960.94X=17918.68

When x=9, then expected loan&adv. of 9th year =10231.16+960.94X=18879.62

When x=10, then expected loan&adv. of 10th year =10231.16+960X =19840.56

When x=11, then expected loan&adv. of 11th year=10231.16+960.94X=20801.50

NBL Bank ank Appendix-11

YEAR	Year (X)	NPL(y)	x=X(3+4)/2	x²	x*y
2003	1	2401	-2.5	6.25	-6002.5
2004	2	2390	-1.5	2.25	-3585
2005	3	2262	-0.5	0.25	-1131
2006	4	1856	-0.5	0.25	-928
2007	5	1951	1.5	2.25	2926.5
2008	6	966	2.5	6.25	2415
	∑X=21	∑y=11826	∑x=0	∑x²=17.5	∑xy=-6305

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=11826/6=1971and b=∑xy/∑x²=-6305/17.5=360.28

Substituting these values of a and b in (1), we get required fitted line as

Y=1971+360.28X

For 7th year i.e 2009

When x=7, then NPL of 7th year= Y=1971-360.28*7= -550

Similarly,

When x=8, then NPL of 8th year=1971-360.28*8= -911.24

When x=9, then NPLof 9th year =1971-360.28*9= -1271.52

When x=10, then NPL of 10th year =1971-360.28*10= -1631.8

When x=11, then NPL of 11th year=1971-360.28*11= -1992.08

NABIL Bank				

YEAR	Year (X)	NPL(y)	x=X(3+4)/2	x^2	x*y
2003	1	286	-2.5	6.25	-715
2004	2	144	-1.5	2.25	-216
2005	3	182	-0.5	0.25	-91
2006	4	178	-0.5	0.25	-89
2007	5	161	1.5	2.25	241.5
2008	6	224	2.5	6.25	560
	∑X=21	∑X=1175	∑x=0	$\sum x^2$=17.5	∑xy=-309.5

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=1175/6=195.33and b=∑xy/$\sum x^2$=-309.5/17.5=17.68 09.5/17.5=17.68

Substituting these values of a and b in (1), we get required fitted line as

Y=195.33-17.68X

For 7th year i.e 2009

When x=7, then NPL of 7th year= 195.33-17.68*7=71.57

Similarly,

When x=8, then NPL of 8th year= 195.33-17.68*8 =53.89

When x=9, then NPLof 9th year = 195.33-17.68*9 =36.21

When x=10, then NPL of 10th year = 195.33-17.68*10 =18.53

When x=11, then NPL of 11th year= 195.33-17.68*11 =0.85

SCBNL Bank					
YEAR	Year (X)	NPL(y)	x=X(3+4)/2	x^2	x*y
2003	1	252	-2.5	6.25	-630
2004	2	226	-1.5	2.25	-339
2005	3	195	-0.5	0.25	-97.5
2006	4	197	-0.5	0.25	-98.5
2007	5	128	1.5	2.25	192
2008	6	91	2.5	6.25	227.5
	∑X=21	∑X=1089	∑x=0	$\sum x^2$=17.5	∑xy=-745.5

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=1089/6=181.5 and b=∑xy/$\sum x^2$=-745.5/17.5=124.25 45.5/17.5=-124.25

Substituting these values of a and b in (1), we get required fitted line as

Y=181.5-124.25X

For 7th year i.e 2009

When x=7, then NPL of 7th year= 181.5-124.25*7=219.25

Similarly,

When x=8, then NPL of 8th year= 181.5-124.25*8= 95

When x=9, then NPLof 9th year = 181.5-124.25*9= (29.25)

When x=10, then NPL of 10th yr = 181.5-124.25*10=(153.35)

When x=11, then NPL of 11th yr= 181.5-124.25*11=(277.75)

NBL Bank		Appendix-12			
YEAR	Year (X)	LLP(y)	x=X(3+4)/2	x^2	x*y
2003	1	2882	-2.5	6.25	-7205
2004	2	2710	-1.5	2.25	-4065
2005	3	2685	-0.5	0.25	-1342.5
2006	4	2698	-0.5	0.25	-1349
2007	5	2513	1.5	2.25	3769.5
2008	6	1945	2.5	6.25	4862.5
	∑X=21	∑X=15433	∑x=0	$\sum x^2$=17.5	∑xy=(5329.5)

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=115433/6=2572.16and b=$\sum xy/\sum x^2$=-5329.5/17.5=-304.54

Substituting these values of a and b in (1), we get required fitted line as

Y=2572.16-304.54*X

For 7th year i.e 2009

When x=7, then NPL of 7th year= 2572.16-304.54*7=440.38

Similarly,

When x=8, then LLP of 8th year= 2572.16-304.54*8=135.84

When x=9, then LLPof 9th year =2572.16-304.54*9= (168.70)

When x=10, then LLP of 10th yr = 2572.16-304.54*10= (472.84)

When x=11, then LLP of 11th yr= 2572.16-304.54*11=(777.78)

NABIL Bank Ltd.					
YEAR	Year (X)	LLP(y)	x=X(3+4)/2	x^2	x*y
2003	1	358	-2.5	6.25	-895
2004	2	360	-1.5	2.25	-540
2005	3	356	-0.5	0.25	-178
2006	4	357	-0.5	0.25	-178.5
2007	5	394	1.5	2.25	591
2008	6	409	2.5	6.25	1022.5
	∑X=21	∑y=2234	∑x=0	$\sum x^2$=17.5	∑xy=(178)

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=2234/6=272.33and b=$\sum xy/\sum x^2$=-178/17.5=-10.17

Substituting these values of a and b in (1), we get required fitted line as

Y=272.33-10.17*X

For 7th year i.e 2009

When x=7, then NPL of 7th year= Y=272.33-10.17*7= 201.13

Similarly,

When x=8, then LLP of 8th year= 272.33-10.17*8=190.97

When x=9, then LLPof 9th year =272.33-10.17*9=180.80

When x=10, then LLP of 10th yr = 272.33-10.17*10=170.63

When x=11, then LLP of 11th yr= 272.33-10.17*11=160.46

SCBNL Bank Ltd.					
YEAR	Year (X)	LLP(y)	x=X(3+4)/2	x^2	x*y
2003	1	283	-2.5	6.25	-707.5
2004	2	227	-1.5	2.25	-340.5
2005	3	270	-0.5	0.25	-135
2006	4	287	-0.5	0.25	-143.5
2007	5	245	1.5	2.25	367.5
2008	6	200	2.5	6.25	500
	∑X=21	∑y=1512	∑x=0	$\sum x^2$=17.5	∑xy=(459)

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=1512/6=252and b=$\sum xy/\sum x^2$=-459/17.5=-26.22

Substituting these values of a and b in (1), we get required fitted line as

Y=252-26.22*X

For 7th year i.e 2009

When x=7, then NPL of 7th year= 25-26.22*7= 68.40

Similarly,

When x=8, then LLP of 8th year= 252-26.22*8=42.24

When x=9, then LLPof 9th year =252-26.22*9=16.02

When x=10, then LLP of 10th yr = 252-26.22*10= (10.2)

When x=11, then LLP of 11th yr= 252-26.22*11= (36.42)

NBL Bank Ltd.		Appendix-13			
YEAR	Year (X)	Net profit (y)	x=X(3+4)/2	x^2	x*y
2003	1	1302	-2.5	6.25	-3255
2004	2	1398	-1.5	2.25	-2097
2005	3	1207	-0.5	0.25	-603.5
2006	4	226	-0.5	0.25	-113
2007	5	239	1.5	2.25	358.5
2008	6	894	2.5	6.25	2235
	∑X=21	∑y=5266	∑x=0	$\sum x^2$=17.5	∑xy=-3475

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=5266/6=877.66and b=∑xy/$\sum x^2$=-3475/17.5=-198.57

Substituting these values of a and b in (1), we get required fitted line as

Y=877.66-198.57*X

For 7^{th} year i.e 2009

When x=7, then Net Profit of 7^{th} year= 877.66-198.57*7= -512.33

Similarly,

When x=8, then Net Profit of 8^{th} year= 877.66-198.57*8=-710.9

When x=9, then Net Profit of 9^{th} year =877.66-198.57*9=-909.47

When x=10, then Net Profit of 10^{th} yr = 877.66-198.57*10= -1108.04

When x=11, then Net Profit of 11^{th} yr= 877.66-198.57*11=-1306.61

NABIL Bank Ltd.					
YEAR	Year (X)	Net profit (y)	x=X(3+4)/2	x^2	x*y
2003	1	455	-2.5	6.25	-1137.5
2004	2	518	-1.5	2.25	-777
2005	3	635	-0.5	0.25	-317.5
2006	4	673	-0.5	0.25	-336.5
2007	5	746	1.5	2.25	1119
2008	6	1031	2.5	6.25	2577.5
	∑X=21	∑y=4058	∑x=0	$\sum x^2$=17.5	∑xy=1128

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=4058/6=676.33and b=∑xy/$\sum x^2$=1128/17.5=64.45

Substituting these values of a and b in (1), we get required fitted line as

Y=676.33+64.45*X

For 7th year i.e 2009

When x=7, then Net Profit of 7th year= 676.33-64.45*7= 225.18 676.33+64.45*7= 7=1127.48

Similarly,

When x=8, then Net Profit of 8th year= 676.33+64.45=1191.93

When x=9, then Net Profit of 9th year =676.33+64.45=1256.38

When x=10, then Net Profit of 10th yr = 676.33+64.45=1320.83

When x=11, then Net Profit of 11th yr= 676.33+64.45= 1385.28

SCBNL Bank Ltd.					
YEAR	Year (X)	Net profit (y)	x=X(3+4)/2	x^2	x*y
2003	1	537	-2.5	6.25	-1342.5
2004	2	539	-1.5	2.25	-808.5
2005	3	658	-0.5	0.25	-329
2006	4	691	-0.5	0.25	-345.5
2007	5	818	1.5	2.25	1227
2008	6	1025	2.5	6.25	2562.5
	∑X=21	∑y=4268	∑x=0	$\sum x^2=17.5$	∑xy=964

Let the trend line be y=a+bx

Since,∑x=0, a=∑y/n=4268/6=711.33and b=∑xy/$\sum x^2$=964/17.5=55.09

Substituting these values of a and b in (1), we get required fitted line as

Y=711.33+55.09*X

For 7th year i.e 2009

When x=7, then Net Profit of 7th year= 711.33+55.09*7=1096.92

Similarly,

When x=8, then Net Profit of 8th year= 711.33+55.09=1152.05

When x=9, then Net Profit of 9th year =711.33+55.09=1207.14

When x=10, then Net Profit of 10th yr = 711.33+55.09=1262.23

When x=11, then Net Profit of 11th yr= 711.33+55.09=1317.32