

# CHAPTER – I

## INTRODUCTION

### 1.1 Background of the Study

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

Banks are major institutions in financing. Bank involves in a process of collecting scattered money and to help its mobilization in different sectors according to the need of customers. Bank helps to develop saving habit of people, which in turns help to make other people to invest for their business. Banking loan helps to invest in industrial sector, commercial sector, production sector, trade & commerce. Bank also helps to develop international business by initiating as a mediator on export & import. This way banks help to strengthen the national.

Banking is one of the most heavily regulated businesses in the world. Banks are among the most important financial institutions in the economy. They are the principal source of credit (loan-able funds) for millions of individuals and families and for many units of government. Moreover, bank often act as a major source of credit to small local business ranging from grocery stores to automobile dealers for their stock. Banks are among the most important sources of short term working capital for business and have become increasingly active in recent years in making long-term business loans for new plant and equipment.

Lending is the most important function of a commercial bank. For lending procedure, bank has to make some banking practices such as transferring

property in bank's name. The transfer is temporarily made for a loan price & interest. Lending money is nowadays becoming main resources of revenue to the bank and also involves high risk too. Bank will not provide loan unless it has sufficient sources to the borrower that will be needed in case of future recovery.

Going through loan granting provision, bank will through safety of funds, purpose of loans, security for loans, profitability spread of loan portfolio etc. besides this, the character of person receiving credit, the capacity of borrower to utilize the fund, the percentage of borrower stake in the business are the basic elements which measures the quality of borrower and ultimately the quantity of the loan.

The credit policy of a firm provides the framework to determine whether or not to extend credit and how much credit to extend. The credit policy decision of a bank has two broad dimensions; credit standards and credit analysis. A firm has to establish and use standards in making credit decision, develop appropriate sources of credit and methods of credit analysis.

In this way bank plays an important part in the development of trade, commerce and industry. Today no bankers can survive for long run without proper standing of economy and economy cannot pace ahead without proper credit management.

### **1.1.1 Profile of the Selected Banks**

#### **a) Standard Chartered Bank Nepal Limited**

Standard Chartered Bank Nepal Limited, formally known as Nepal Grindlays Bank Limited has been in operation since 1987. It is one of the topmost joint venture banks of Nepal. Capital structure of this bank is; 50 percent by Chartered Grindlays Bank, 33 percent by Nepal Bank Limited, the country's oldest and largest financial institutions and 17 percent by the

Nepalese public. On July 31, 2000, Standard Chartered Bank Nepal Limited conducted the acquisition with ANZ Grindlays Bank Limited of the Australia and New Zealand Banking Group. With this acquisition, 50 percent shares of Nepal Grindlays Bank Limited (NGBL), previously owned by ANZ Grindlays Bank Limited, change the name of bank to Standard Chartered Bank Nepal Limited with effect from 16 July 2001.

Standard Chartered has a history of over 150 years in banking and operates in many of the world's fastest-growing markets in over 70 countries. Standard Chartered employs almost 75,000 people, representing over 115 nationalities, worldwide. This diversity lies at the heart of the Bank's values and supports the Bank's growth as the world increasingly becomes one market.

With 16 points of representation, 17 ATMs and more than 350 local staff, Standard chartered Bank Nepal Ltd. is in a position to serve its customers through an extensive domestic network. In addition, the global network of Standard Chartered Group gives the Bank a unique opportunity to provide truly international banking services in Nepal.

#### **b) Nepal Arab Bank Limited**

The arrival of NABIL Bank in Nepal on the 12th of July 1984 through a joint venture with Dubai Bank Ltd. under a Technical Service Agreement (TSA), marks a new dawn in the Nepalese banking industry. What is more admirable is with the opening of then Nepal Arab Bank Ltd, Customer Service or marketing took a U-turn. That in substance accelerated the evolution in banking products and services thereafter in Nepal. The bank commenced with a team of about 50 staff members and Rs. 28 million as capital. From the very inception in 1984 as the first joint venture bank to commence operations in Nepal, NABIL has been a leader in terms of bringing the very best international standard banking practices, products and services to the nation.

Today the bank's mission is to be the Bank of 1<sup>st</sup> Choice to all stakeholders. For the customers, the bank craves to be the first choice in meeting all financial requirements, for shareholders the bank wants to be the investment of choice, for Regulators to be an example of a model bank, and wants to be an outstanding corporate citizen in all the Communities and finally to be the first choice as an employer with whom to build a career.

Today NABIL Bank is a leader in the financial sector in Nepal with a network that has 26 points of representation spread across the nation; complimented by a network of ATMs and now NABIL Net and NABIL Tele the ease of access of accounts and information for our customers has never been more convenient. NABIL is a full service bank providing an entire range of products and services, starting with deposit accounts in local and foreign currency, Visa and MasterCard denominated in rupees and dollars, Visa Electron debit cards, Personal Lending products for Auto, Home and Personal loans, Trade Finance products, Treasury services and Corporate Financing. NABIL aims to be able to meet entire gamut of financial requirements that is why the banks prides itself in being 'Your Bank at Your Service'.

### **c) Himalayan Bank Limited**

The bank was incorporated in 1992 by a few distinguished business personalities of Nepal in partnership with Employees Provident Fund and Habib Bank Limited, one of the largest commercial Banks of Pakistan. Banking operation was commenced from January 1993. Himalayan Bank is the first commercial bank of Nepal whose maximum shares are held by the Nepalese private sector. Besides commercial banking services, the Bank also offers industrial and merchant banking services.

Himalayan Bank has a total network of 17 branches across the Country and a counter in the premises of the Royal Palace. There are six branches in Kathmandu Valley at the following locations: Thamel, New Road, Maharajgunj, Pulchowk (Patan), Suryavinayak (moved from Nagarkot) and

Card Center in Pulchowk. In addition, the bank also has ten branches outside Kathmandu Valley in Banepa, Tandi, Bharatpur, Birgunj, Hetauda, Bhairahawa, Biratnagar, Pokhara, Dharan and Butwal. The Bank is aggressively opening new branches at different parts of the Kingdom to serve its customers better.

Himalayan Bank is always committed to providing a quality service, with a personal touch, to its valued customers. All customers are regarded as valued clients and treated with utmost courtesy. The Bank, wherever possible, offers tailored facilities to its clients, to meet unique needs and requirements of different clients. To further extend the reliable and efficient services to its valued customers, Himalayan Bank has adopted the latest banking technology and runs the world class banking software Globus on IBM platform. The Bank can now boast of its state-of-the-art IT infrastructure with an identical Disaster Recovery System, offsite. This has not only helped the Bank to constantly improve its service level but has also prepared the Bank for future adaptation to new technology. The Bank already offers unique services such as Himal Remit, SMS Banking, Pre-paid Credit Cards and Internet Banking to customers and will be introducing more services like these in the near future.

#### **d) Everest Bank Limited**

Everest Bank Limited (EBL) started its operations in 1994 with a view and objective of extending professionalized and efficient banking services to various segments of the society. EBL joined hands with Punjab National Bank (PNB), India as its joint venture partner in 1997.

Drawing its strength from its joint venture partner, EBL has been steadily growing in its size and operations. And established itself as a leading Private Sector Bank. EBL is ranked as No. 2 bank by NRB as per CAMELS.

Despite fragile law and order situation especially during last 3-4 years, the Bank has recorded spectacular performance. As per audited accounts of FY 2004/2005, the Bank's operating profit was Rs. 375.20 million registering a growth of 18.9 % over the previous year. The Bank's credit recorded a growth of nearly 30 % over the last year reaching a figure of Rs 7900.09 million. Similarly, the total deposits of the Bank posted a growth of 25.22 % amounting to Rs 10097.69 million over the preceding year.

The bank is providing its services through a wide network of 23 branches across the nation and over 250 correspondents across the globe. All the major branches of the bank are connected through Anywhere Branch Banking System (ABBS), a facility which enables a customer to do banking transactions from any of the branches irrespective of their having accounts in other branch.

The Bank in association with Smart Choice Technology (SCT) is providing ATM services for its customers. EBL Debit Card can be accessed at more than 50 ATMs and over 250 Point of Sales across the nation. The bank is also managing the SCT ATM at Tribhuvan International Airport for the convenience of the customers and the travellers, the first and the only bank in Nepal to place ATM outlet at the Airport.

EBL is playing a pivotal role in facilitating remittance to and from across globe. Being the first Nepalese bank to open a representative office in Delhi, India, the Nepalese in India can open account in Nepal from the designated branches of Punjab National bank and remit their savings economically through banking channels to Nepal. The bank has a Drafts Drawing Arrangement with 175 branches of PNB all over India.

With an aim to help Nepalese citizens working abroad, the bank has entered into arrangements with banks and finance companies in different countries which enables quick remittance of funds by the Nepalese citizens in countries like UAE, Kuwait, Bahrain, Qatar, Saudi Arabia, Malaysia, Singapore and UK.

The Bank recognizes the value of offering a complete range of services. We have pioneered in extending various customer friendly products such as Home Loan, Education Loan, EBL Flexi Loan, EBL Property Plus (Future Lease Rentals), Home Equity Loan, Car Loan, Loan Against Shares, Loan Against Life Insurance Policies and Loan for Professionals. EBL have always endeavored in delivering innovative products suiting the consumer's requirements and needs thus enriching, enabling and beautifying their lives.

## **1.2 Statement of the Problem**

Commercial banks in Nepal have been facing various challenges and problems. Some of them arising due to the economic condition of the country, some of them arising due to confused policy of government and many of them arising due to default borrowers. After liberalization of economy, banking sector has various opportunities.

However, the financial institutions are increasing regularly. Liquidity is maximum with the financial institutions. Hence, the banks and financial institutions are competing among themselves to advance credit to limited opportunity sectors. Banks and financial institutions are investing in house loan, hire purchase loan for safety purpose. Lack of good lending opportunities, banks is facing problems of over liquidity. Nowadays, banks have increasing number of deposits in fixed and saving accounts but have decreasing trend in lending behaviors. So, this has caused major problems in commercial banks. Nowadays, due to competition among banks, the interest rate charge for loan is in decreasing trend. Due to unhealthy competition among banks, the recovery of the banks credit is going towards negative trends. Non-performing credits of the banks are increasing year by year. To control such type of state, the regulatory body of the banks and financial institutions, NRB has renewed its directives of the credit loss provision. Therefore, it is necessary to analyze the 'credit management' or credit disbursement recovery provision for loss and write off of credit. As the sample of commercial banks, Standard Chartered

Bank Nepal Limited, Nepal Bank Limited, Everest Bank Limited and Himalayan Bank Limited have been selected.

Research problems may be stated in the form of following questions:-

- a. What was the level of liquidity maintained by the sample banks?
- b. What is the volume of contribution made by sample banks in credit and advances?
- c. What is the deposit collection and utilization trend of sample banks?
- d. What is the relationship of deposits, loan & advances and net profits of sample banks?

### **1.3 Objective of the Study**

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

- a. To analyze the volume of contribution made by sample banks in credit & advances.
- b. To analyze the mobilization of deposit in credit of sample banks.
- c. To study the relationship of deposit, loan & advances and net profit of sample banks.
- d. To provide suitable suggestions for effective credit management.

### **1.4 Significance of the Study**

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

loopholes as a result of which the non-performing assets has been regarded as the main problem of the commercial banks in these days.

### **1.5 Limitations of the Study**

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

This study will not examine the credit management of all listed commercial banks due to lack of time, the study will see only the credit management four commercial banks – Standard Chartered Bank Nepal Limited, Nepal Arab Bank Limited, Everest Bank Limited and Himalayan Bank Limited, which are listed in NEPSE. This study will cover only the past five year's period since 2003/04 to 2007/08. To prepare this report, secondary data are collected from annual general meeting (AGM)'s report of the listed banks and trading reports of NEPSE. Primary information is collected from respective office and related persons. It may not cover the whole qualitative analysis of the commercial banks because of time and resource constraints.

The research study has some limitations. The main limitations of the study are as follows: -

- a. Though, there has been in operation of 26 commercial banks in Nepal, only four commercial banks are taken for the proposed study.
- b. This study concentrates only on credit management of selected commercial banks.
- c. The secondary data will be used for presentation and interpretation. Only a 5-years data will be considered.
- d. This study is only a case study; hence the conclusion drawn from the study does not ensure wide applicability in all types of enterprise running in different situations.
- e. The reliability of the secondary data depends on the accuracy of the annual reports, while that of primary data depends on the responses of respondents.
- f. In this study, only selected financial and statistical tools as well as techniques are used.

## **1.6 Organization of the Study**

The whole study is divided into five different chapters. They are:

**Chapter I** is the introduction chapter. It includes background of the study, the profile of the study, statement of the problems, objectives of the study, significance of the study, and limitations of the study and organization of the study.

**Chapter II** deals with review of literatures, which includes conceptual/theoretical review and review of related studies.

**Chapter III** is research methodology which includes research design, population and sample, source of data, data collection techniques and data analysis tools.

**Chapter IV** deals with the various analysis and interpretations of data like analysis of deposits, loan & advances and profile of Standard Chartered Bank Nepal Limited, Nepal Bank Limited, Everest Bank Limited and Himalayan Bank Limited, financial and statistical analysis and analysis of primary data. It also shows major finding of the study.

**Chapter V** includes summary and conclusion of the study. It also deals with recommendations suggested.

Besides these, Bibliography and Appendix are presented at the end of the study.

## CHAPTER – II

### REVIEW OF LITERATURE

#### 2.1 Conceptual Framework

##### 2.1.1 Concept of Credit

“Credit is financial assets resulting from the delivery of cash or other assets by a lender to a borrower in return for an obligation of repay on specified date on demand. Credit is the amount of money lent by the creditor (bank) to the borrower (customers) either on the basis of security or without security. Sum of the money lent by a bank is the credit.” (*Chopra; 1989: 35*)

“Credit and advances is an important item on the asset side of the balance sheet of a commercial bank. Bank earns interest on credits and advances, which is one of the major sources of income for banks. Bank prepares credit portfolio, otherwise it will not only add bad debts but also affect profitability adversely.” (*Varshney & Swaroop; 1994: 6*)

“Credit administration involves the creation and management of risk assets. The process of lending takes into consideration about the people and system required for the evaluation and approval of loan requests, negotiation of terms, documentation, disbursement, administration of outstanding loans and workouts, knowledge of the process and awareness of its strength and weaknesses are important in setting objectives and goals for lending activities and for allocating available funds to various lending functions such as commercial, installment and mortgage portfolios.” (*Johnson; 1940: 132*)

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

The basic purpose of a commercial bank is to maximize the shareholders' wealth by accepting deposits and granting loans in the society. In

order to give maximum return to shareholders, the bank is required to invest most of its fund in loans and advances, risky assets. Consequently, a clear and sound loan credit policy is a must for the safety of depositors fund and adequate return to shareholders. Credit policy can be defined as the decision made in advance about the management of credit.

“Credit is the vital and the most important activity in the bank, next only to deposit mobilization. It is the activity that generates the main income stream for the bank. The activity should therefore be pursued with the utmost professionalism conservation and circumspection. Banks should develop and implement policies and procedures to ensure that the credit portfolio is adequately diversified given the bank's target markets and overall credit strategy. In particular, such mix as well as set exposure limits on single counters parties and groups of connected counters parties, particular industries or economic sectors, geographic regions and specific products. Banks should ensure that their own internal exposure limits imply set by the banking supervisors. Credit policies establish the framework for lending and guide the credit granting activities of the bank.”  
(Crosse; 1963: 89)

### **2.1.2 Types of Credit**

The basic types of credit that the bank flows are in the form of;

#### **a) Overdraft**

It denotes the excess amount withdrawn over their deposit

#### **b) Cash Credit**

“The credit is not given directly in cash but deposit account is being opened on the name of credit taker and the amount credited to that account. In this way, every credit creates deposit.” (Rose; 2002: 42)

#### **c) Direct Credit**

Under this, the following types of credit falls;

### **i) Term Credit**

“It refers to money lend in lump sum to the borrowers. It is principal form of medium term debt financing having maturities of 1 to 8 years.

A bank credit with maturities exceeding 1 year is called term credits. The firm agrees to pay interest based on the bank's prime rate and to repay principal in the regular installments. Special patterns of principal payments over time can be negotiated to meet the firm's special needs.” *(Richard; 1996: 80)*

### **ii) Working Capital Credit**

“Working capital denotes the difference between current assets and current liabilities. It is granted to the customers to meet their working capital gap for supporting production process. A natural process develops in funds moving through the cycle are generated to repay a working capital credit.” *(Richard; 1996: 80)*

### **iii) Priority or deprived sector credit**

“Commercial banks are required to extend advances to the priority and deprived sector. 12 % of the total credit must be towards priority sector including deprived sector. Rs. 2 million for agriculture cum service sector and Rs. 2.5 million for single borrowers are limit sanctioned to priority sector. Institutional support to ‘Agriculture Development Bank’ and ‘Rural Development Bank’ are also considered under this category. Deprived sector lending includes:

- a. Advances to poor/downtrodden/weak/deprived people up to Rs. 30,000 for generating income or employment.
- b. Institutional credit to rural development bank.
- c. Credits to NGOs those are permitted to carryout banking transactions for lending up to Rs. 30,000.” *(Richard; 1996: 82)*

**iv) Hire purchase financing (Installment credit)**

“Hire-purchase credits are characterized by periodic repayment of principal and interest over the maturity of the credit. Hirer agrees to take the goods on hire at a stated rental including their repayment of principal as well as interest with an option to purchase. A recent survey of commercial banks indicates those banks are planning to offer installment credits on a variable rate basis. It can be secured and unsecured as well as direct and indirect installment credit.”

*(Richard; 1996: 83)*

**v) Housing Credit (Real Estate Credit)**

“Financial institutions also extend housing credit to their customers. It is different types, such as: residential building, commercial complex, construction of warehouse etc. It is given to those who have regular income or can earn revenue from housing project itself.” *(Richard; 1996: 83)*

**vi) Project Credit**

“Project credit is granted to the customers as per project viability. The borrowers have to invest certain proportion to the project from their equity and the rest will be financed as project credit. Construction credits are short-term credits made to developers for the purpose of completing proposed projects. Maturities on construction credits range from 12 months to as long as 4 to 5 years, depending on the size of the specific project.” *(Johnson, 1940: 242)* The basic guiding principle involved in disbursement policy is to advance funds corresponding to the completion stage of the project. Hence, what percent of the credit will be disbursed at which stage of completion must be spelled in disbursement policy. Term of credit needed for project fall under it.

**vii) Consortium Credit**

“No single financial institution grant credit to the project due to single borrower limit or other reason and two or more such institutions may consent to grant credit facility to the project of which is baptized as consortium credit. It reduces the risk of project among them. Financiers bank equal (or likely) charge on the project’s assets.” *(Richard; 1996: 85)*

### **viii) Credit Cards and Revolving Lines of Credit**

“Revolving credit line lowers the cost of making credit since operating and processing cost are reduced. Due to standardization, centralized department processes revolving credits resulting reduction on administrative cost. Continued borrowing arrangement enhances cost advantages. Once the credit line is established, the customer can borrow and repay according to his needs and the bank can provide the fund to the customer at lower cost.

Charge cards and credit lines tied to demand deposit accounts are the two most common revolving credit agreements. It can be further divided into credit cards, automatic overdrafts lines and large credit lines.” (*Richard; 1996: 85*)

### **ix) Off-balance Sheet Transaction**

“In fact, bank guarantee and letter of credit refer to off balance sheet transactions of financial institution. It is also known as contingent liability. Contingent liability pinpoints the liability, which may or may not arise during the happening of certain event. Footnotes are kept as reference to them instead of recording in the books of accounts.

It is non-funded based remunerative facilities but more risky than the funded until adequate collateral are not taken. Lets its two varieties be described separately.” (*Richard; 1996: 86*)

### **x) Bank Guarantee**

It is used for the sake of the customers in favor of the other party (beneficiary) up to the approved limit. Generally, a certain percent amount is taken as margin from the customer and the customer's margin account is credited.

### **xi) Letter of Credit (L/C)**

“It is issued on behalf of the customer (buyer/importer) in favor of the exporter (seller) for the import of goods and services stating to pay certain sum of money on the submission of certain documents complying the stipulated terms and conditions as per the agreement of L/C. It is also known as importers letter of credit since the bank of importer do not open separate L/C for the trade of same commodities.” (*Richard; 1996: 86*)

#### **d) Discounting of Bills**

It is the main function of commercial banks. Discounting of bill means made payment of bills, which are issued by commercial banks as well as central bank, NRB, before their expiration date or matured time. Therefore, payment should be less than the total amount because of their uncertainty.

#### **2.1.3 Objectives of Credit Policy**

The credit policy should be carefully established, properly communicated to the lending officers and implemented effectively by the lending officers. The basic objective of credit policy is to maintain effective credit management and control over it. Moreover, it is specified as follows:

##### **a) To have a good assets**

“Loans are the risky assets though a bank invests the most of its resources in granting loans and advances. The increasing of non-performing loan causes the non-existence of banks. It is the very quality of assets that led bankruptcy of many banks in South East Asia. The objective of sound loan policy is to protect depositors' interest and maximize returns to the shareholder by striking a balance between liquidity and profitability.”  
(*Saunders & Cornett; 2004: 61*)

##### **b) To contribute to economic development**

“A sound credit policy is required to ensure that the loans are given to the productive sector, which contributes to capital formulation and employment generation.” (*Saunders & Cornett; 2004: 61*)

##### **c) To give guidance to lending officials**

“A borrower should be assured that there would be no discrimination whether he deals with one officer or another. A sound credit policy is imperative to achieve a uniform standard procedure throughout the organization.” (*Saunders & Cornett; 2004: 62*)

##### **d) To establish a standard for control**

“Every policy requires periodic follow-up to ensure its proper implementation. A sound credit policy helps to determine the variance between actual performance and practices and to take corrective actions. A sound

policy is always flexible and works as a guideline. If the variation between the practice and policy is observed, proper education to lending officer or amendment of the policy will become inevitable.” (*Saunders & Cornett; 2004: 62*)

#### **2.1.4 Principle of Credit Policy**

“Good credit policy is essential to carry out the business of lending more effectively. Some policies are as follows:” (*Mishkin; 1998: 116-19*)

**a) Principle of safety fund:** Banks should look the fact that is there any unproductive or speculative venture or dishonest behavior of the borrower.

**b) Principle of liquidity:** “Liquidity refers to pay on hands on cash when it needed without having to sell long-term assets at loss in unfavorable market.” (*American Institute of Banking; 1972: 149*) A banker has to ensure that money will come in as on demand or as per agreed terms of repayment.

**c) Principle of security:** It acts as cushion to grant advances and credits. Adequate values of collaterals ensure the recovery of credit correctly at the right time. Accepted security should be readily marketable, handy and free from encumbrance.

**d) Principle of purpose of credit:** Generally, credit request would be accepted for productive sector only. Bank should be rejected credit request for speculation, social functions, pleasures trips, ceremonies and repayment of prior credit as they are unproductive.

**e) Principle of profitability:** Profitability denotes the value created by the use of resource is more than the total of the input resources. Bank should provide to such project that can provide optimum amount of return. For such purpose, bank should take a little bit risk by providing credit to venturous project.

**f) Principle of spread:** Portfolio of credit advances is to be spread not only among many borrowers of same industry. It across the industries in order to minimize the risk of lending keeping" Do not put your all eggs in the same basket" in mind.

**g) Principle of national interest:** In lending and granting advances, interest of nation should not be distorted (if undermined). Priority and deprived sector of economy and other alarming sector should be given proper emphasis while extending advances.

### **2.1.5 Key Characteristics of Credit Policy**

“Every policy has its own characteristics. The credit policy has the following characteristics:

#### **a) Approved by top management**

The credit policy is always prepared by the top management of an institution and is approved by the board of directors. It may be revised time to time.

#### **b) Practical and manageable**

The credit policy, prepared by the bank is not for theoretical rather it is for practical and manageable to apply.

#### **c) Flexibility**

Rigid credit policy is not practical. It has to be flexible according to the demand of customer.

#### **d) Compliance**

Credit policy is compliance with NRB policy as well as economic, political condition of the country.” (*Shrestha; 1993: 42*)

### **2.1.6 Systems and Procedures of Credit Policy**

A sound credit policy interact all the areas of credit effectively that ultimately helps to operate the organization successfully. Basically, a bank has to follow the following systems and procedures in credit policy.

#### **a) Credit Origination**

“Banks must operate within a sound and well-defined criteria for new credits as well as the expansion of existing credits. The credits should be extended within the target markets and lending strategy of the institution. Before allowing a credit facility, the banks must make an assessment of risk profile of the customer transaction. This may include:

- i. Credit assessment of the borrower's industry, and macro economic factors.

- ii. The purpose of credit and source of repayment.
- iii. The track record/repayment history of borrower.
- iv. Assess/evaluate the repayment capacity of the borrower v. The proposed terms and conditions and covenants.
- v. Adequacy and enforceability of collaterals.
- vi. Approved form appropriate authority.” (*Reed, Edward, Cotter & Smith; 1980: 72*)

In case of new relationships, consideration should be given to the integrity and repute of the borrowers or counter party as well as its legal capacity to assume the liability. “Prior to entering into any new credit relationship, the bank must become familiar with the borrower or counter party and be confident that they are dealing with individual or organization of sound repute and cordite worthiness. However, a bank must not grant credit simply on the basis of the fact that the borrower is perceived to be highly reputable, i.e. name lending should be discouraged.” (*Koch & Macdonald; 2004: 203*)

“While structuring credit facilities institutions should appraise the amount and timing of the cash flows as well as the financial position of the borrower and intended purpose of the funds. It is utmost important that due consideration should be given to the risk reward trade-off in granting a credit facility and credit should be priced to cover all embedded costs. Relevant terms and conditions should be laid down to protect the institution's interest.” (*Joseph; 1998: 43*)

Institutions have to make sure that the credit is used for the purpose it was borrowed. Where the obligor has utilized funds for purposes not shown in the original proposal, institutions should take steps to determine the implications on creditworthiness. In case of corporate loans where borrower own group of companies such diligence becomes more important. Institutions should classify such connected companies and conduct credit assessment on group basis.

“In loan syndication, generally the lead institution does most of the credit assessment and analysis. While such information is important, institutions should not over rely on that. All syndicate participants should perform their own independent analysis.

Institution should not over rely on collaterals/covenant. Although the importance of collaterals held against loan is beyond any doubt, yet these should be considered as a buffer providing protection in case of default, primary focus should be on obligor's debt servicing ability and reputation in the market.” (*Grywinski; 1991: 59*)

### **b) Limit Setting**

An important element of credit risk management is to establish exposure limits for single obligors and group of connected obligors. “Institutions are expected to develop their own limit structure while remaining within the exposure limits set by the central bank (i.e. Nepal Rastra Bank). The size of the limits should be based on the credit strength of the obligor, genuine requirement of credit, economic conditions and the institution's risk tolerance. Appropriate limits should be set for respective products and activities. Institutions may establish limits for a specific industry, economic sector or geographic regions to avoid concentration risk.” (*Shrestha; 1993: 53*)

Some times, the obligor may want to share its facility limits with its related companies. Institutions should review such arrangements and impose necessary limits if the transactions are frequent and significant. Credit limits should be reviewed regularly at least annually or more frequently if obligor's credit quality deteriorates. All requests of increase in credit limits should be substantiated.

### **c) Credit Administration**

Ongoing administration of the credit portfolio is an essential part of the credit process. Credit administration function is basically a back office activity that support and control extension and maintenance of credit. A typical credit administration unit performs following function:

**i) Documentation:** “It is the responsibility of credit administration to ensure completeness of documentation (loan agreements, guarantees, transfer of title of collaterals etc) in accordance with approved terms and conditions. Outstanding documents should be tracked and followed up to ensure execution and receipt.” *(Desai; 1967: 35)*

**ii) Credit Disbursement:** “The credit administration function should ensure that the loan application has proper approval before entering facility limits into computer systems. Disbursement should be affected only after completion of covenants and receipt of collateral holdings. In case of exceptions necessary approval should be obtained from competent authorities.” *(Desai; 1967: 35)*

**iii) Credit Monitoring:** “After the loan is approved and draw down allowed, the loan should be continuously watched over. These include keeping track of borrowers' compliance with credit terms, identifying early signs of irregularity, conducting periodic valuation of collateral and monitoring timely repayments.” *(Desai; 1967: 36)*

**iv) Loan Repayment:** “The obligors should be communicated ahead of time as and when the principal/markup installment becomes due. Any exceptions such as non-payment or late payment should be tagged and communicated to the management. Proper records and updates should also be made after receipt.” *(Desai; 1967: 36)*

**v) Maintenance of Credit Files:** “Institutions should devise procedural guidelines and standards for maintenance of credit files. The credit files not only include all correspondence with the borrower but should also contain sufficient information necessary to assess financial health of the borrower and its repayment performance. It need not mention that information should be filed in organized way so that external /internal auditors or NRB inspector could review it easily.” *(Desai; 1967: 36)*

**vi) Collateral and Security Documents:** “Institutions should ensure that all security documents are kept in a fireproof safe under dual control. Registers for documents should be maintained to keep track of their movement.

Procedures should also be established to track and review relevant insurance coverage for certain facilities/collateral. Physical checks on security documents should be conducted on a regular basis.” (Desai; 1967: 36)

### **2.1.7 Credit Monitoring and Control**

“Credit risk monitoring refers to incessant monitoring of individual credits inclusive of off-balance sheet exposures to obligors as well as overall credit portfolio of the bank. Banks need to enunciate a system that enables them to monitor quality of the credit portfolio of day-to-day basis and take remedial measures as and when any deterioration occurs. Such a system would enable a bank to ascertain whether loans are being serviced as per facility terms, the adequacy of provisions, the overall risk profile is within limits established by management and compliance of regulatory limits.

Establishing an efficient and effective credit monitoring system would help senior management to monitor the overall quality of the total credit portfolio and its trends. Consequently the management could fine tune or reassess its credit strategy/policy accordingly before encountering any major setback. The banks credit policy should explicitly provide procedural guideline relating to credit risk monitoring. At the minimum it should lay down procedure relating to;

- i. The roles and responsibilities of individuals responsible for credit risk monitoring
- ii. The assessment procedures and analysis techniques (for individual loans & overall portfolio)
- iii. The frequency of monitoring
- iv. The periodic examination of collaterals and loan covenants
- v. The frequency of site visits
- vi. The identification of any deterioration in loan.” (Gupta; 1984: 112)

#### **a) Financial Position and Business Conditions**

“The most important aspect about an obligor is its financial health, as it would determine its repayment capacity. Consequently institutions need carefully

watch financial standing of obligor. The key financial performance indicators on profitability, equity, leverage and liquidity should be analyzed. While making such analysis due consideration should be given to business/ industry risk, borrowers' position within the industry and external factors such as economic condition, government policies, regulation. For companies whose financial position is dependent on key management personnel and /or shareholders, for example, in small and medium enterprises, institutions would need to pay particular attention to the assessment of the capability and capacity of the management / shareholders.” (Khan; 1982: 92)

#### **b) Conduct of Accounts**

“In case of existing obligor the operation in the account would give a fair idea about the quality of credit facility. Institutions should monitor the obligor's account activity, repayment history and instances of excesses over credit limits. For trade financing, institutions should monitor cases of repeat extensions of due dates for trust receipts and bills.” (Khan; 1982: 93)

#### **c) Loan Covenants**

“The obligor's ability to adhere to negative pledges and financial covenants stated in the loan agreement should be assessed and any breach detected should be addressed promptly.” (Khan; 1982: 93)

#### **d) Collateral Valuation**

“Since the value of collateral could deteriorate resulting in unsecured lending, banks need to reassess value of collaterals in periodic basis. The frequency of such valuation is very subjective and depends upon nature of collaterals. For instance loan granted against shares need revaluation on almost daily basis whereas if there is mortgage of a residential property the revaluation may not be necessary as frequently. In case of credit facilities secured against inventory or goods at the obligor's premises, appropriate inspection should be conducted to verify the existence the valuation of the collateral.” (Khan; 1982: 93)

External Rating and Market Price of securities purchased as a form of lending or long-term investment should be monitored for any deterioration in

credit rating of the issuer, as well as large decline in market price. Adverse changes should trigger additional effort to review the creditworthiness.

### **2.1.8 Managing Credit Problems**

The institution should establish a system that helps to identify problem loan ahead of time when there may be more options available for remedial measures. Once the loan is identified as problem, it should be managed under a dedicated remedial process.

“A bank's credit risk policies should clearly set out how the bank will manage problem credits. Banks differ on the methods and organization they use to manage problem credits. Responsibility for such credits may be assigned to the originating business function, a specialized workout section or a combination of the two, depending upon the size and nature of the credit and the reason for its problems. When a bank has significant credit-related problems, it is important to segregate the workout function from the credit origination function. The additional resources, expertise and more concentrated focus of a specialized workout section normally improve collection results.” (*William; 1990: 21*)

A problem loan management process encompass following basic elements:

#### **a) Negotiation and follow-up**

“Proactive effort should be taken in dealing with obligors to implement remedial plans, by maintaining frequent contact and internal records of follow-up actions. Often rigorous efforts made at an early stage prevent institutions from litigations and loan losses.” (*William; 1990: 22*)

#### **b) Workout Remedial Strategies**

“Some times appropriate remedial strategies such as restructuring of loan facility, enhancement in credit limits or reduction in interest rates help improve obligor's repayment capacity. However it depends upon business condition, the nature of problems being faced and most importantly obligor's commitment and willingness to repay the loan. While such remedial strategies often bring up positive results, institutions need to exercise great caution in adopting such measures and ensure that such a policy must not encourage obligors to

default intentionally. The institution's interest should be the primary consideration in case of such workout plans it needs not mention here that competent authority, before their implementation, should approve such workout plan.” (*William; 1990: 22*)

**c) Review of Collateral and Security Document**

“Institutions have to ascertain the loan recoverable amount by updating the values of available collateral with formal valuation. Security documents should also be reviewed to ensure the completeness and enforceability of contracts and collateral guarantee.” (*William; 1990: 23*)

**d) Status Report and Review**

“Problem of credits should be subject to more frequent review and monitoring. The review should update the status and development of the loan accounts and progress of the remedial plans. Progress made on problem loan should be reported to the senior management.” (*William; 1990: 23*)

**2.1.9 Lending Criteria**

While screening a credit application, 5Cs to be first considered supported by documents.

**a. Character**

“Character is the analysis of the applicant as to his ability to meet the obligations put forth by the lending institution. For this analysis, generally the following documents are needed.

- i. Memorandum and articles of association
- ii. Registration certification
- iii. Tax registration certificate (Renewed)
- iv. Resolution to borrow
- v. Authorization-person authorizing to deal with the bank
- vi. Reference of other lenders with whom the applicant has dealt in the past or bank A/C statement of the customer.” (*Chhabra & Taneja; 1991: 15*)

## **b. Capacity**

“Describes customer's ability to pay. It is measured by applicants past performance records and followed by physical observation. For this, an interview with applicant's customers/suppliers will further clarify the situation. Documents relating to this area were:

- i. Certified balance sheet and profit and loss account for at least past 3 years.
- vii. References or other lenders with whom the applicant has dealt in the past or bank A/C.” (*Chhabra & Taneja; 1991: 15*)

## **c. Capital**

“This indicates applicant's capacity to inject his own money. By capacity analysis, it can be concluded that whether borrower is trying to play with lender's money only or is also injecting his own fund to the project. For capital analysis, financial statements, like certified balance sheet, profit and loss account is the only tools.” (*Chhabra & Taneja; 1991: 16*)

## **d. Collateral**

“Collateral is the security proposed by the borrower. Collateral may be of either nature movable or immovable. Movable collateral comprises right from stock, inventories to plying vehicles. In case of immovable it may be land with or without building or fixtures, plant machineries attached to it.” (*Chhabra & Taneja; 1991: 16*)

## **e. Conditions**

“Once the funding company is satisfied with the character, capacity, capital and collateral then a credit agreement (sanction letter) is issued in favor of the Borrower-stating conditions of the credit to which borrower's acceptance is accepted.” (*Chhabra & Taneja; 1991: 16*)

### **2.1.10 Project appraisal**

“Before providing credit to the customer, bank makes analysis of project from various aspects and angles. It will help the bank to see whether project is really suitable to invest. The purpose of project appraisal is to achieve the guarantee

of reasonable return from the project. Project appraisal answers the following questions:

- a. Is the project technically sound?
- b. Will the project provide a reasonable return?
- c. Is the project in line with the overall economic objectives of the country?

Generally, the project appraisal involves the investigation from the following aspects:

- a. Financial aspect.
- b. Economic aspect.
- c. Management/Organizational aspect.
- d. Legal aspect.”(Gautam; 2004: 258)

### **2.1.11 Steps of Lending Process**

Commercial bank issue loans but before issuing loans, they follow some steps of lending process. Bank has certain process for providing loans. When an individual or organization needs capital for doing certain works, then they search for loans and bank is the only one reliable and economic source of loan and advances. So, bank imposes following process for providing loans.

#### **a) Loan application**

“When a person need loan then he/she ask the loan procedure in the bank. If all the process and information is reasonable, then he/she makes loan application. It is also called loan proposal. For big business loan, it is appropriate to talk with loan officer. Loan officer can also contact to big account holder possessing business organization and ask it they are in need of loan. In developed country’s bank, themselves search for probable debtors. Banks make report of economic activities and when they found good customers they contact with them and ask for loan necessity.” (Brealy & Myers; 1991: 52)

#### **b) Loan interview**

“Second process involves the loan interview of applicants who apply for

the loan. This interview helps to find out the loan applicant's nature, i.e. habit, obedient. Bank also collects information about the purpose.” (*Brealy & Myers; 1991: 53*)

### **2.1.12 Need of Credit Policy in Commercial Bank**

In bank fund management, the cost of handling is, of course, as important as the availability of funding. Competition, deregulation, economic conditions and increased sophistication in money management on the part of retail and wholesale depositors have increased the cost of bank fund tremendously.

“Making an unsecured loan involves taking a risk and losses on some loans are to be expected. Commercial banks are increasingly facing credit risk (or counter party risk) in various financial instruments other than loans, including acceptances, inter bank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the settlement of transactions. Thus, the need of credit policy is the most, as the banks should always try to mitigate the risk related to the loan provided. Steps that banks can take to limit loan losses include obtaining sufficient information on loans and borrowers as well as establishing an internal system of loan review in addition to the loan reviews of regulatory agencies. Banks can also affect or offset credit risk in their loan portfolios by watching the business cycle, varying loan rates against the degree of risk and recognizing risk in loan concentration. Although specific credit risk policy and practices may differ among banks depending upon the nature and complexity of their credit activities, a comprehensive credit risk management program should address the following areas:

- i. Establishing an appropriate credit risk environment,
- ii. Operating under a sound credit granting process,
- iii. Maintaining an appropriate credit administration, measurement and monitoring process.
- iv. Ensuring adequate controls over credit risk.” (*Francis; 1991: 31*)

“Credit risk is a factor in all loans, but to varying degrees. Bank should

recognize this variability by matching loan rates to risk. A bank that charges the same rates for many types of loan is not receiving adequate compensation for its riskier loans. In comparison a loan's total yield to its risk, a bank also should consider any supporting deposit balances required in conjunction with the loan and may also want to consider other profitability generated from the customer's relationship with banks.” (*Basel Committee Consultative Paper; 1999: 17*)

## **2.2 Review of NRB Directives relating to Loan**

**1. Classifications of Loan and Advances:** Effective from FY 2058/59 (2001/02) banks shall classify outstanding principal amount of loan and advances on the basis of aging. As per the directives issued by NRB, all loans and advances shall be classified into the following four categories:

- a. Pass Loan:** - Loans and advances whose principal amount are not past due and past due for a period up to 3 months shall be included in this category. These are classified and defined as performing loans.
- b. Sub-Standard Loan:** - All loans and advances that are past due for a period of 3 months to 6 months shall be included in this category.
- c. Doubtful Loan:** - All loans and advances which are past due for a period of 6 months to 1 year shall be included in this category.
- d. Loss:** - All loans and advances which are past due for a period of more than 1 year as well as advances which have least possibility of recovery or considered unrecoverable and those having thin possibility of even partial recovery in future shall be included in this category.

Loans and advances falling in this category of sub-standard, Doubtful and loss are classified and defined as Non-performing loan. It is appropriate in the view of the banks management; there is not restriction in classifying the loan and advances from low risk category to high risk category. For instance, loans falling under substandard may be classified into doubtful or loss and loans falling under doubtful may be classified into loss category. The term loan and advances also includes bulls purchased and discounted.

**2. Additional Arrangement in Respect of Pass Loan:** Loan and advances fully secured by gold, silver, fixed deposit receipts, credit cards and government securities shall be include under “pass” category. Loans against fixed deposit receipts of other banks shall also qualify for inclusion under pass loan. However, where collateral of fixed deposit receipt or government securities or NRB bonds is placed as extra security, such loan has to be classified on the basis of clause 1 to clause 7. While renewing working capital loan having maturity period up to one year can be classified as pass loan. If the interest of working capital nature loans and advance is not regular, such loan and advances should be classified on the basis of interest outstanding period.

**3. Additional Arrangement in Respect of loss Loan:** Even if the loan is not past due, loans having any or all of the following discrepancies shall be classified as “loss”.

- a. Security is not sufficient,
- b. The borrower has been declared bankrupt,
- c. The borrower is absconding or cannot be found,
- d. Purchased or discounted bills are not realized within 90 days from the due date and non fund based letter of credit and guarantees etc are not realized with in 90 days from the date of conversion into fund based are not realized within 90 days,
- e. The credit has not been used for the purpose originally intended,
- f. Owing to non-recovery, initiation as to auctioning of the collateral has passed six months and if the recovery process is under litigation,
- g. Loan provided to the borrowers included in the blacklist of credit information center (CIC),
- h. Project or business is not in operative conditions, project or business is not in operation,
- i. Credit Card Loan is not written off within 90 days from past due date.

**4. Additional Arrangements in Respects of Term Loan:** In respect of term loans, the classification shall be made against the entire outstanding loan on the basis of the past due period of overdue installment.

**5. Prohibition to Recover Principal and Interest by Overdrawing the Current Account and Exceeding the Overdraft Limit:** Principal and interest on loans and advance shall not be recovered by overdrawing the borrower's current account or where overdraft facility has been extended, by overdrawing such limit. However, this arrangement shall not be constructed as prohibitive for recovering the principal and interest by debiting the customers' account. Where a system in the bank exists as to recovery of principal and interest by debiting the customers' account, and recovery is made as such resulting in overdraft, which is not settled within one month, such overdrawn principal amount shall also be liable to be include under the outstanding loan and such loan shall be downgraded by one step from its current classification. In respects if recognition of interest, the same shall be as per the clause relating to income recognition mentioned in directives no 4.

**6. Letter of Credit and Guarantees:** If letter of credit and guarantees and other contingent liabilities converted into fund based liabilities and have to be paid, in such condition such loan shall be classified as pass loan within 90 days from the date of conversion into fund based. After 90 days such loan shall be classified as loss loan.

**7. Rescheduling and Restructuring of the Loan:** If the bank is confident on the following bases of written plan of action submitted by borrower, it may reschedule or restructure the loans and advances. Clear bases of rescheduling or restructuring should be attached with loan files.

- a. If there is proof of adequate documents and collateral security relating to loan.
- b. If the bank is confident in recovery of restructured or rescheduled loans and advances.

In addition to written plan of action for rescheduling or restructuring of loan, payment of at least 25 percent of total accrued interest up to the date of rescheduling of restructuring should have been collected.

**8. Loan Loss Provisioning:** The loan loss provisioning, on the basis of the outstanding loans and advances and bills purchases classified as per this directives, shall be provided as follows:

<u>Classification of Loan</u>	<u>Loan Loss Provision</u>
Pass loan	1%
Sub-standard loan	25%
Doubtful loan	50%
Loss	100%

### **2.3 Review of Journals and Articles**

**Srnivasan and Yung** (1988), in their well read article, “*A Case Study of Corporate Credit Management*”, explained an expert credit granting system prototype in designing expert financial systems. Credit granting process in the participating corporation considered of two distinct phases (1) a customer evaluation phase, where the customer's credit worthiness is evaluated based on a variety of criteria; and ii) a credit limit determination phase, where the conclusions of the analysis are transformed into a credit limit or the customer. System design was therefore, split into two phase, (i) development of an appropriate data base and knowledge base to support the customer evaluation process and (ii) development of an appropriate model to support the credit limit determination phase.

This article has assumed to describe an expert credit granting prototype designed for a fortune 500 corporation. The focus has been on the conceptual process undertaken for designing the prototype. The model base and rules that comprise the prototype are combination of normative prescriptions and managerial preferences presented in a user-friendly environment issues that need conscious recognition in implementing such

Expert systems in corporate finance were also brought forth. The progress in computer and information technologies has provided financial researcher an opportunity to affect a transfer of the expertise contained in normative model to practicing managers through the medium of intelligent computer systems. This is a modest attempt to provide a conceptual foundation to this notion and illustrate its feasibility.

**Shaw and Gentry** (1988), in their well read article, “*Managing and Recommending Business Loan Evaluation (Marble) System*”, generalized expert system that minimize the lending expertise of several banking and finance professionals. The objectives of MARBLE are to help lending officer, credit analysis, and loan review committees to improve the evaluation of loan applicants and to learn how expert system operate. Based on the knowledge base and the information provided on the loan applicant, MARBLE synthesizes the information and estimates the likelihood that the loan will be repaid. Knowing that the conclusion recommended by MARBLE reflects the judgments of lending experts, management can use it to assist in the lending decision. The MARBLE system has the capability of learning from decision examples. Examples were used to show the value of inductive inference in the knowledge acquisition process. This learning capability makes it possible to build an intelligent decision support system. An empirical study shows encouraging result for incorporating inductive learning in MARBLE for loan evaluation.

**Duchassi, Shawk, and Seagle** (1988), in their well read article, “*A Knowledge-Engineered System for Commercial Loan Decisions*”, have showed Commercial Loan Analysis Support System (CLASS). This article describe an expert system, commercial loan analysis support system (CLASS) is an expert system designed to evaluate a company's financial posture, recommend commercial loan decision and pertinent components, and document the loan analysis. Like a loan officer, CLASS constitutently synthetics a large number of detailed facts into a loan recommendation.

CLASS has been designed to seek out any potential weakness in the prospective borrower and conduct an extensive detailed analysis of each weakness. Weaknesses may be over analyzed but none will be overlooked. This approach is consistent with the general notion in commercial lending that one is primarily concerned with weaknesses instead of strong points which are taken for granted. In addition to the limited validation conducted by the expert a more comprehensive validation can be implemented in two ways. First, the system can be empirically tested with a large sample of historical loan decisions. Second field tested can be conducted in which loan officer use CLASS while making actual loan decisions. Their judgments can be compared to those of CLASS at each step in the analysis. By building CLASS, it was demonstrated that financial knowledge can be represented and applied to a complex financial problem. It is hoped that the approach described here will pave the way for building expert systems that address other important financial problems.

**Keith** (1999), in his well read article, "*An Evaluation of Bank Credit Policies for Farm Loan Portfolios using the Simulation Approach*", stated that when many borrowers are combined to form a portfolio, borrowers may be graded on a common basis through the expected loss spectrum for default risk and security risk using a two-dimensional risk classification matrix structure. The extent to which unexpected losses on individual loan securities are correlated defines systematic risk while the remaining portfolio risk constitutes unsystematic risk. Systematic risk among loan securities occurs as a result of correlation of loss probabilities between different types of borrowers. Since the probability of default of borrowers is directly related to their income distributions, correlations of loss distributions occurs as a result of a common set of exogenous factors affecting income distributions of borrowers in different regions and industries. Beta risk on loan securities is therefore

assessed on the basis of securities classified for regional and industry segmentations.

**Ghimire** (2003), in his article, "*Credit Sector Reform and NRB*", has tried to highlight the effects of change or amendment in NRB directives regarding loan classification and loan loss provisioning. Although the circumstances leading to financial problem or crisis in many Nepali banks differ in many respects, what are common across of the most banks, which increased size of non-performing assets (NPA)? To resolve the problem of the losses or likely losses of this nature facing the industry, NRB as the central bank, amended several old directives and issued many new circulars in the recent years.

Since majority of the loans of most of the commercial banks of the country at present falls under substandard, doubtful and even loss categories, loan loss provisioning now compared to previous arrangement would be dramatically higher. The new classification and provisioning norms are very lenient as they help to strengthen banks financially. He added that the old system remained in force from 1991 to 2001, which was probably the most volatile decade of the business operation of the country. He has indicated that loan loss provisioning as a percentage of total credit of April 1, 2001 is 5.2% but as April 13, 2003, it has jumped to 18.39%. If only private banks are considered, it is 2.12% of April 2001 where as it is 6.30 % as of April 13, 2003. The total increment in loan loss provision is Rs 11,328.11 million and the total increment in credit is only Rs 7,976.70. He has also stated that tightening provisioning requirements on NPL is essential to ensure that banks remain liquid even during economic downturns.

NRB has worked for management and reform of the credit of the financial institution more seriously and NRB has adopted reforms aimed not just at dealing with problem banks but also at strengthening banking supervision to reduce the likelihood of future crisis. All prudential directives of NRB in

connection of credit sector reform have been made revised on after April 2001. To adapt to such changes there can be some difficulties and for a better and harmonized reform, NRB should continue to be supportive, proactive and also participative to take opinions of bankers for a change in regulation/policy taking place in the future.

**Satyal** (2005), in his article, "*Entrepreneur-Friendly Credit Policy*", has reviewed the present credit policy with main focus of the credit decision being based on the collateral. He argues that only collateral should not be considered as the basis of the credit decision.

Access to finance is vital element for entrepreneurship development in the country. Without it, one cannot think of starting business of any sort. It's mainly due to this reason; most of the students after completing there single- mindedly look for employment opportunity. No other options, no matter how attractive it would be enter into their mind. It has created huge pressure in the labor market. In the absence of entrepreneurial activities in the country, employment opportunity will be very limited and even qualified and competent people do not get job. The established notion of the Nepalese bankers that money lent to the wealthy people based on collateral is safe. But is not actually a safe assumption in the face of greater difficulty in loan recovery form these people. Also, this particular segment of market is already over-banked. With the worsening business performance of the Nepalese corporate sector mostly due to the poor management compounded by other factors like sluggish economic conditions and political instability, banks must now explore newer market segment for their sustained growth and success. Under this backdrop, Nepalese commercial banks must change their policy and must understand that event the people living in the low and middle level of economic pyramid can potentially be lucrative market.

**Koirala** (2006), in his well read article, "*Credit Culture of Commercial Banks in Nepal*", has concluded that the unorganized moneylenders in Nepal

never loose. They used to assess the record of accomplishment of potential borrowers and innocent characters termed as the best borrower. The bank, on the other hand, is an institution established to support and improves development process of a nation. The politicians and the staff have been responsible for the existence of huge volume of NPA in state-owned commercial banks. In order to improve the situation, there is a need to evolve a more acceptable working system backed by cooperation and realization by the banks employees as well as the politicians and stakeholders, who can influence in banks operation.

**Garg** (2006), in his well read article, *“Principles of Lending and Credit Culture at Rastriya Banijya Bank”*, has concluded that banks credit culture is the unique combination of policies, practices, experience, and management attitudes that defines the lending environment and determines the lending behavior acceptable to the bank. Loans are not be made unless there is a demonstrated capability for repayment. Lending culture can take cash flows as opposed to security. Every credit must be subject to rigorous analytical scrutiny of the customer’s repayment capability prior to approval, and on an ongoing basis following approval. There can be no exceptions to the basics principles of lending.

**Dhungana** (2006), in his well article, *“Problems of NPL’s and the Need of Financial Discipline in the Nepalese Banking System”*, has concluded that poor credit management and deterioration in the quality of loans give birth to non-performing assets. The internal measures play significance role to control the growth of NPL. Best credit practices, culture and policies are required to strengthen the internal factors. The banks should have a proper system and competency on risk management and should insure that risk are accurately identified, assessed and controlled properly. A proper risk management is undoubtedly an important tool for a good banking and NPL management.

He further states that it can be expected that the financial sector reforms will lower down the level of NPL from the existing level and strengthening the banks and financial institution internally to manage the credit portfolio efficiently and support will be continued to make a good credit culture in the system.

**Bhandari** (2007), in his well read article, “*Etiology and Strategy of Loan Repayment*”, has concluded that lending agencies should adopt several strategies for achieving their target of credit repayment. However, before enforcing coercive actions against entrepreneur and the enterprise, the banks and the lending agencies should follow a series of liberal strategies for recovering their loans.

**Zerith** (2008), in her article well read article, “*Credit Portfolio Management*”, affirmed that to manage the credit portfolios, bankers must understand not only the risk posed by each credit but also how the risks of individual lending and portfolios are interrelated. These interrelationships can multiply risk many times beyond what it would be if the risks were not related. Until recently, few banks used modern portfolio management concepts to control credit risk. Now, many banks view the credit portfolio in its segments and as a whole and consider the relationships among portfolio segments as well as among loans. These practices provide management with a more complete picture of the bank’s credit risk profile and with more tools to analyze and control the risk.

Zerith further concluded that effective credit portfolio management begins with oversight of the risk in individual loans. Prudent risk selection is vital to maintaining favorable lending quality. Therefore, the historical emphasis on controlling the quality of individual credit approvals and managing the performance of lending continues to be essential. But better technology and information systems have opened the door to better management methods. A portfolio manager can now obtain early indications of increasing risk by taking a more comprehensive view of the credit portfolio.

## 2.4 Review of Thesis

**Lamsal** (2004), in his Master's thesis, "*Credit Practices: A Study on NABIL Bank Ltd., SCB Nepal Ltd. and Himalayan Bank Ltd.*", has the major objective of examining the credit management in the selected banks. The specific objectives of the study are;

- a. To determine the liquidity position, the impact of deposit in liquidity and its effect on credit practices.
- b. To measure the bank's lending strength.
- c. To analyze the portfolio behavior of credit and measure the ratio and volume of lending made in agriculture, priority and productive sector.
- d. To measure the credit performances in quality, efficiency and its contribution in total income.

The research findings of the study are:

- a. The measurement of liquidity has revealed that the mean current ratio of all the three banks is not widely varied. All of them are capable in discharging their current liability by current asset.
- b. SCBNL's tendency to invest in government securities has resulted with the lowest ratio of loans and advances to total assets ratio whereas NABIL Bank Ltd. has highest due to steady and high volume of loans and advances throughout the years.
- c. The loans and advances and investment to deposits ratio has shown that NABIL Bank Ltd. has deployed the highest proportion of its total deposits in earning activities. This is the indicative of that in fund mobilizing activities NABIL Bank Ltd. is significantly better.
- d. The portfolio analysis has revealed that the flow of loans and advances in agriculture sector is the lowest priority sector among these commercial banks. The contribution of all the banks in industrial sector is appreciable. The contribution made by Himalayan Bank Ltd. in industrial sector is the greatest and that of SCBNL is the least.

- e. The lending in commercial purpose is highest in case of NABIL Bank Ltd. and least in case of SCBNL. SCBNL has highest contribution in service sector lending. It has contributed 25.47 % of its total credit in general use and social purpose.
- f. The mean ratio of interest income to total income has concluded that the contribution of interest income in total income is higher in case of Himalayan Bank Ltd. and lower in case of SCBNL. The interest expenses to total deposits ratio indicate that the cost of fund in Himalayan Bank Ltd. is the highest and that of SCBNL is the least.

**Paudel** (2005), in his Master's thesis, "*Credit Policy of Commercial Banks in Nepal*", has the objective to provide the credit practices in NIBL and SBI bank. The specific objectives are;

- a. To examine the liquidity and assets management of NIBL and SBI.
- b. To evaluate the investment policy of NIBL and SBI.
- c. To study the growth ratio of loan and advances.
- d. To analyze the investment to total deposit and net profit NIBL and SBI.

His research findings are;

- a. Both banks current assets have exceeded the current liabilities therefore the ratio is considered satisfactory. But the cash reserve ratios have fluctuated in high degree.
- b. NIBL has maintained both current ratio and cash reserve ratio better than that of SBI.
- c. The assets management ratio shows that deposit utilization of NIBL is less effective than SBI.
- d. NIBL has invested lower amount of government securities and share and debenture than that of NIBL.
- e. The growth ratio of total deposit, loan and advances, total investment and net profit of NIBL are less than that of SBI.

**Bajracharya** (2006), in his Master's thesis, "*A Study on Credit Management of Agriculture Development Bank Limited*" has the main objective to evaluate the lending procedure of ADBL. In addition to this main objective, the study has other specific objectives;

- a. To evaluate the trend of loan investment, collection and outstanding.
- b. To show the achievement of purpose-wise and term-wise loan disbursement, outstanding and collection of ADBL.
- c. To study lending policy, loan recovery procedure, interest rate and discount of ADBL.

His research findings are;

- a. The total investment of development financing increased from Rs. 7.13 billion in FY 057/58 to Rs. 12.85 billion in FY 063/64 registering an annual average growth trend of Rs.0.82 billion or 10.43%.
- b. The total collection of development financing increased from Rs. 5.34 billion in FY 057/58 to Rs. 11.84 billion in FY 063/64 registering an annual average growth trend of Rs. 0.93 billion or 14.22%.
- c. The total outstanding of development financing increased from Rs. 12.89 billion in FY 057/58 to Rs. 22.18 billion in FY 063/64 registering an annual average growth trend of Rs. 1.33 billion or 9.53%.
- d. Actual loan investment/disbursement, collection and outstanding of short-term is gradually increased every year. The lowest percentage of loan collection to disbursement is 76.46% in FY 060/61 and the highest is 87.33% in FY 063/64.
- e. ADBL's targeted and achieved loan disbursement is continuously followed by loan collection amount also in increasing trend. Though achieved collection ratio is increasing each year, achieved loan disbursement is in fluctuating trend since FY 059/60.

**Sejuwal** (2007), in his Master's Thesis, "*A Comparative Study on Credit Management of Commercial Banks; with Special Reference to NABIL and SCBNL*", has the main objective to explore the credit efficiency or inefficiency

and its management in commercial banks. The specific objectives of the study are;

- a. To assess credit practice of selected commercial banks.
- b. To explore the credit efficiency of selected commercial banks.
- c. To explore the relationship with loan and advances, non-performing loan and net profit of selected commercial banks.

His research findings are;

- a. The credit practices of NABIL in terms of total loans to deposit ratio is found to be more than SCBNL (i.e.  $0.6298 > 0.3660$ ). It indicates that NABIL has been strong to mobilize its total deposit as loan.
- b. In terms of interest income to loan and advances ratio, Nabil has mean score of 0.0932 and SCBNL has the mean score of 0.0858. From this point, NABIL Bank has the best performance in earning interest income.
- c. Lending policy of SCBNL with regard to non-performing loan to total loans and advances was found to be the lowest with the mean value with 0.0351 as compare to NABIL Bank. The result indicates that if non-performing loan increases, the overall banking business will be negatively affected.
- d. The ratio of loans and advances to total assets was found greater in NABIL in comparison with SCBNL which shows the good lending performance of NABIL, whereas in terms of loan and advances to current assets ratio, NABIL has highest mean than that of SCBNL, this meant that NABIL has relatively better practice in short term lending.
- e. Lending policy of SCBNL in terms of loan loss provision to total loans and advances was found relatively better than that of NABIL.

**Adhikari** (2008), in her Master's Thesis, "*Credit Management of Siddhartha Vikash Bank Limited*", has the main objective to analyze the credit management of the SVBL. The specific objectives of the study are;

- a. To analyze the trends of deposit collection and credit lending.

- b. To assess total amount of loan.
- c. To evaluate the performance of SVBL in terms of liquidity, profitability, sector wise loan, and non-performing loan.
- d. To analyze the capital adequacy of SVBL.

The major findings of the study are;

- a. Deposit collection of SVBL has significantly increasing trend. There is continuous increasing trend from 10 percent to 100 percent.
- b. In all year total fixed deposit has more contribution than other deposit. Then more contribution of saving deposit than that of current and call deposit.
- c. Correlation between deposit and loan disbursement is 0.99. This indicates that these two variables relation is highly positive.
- d. Capital adequacy of the SVBL has sufficient against NRB standard. It indicates that the lending capacity of SVBL is high.
- e. The highest risk of SVBL is in credit risk.

**Neupane** (2009), in his Master's Thesis, "*Credit Policy Analysis of Commercial Bank with Special reference to Everest Bank Limited*", has the main objective to find out the credit management position of Everest Bank Limited. The specific objectives of the study are;

- a. To evaluate the various financial ratios of the EBL.
- b. To determine the impact of deposit in liquidity and its effect on lending practices.
- c. To analyze trend of deposit utilization towards loan and advances and net profit.

The major findings of the study are;

- a. Cash and bank balance to current deposit of the bank shows the fluctuating trend during the study period. Similarly, cash and bank balance to interest sensitive ratio of EBL is also in fluctuating trend.

- b. Credit and advance to fixed deposit ratio of EBL is fluctuating trend. The mean ratio is 2.26 times in the study period. However, non-performing assets to total assets of EBL is in declining trend, whose mean ratio is 0.978%.
- c. The debt to assets ratio of EBL is excessively high or in other words they have excessively geared capital structure. On an average 93% of assets is financed through debt capital that is outsiders cost bearing fund.
- d. Return on loan and advances of EBL is also in fluctuating trend. The mean ratio is 2.2%. This shows the normal earning capacity of EBL.

## **CHAPTER – III**

### **RESEARCH METHODOLOGY**

#### **3.1 Research Design**

“A research design is a specification of methods and procedures for acquiring the information needed. It is the overall operational pattern of frame work for the project that stipulates what information is to be collected, from which sources and by what procedures.” (*Paul & Donald; 1999: 134*)

This study is carried out to get the empirical result of credit management in commercial banks of Nepal. To conduct the study, both analytical and descriptive research approach are adopted from the reality available historical data. All the data used in this study are primary and secondary in nature.

#### **3.2 Period Covered**

The study covered the period of 5 years from the fiscal year 2003/04 to 2007/08. Data were taken from the annual reports of NABIL, SCBNL, HBL and EBL and the analysis was made on the basis of these five years' data. Also, the questionnaires are disbursed and the primary data analysis is done.

#### **3.3 Population and Sample**

In the present context, there are altogether 26 commercial banks operating in Nepal. However, the analysis of credit management of all the commercial banks of Nepal is almost impossible within the short span of time and this study alone. Hence, the study specializes mainly on four commercial banks, namely, Standard Chartered Bank Nepal Limited, Nepal Arab Bank Limited, Himalayan Bank Limited and Everest Bank Limited. Thus, these aforementioned banks are taken as sample of the population.

### **3.4 Nature and Sources of Data**

To fulfill the predetermined objectives that are set up for the study, both primary and secondary sources are included. The secondary data was obtained from the official websites of the concerned sampled banks. Besides these, various bulleting available, websites, journals are also taken into consideration. The primary data are collected from field survey.

### **3.5 Tools used**

Different tools were used to enlighten the credit management in commercial banks of Nepal. They are;

#### **3.5.1 Financial Tools**

As the study is mainly concerned with the credit management, only the financial tools that are associated with the credit and which helps to achieve the objectives of the study are analyzed. They are;

##### **A) Total Loan to total deposit ratio**

This ratio is calculated to find out how successfully the banks are utilizing their deposits on loan and advances for profit generating activities. Greater the ratio indicates the better utilization of total deposits.

It is calculated as:

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

##### **B) Interest income to loans & advances ratio**

Interest income to loan and advances is one of the major sources of income for a commercial bank. The high volume of interest income is indicator of good performance of lending activities. This ratio is calculated as:

$$\text{Interest Income to Loans and Advances} = \frac{\text{Interest Income}}{\text{Loan and Advances}}$$

##### **C) Non-performing Loans to total loan & advances ratio**

NRB has directed all the commercial banks create loan loss provision against the doubtful and bad debts. But both of our concerned banks have not provided

data on non-performing loan in balance sheet and profit & loss account. Non-performing loans to total loan and advances ratio shows the percentage of non-recovery loans in total loans and advances. This ratio is calculated as:

$$\text{NPL to Total Loan \& Advances} = \frac{\text{Non Performing Loan}}{\text{Total Loan and Advances}}$$

#### **D) Loans and advances to total assets ratio**

Loan and advances is the major part of total assets for the bank. This ratio indicates the volume of loans and advances out of the total assets. A high degree of the ratio indicates that the bank has been able to mobilize its fund through lending function. It is calculated as:

$$\text{Loan and Advances to Total Assets Ratio} = \frac{\text{Loan and Advances}}{\text{Total Assets}}$$

#### **E) Loan and advances to current assets ratio**

Loan and advances is the major component in total assets, which indicates the ability of banks to canalize its deposit in the form of loan and advances to earn high return. If sufficient loan and advances cannot be granted, it should pay interest on those utilized deposit fund and may lose earnings. So commercial banks provide loan and advances in appropriate level to find out portion of current assets, which is granted as loan and advances. Loan and advances includes short-term loan and advances, overdraft, cash credit, local and foreign bills purchased and discounted. It is calculated as:

$$\text{Loan and Advances to Current Assets Ratio} = \frac{\text{Loan and Advances}}{\text{Current Assets}}$$

#### **F) Loan loss provision to total loan & advances ratio**

This ratio describes the quality assets that a bank holding. The provision for loan loss reflects the increasing probability of non-performing loan. The provision for loan mean the net profit of the banks will come down by such amount. Increase in loan loss provision decreases in profit result to decrease in dividends. But it's positive impact is that strengthens the financial conditions of banks by controlling the credit risk and reduced the risks related to deposits. So

it can be said that loans suffer only for short-term while good financial conditions and safety of loans will make bank's prosperity resulting in increasing profit for long-term. The low ratio indicates the good quality of assets in total volume of loans and advances. High ratio indicates more risky assets in total volume of loans and advances. It is calculated as:

$$\text{LLP to Total Loan \& Advances} = \frac{\text{Loan Loss Provision}}{\text{Total Loan and Advances}}$$

### 3.5.2 Statistical Tools

#### A) Arithmetic Mean or Average ( $\bar{X}$ )

An average is a single value that represents a group of values. It depicts the characteristic of the whole group. It is a representative of the entire mass of homogeneous data, its value lies somewhere in between the two extremes, i.e. the largest and the smallest items. It is obtained by dividing the sum of the quantities by the number of items. Thus,

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

Where,

$\sum X$  = sum of the sizes of the items

$N$  = number of items

#### B) Standard Deviation: (S.D.)

Standard deviation is the positive square root of the arithmetic average of the squares of all the deviations measured from the arithmetic average of the series. It is independent of the position of the origin. Generally, it is denoted by small Greek letter  $\sigma$  (read as sigma) and is obtained as follows.

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum (x - \bar{X})^2}{N}}$$

Where,

$N$  = Number of items in the series.

$\bar{X}$  = mean

$X$  = Variable

### C) Coefficient of Variation (C.V.)

The series (or group) for which the coefficient of variation is greater is said to be more variable or conversely less consistent, less uniform, less stable or less homogeneous. It is denoted by C.V. and is obtained by dividing the arithmetic mean to standard deviation. Thus,

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

Where,

$\sigma$  = Standard Deviation

$\bar{X}$  = Mean

### D) Coefficient of Correlation

“The coefficient of correlation is a number, which indicates to what extent two things (variables) are related to what extent variations in one go with the variations in the other.” (*Levin and David; 1994:613*)

The value of coefficient of correlation as obtained shall always lie between  $\pm 1$ , a value of  $-1$  indicating a perfect negative relationship between the variables, of  $+1$  a perfect positive relationship, and of no relationship when correlation coefficient is zero. The zero correlation coefficient means the variables are uncorrected.

It is defined by Karl Pearson as:

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

### E) Coefficient of Determination

Coefficient of determination measures only the strength of a linear relationship between two variables. It refers to a measure of the total variance in a

dependent variable that is explained by its linear relationship to an independent variable. The  $R^2$  is defined as the ratio of explained variance to the total variance. Thus,

$$\text{Coefficient of Determination } (R^2) = \frac{\text{Explained Variance}}{\text{Total Variance}}$$

### **F) Regression Analysis**

Regression is a statistical method for investigating relationships between the variables by the establishment of an approximate functional relationship between them. It is considered as a useful tool for determining the strength of relationship between two (Simple Regression) or more (Multiple regression) variables. It helps to predict or estimate the value of one variable when the value of other variable/variables is known. The regression line of dependent variable (Y) on independent variable (X) is given by;

$$Y = a + bX \dots \dots \dots (i)$$

Where, a = constant

b = regression coefficient

## CHAPTER – IV

### DATA PRESENTATION AND ANALYSIS

#### 4.1 Secondary Data Analysis

In this section, the ratio of credit and advances with other financial indicators has been measured to determine the efficiency of the bank in credit management.

##### 4.1.1 Credit and Advances Disbursed

The bank disburses credit and advances to gain interest income, which is considered as the main source of income of bank. The credit and advances disbursed within the five years period by SCBNL, NABIL, HBL and EBL has been delineated in the Table 4.1.

**Table 4.1**  
**Credit and Advances Disbursed**

<b>FY</b>	<b>SCBNL</b>	<b>NABIL</b>	<b>HBL</b>	<b>EBL</b>
2003/04	6693.86	8548.65	12919.63	6095.84
2004/05	8420.87	10946.74	13451.17	7900.09
2005/06	9206.28	13278.78	15761.98	10136.25
2006/07	10790.15	15903.02	17793.72	14082.68
2007/08	13963.98	21759.46	20179.61	18836.43
<b>Mean</b>	<b>9815.03</b>	<b>14087.33</b>	<b>16021.22</b>	<b>11410.26</b>
<b>S.D.</b>	<b>2748.66</b>	<b>5083.12</b>	<b>3030.11</b>	<b>5110.71</b>
<b>C.V.%</b>	<b>28.00</b>	<b>36.08</b>	<b>18.91</b>	<b>44.79</b>

*(Source: Appendix II)*

The table 4.1 shows volume of contribution made by sampled banks in credit and advances. The table depicts that the trend of granting credit and advances of all the four banks is in increasing trend. SCBNL has granted Rs. 6693.86 millions, Rs. 8420.87 millions, Rs. 9206.28 millions, Rs. 10790.15 millions and Rs. 13963.98 millions in credit and advances in the fiscal year 2003/04,

2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, Rs. 9815.03 millions has been disbursed in credit and advances by SCBNL and the coefficient of variation in such disbursement amount is 28.00%, indicating inconsistency in the amount.

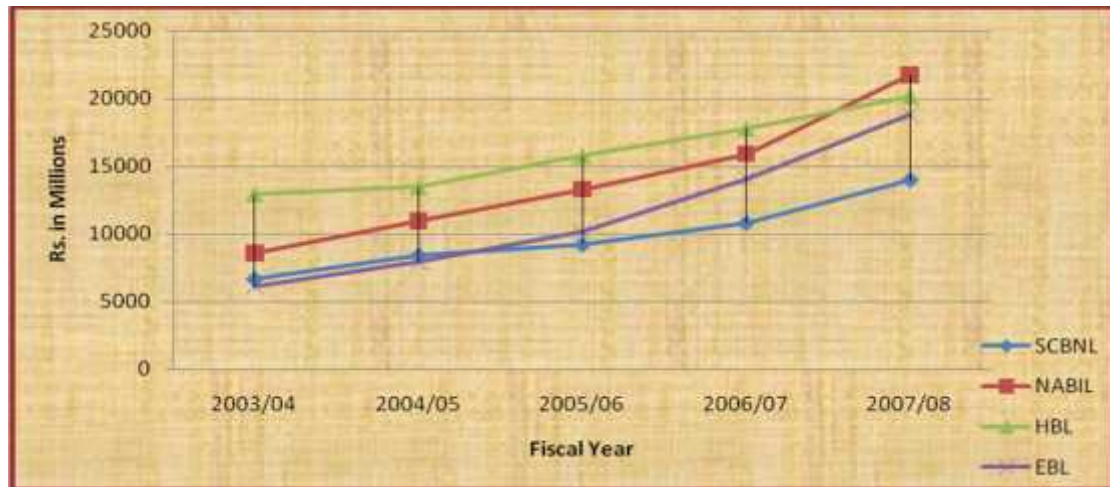
Also, the credit and advances disbursement of NABIL bank is Rs. 8548.65 millions, Rs. 10946.74 millions, Rs. 13278.78 millions, Rs. 15903.02 millions and Rs. 21759.46 millions in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, NABIL has disbursed Rs. 14087.33 millions in credit and advances and the coefficient of variation in such disbursement amount is 36.08%.

Similarly, the disbursement in credit and advances of HBL has ranged from Rs. 12919.63 millions in the fiscal year 2003/04 to Rs. 20179.61 millions in the fiscal year 2007/08. In average, Rs. 16021.22 millions has been granted as credit and advances to earn interest income and the coefficient of variation in such granting amount is 18.91%.

Further, the credit and advances amount of EBL is Rs. 6095.84 millions, Rs. 7900.09 millions, Rs. 10136.25 millions, Rs. 14082.68 millions and Rs. 18836.43 millions in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, EBL has disbursed Rs. 11410.26 millions in credit and advances and the coefficient of variation in the disbursement amount is 44.79%.

Comparing four banks, it can be concluded that credit and advances disbursement amount of HBL is highest than that others' in each fiscal year and in average. Also, the disbursement amount has been most uniform in HBL than that in others', since the coefficient of variation in the disbursement amount is lowest in HBL (18.91%) compare to that in SCBNL (28.00%), NABIL (36.08%) and EBL (44.79%).

**Figure 4.1**  
**Credit and Advances Disbursed**



#### 4.1.2 Total Credit to Total Deposit Ratio

The major source of fund of bank is considered as the total deposit. So, to examine what percentage of the total deposit has been mobilized by the selected banks in granting credit, the ratio of credit tot total deposit have been analyzed.

**Table 4.2**

#### Total Credit to Total Deposit Ratio

<b>FY</b>	<b>SCBNL</b>	<b>NABIL</b>	<b>HBL</b>	<b>EBL</b>
2003/04	31.63	60.55	58.70	75.59
2004/05	43.49	75.05	54.21	78.24
2005/06	39.92	68.63	59.50	73.44
2006/07	43.78	68.13	59.22	77.44
2007/08	46.95	68.18	63.37	78.56
<b>Mean</b>	<b>41.15</b>	<b>68.11</b>	<b>59.00</b>	<b>76.65</b>
<b>S.D.</b>	<b>5.88</b>	<b>5.14</b>	<b>3.26</b>	<b>2.13</b>
<b>C.V.%</b>	<b>14.28</b>	<b>7.54</b>	<b>5.52</b>	<b>2.78</b>

*(Source: Appendix II)*

The table 4.2 measures the mobilization rate of total deposit in disbursing credit and advances. The table has shown that the total credit to total deposit

collected of all the four banks is in fluctuating trend. The ratio in SCBNL is 31.63% initially in the fiscal year 2003/04, which has increased to 43.49% in the fiscal year 2004/05, has decreased to 39.92% in the fiscal year 2005/06, has again increased to 43.78% in the fiscal year 2006/07 and finally has reached to 46.95% in the fiscal year 2007/08. In average, SCBNL has mobilized 41.15% of the total deposit in granting credit and advances to earn interest income. Also, the coefficient of variation on such ratio is 14.28%.

Also, the mobilization rate of total deposit in credit and advances of NABIL is 60.55% in the fiscal year 2003/04, which has increased to 75.05% in the fiscal year 2004/05. Since 2005/06, NABIL has followed stable policy in mobilizing total deposit in credit and advances. The mobilization rate of deposit in credit and advances for the last three consecutive years is almost 68%, i.e. 68.63% in the fiscal year 2005/06, 68.13% in the fiscal year 2006/07 and 68.18% in the fiscal year 2007/08. In average, 68.11% of the total deposit has been mobilized in disbursing total credit.

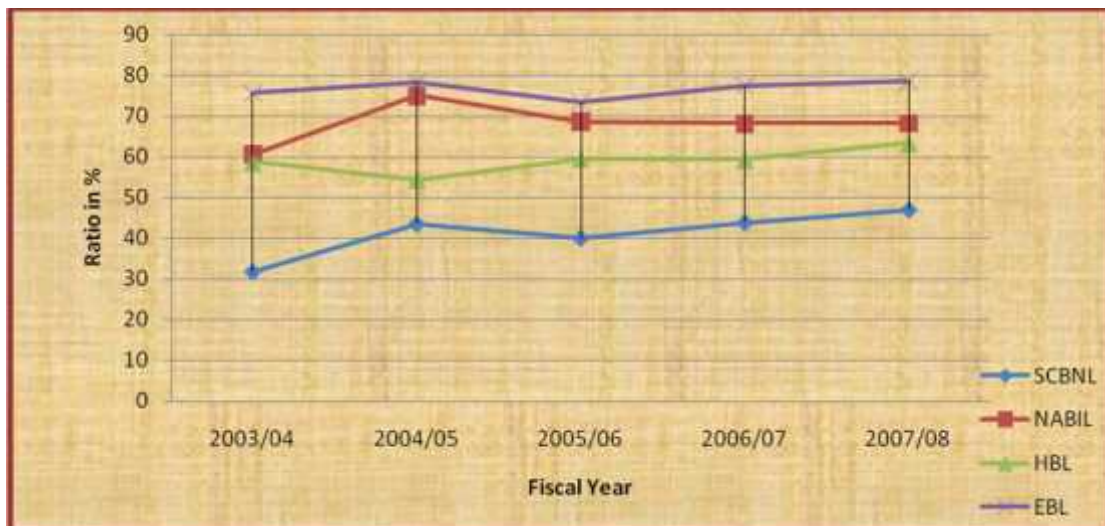
Similarly, the ratio in HBL is 58.70%, 54.21%, 59.50%, 59.22% and 63.37% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, 59.00% of the total deposit has been mobilized in granting credits and advances. And the coefficient of variation in the ratio is 5.52%, indicating high consistency in the ratio.

Likewise, the ratio in EBL is above 73% in each five years period. The ratio is 75.59%, 78.24%, 73.44%, 77.44% and 78.56% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, 76.65% of the total deposit has been mobilized by EBL in granting credits and advances. And the coefficient of variation in the ratio is 2.78%, indicating stable policy in granting credits from total deposit collection.

Comparing four sampled banks, it can be concluded that EBL has utilized the total deposit collection maximally than other banks in granting credits and advances. Since, the average ratio of EBL (76.65%) is highest than the ratio maintained by SCBNL (41.15%), NABIL (68.11%) and HBL (59.00%) and the ratio in each fiscal year of EBL is greater than that of other banks. Further, the policy of granting credits from the deposit amount is most stable in EBL than in other banks, as the coefficient of variation of EBL (2.78%) is lowest than that of SCBNL (14.28%), NABIL (7.54%) and HBL (5.52%).

**Figure 4.2**

**Total Credit to Total Deposit Ratio**



#### 4.1.3 Interest Income to Credit & Advances Ratio

The bank grants credit and advances for the sole reason to gain interest income. Thus, to examine how far the bank has been able to manage the credit in earning interest income, the ratio of interest income to credit and advances has been determined.

**Table 4.3**

**Interest Income to Credit & Advances Ratio**

FY	SCBNL	NABIL	HBL	EBL
----	-------	-------	-----	-----

2003/04	7.30	6.06	5.94	5.06
2004/05	6.04	5.12	6.44	4.92
2005/06	5.84	4.94	5.69	4.53
2006/07	6.16	4.96	5.27	4.15
2007/08	5.82	4.55	5.58	4.22
<b>Mean</b>	<b>6.23</b>	<b>5.13</b>	<b>5.78</b>	<b>4.58</b>
<b>S.D.</b>	<b>0.61</b>	<b>0.56</b>	<b>0.44</b>	<b>0.41</b>
<b>C.V.%</b>	<b>9.80</b>	<b>10.97</b>	<b>7.53</b>	<b>8.88</b>

(Source: Appendix II)

The table 4.3 has depicted the effectiveness of sampled banks to gain interest income from credit management. The table indicates that the interest income to total credit and advances ratio of SCBNL has followed decreasing trend for the first three years, i.e. 7.30% in the fiscal year 2003/04 to 5.84% in the fiscal year 2005/06, and then has increased to 6.16% in the fiscal year 2005/06 and finally has decreased to 5.82% in the fiscal year 2007/08. In average, SCBNL has earned 5.82% of the total credit and advances as interest income. The coefficient of variation in the ratio is 9.80%, indicating quite consistency in the ratio.

Likewise, the ratio in NABIL has decreased for the first three years, i.e. from 6.06% in the fiscal year 2003/04, 5.12% in the fiscal year 2004/05 and 4.94% in the fiscal year 2005/06, while in the fiscal year 2006/07, the ratio has increased to 4.96% and then has decreased to 4.55% in the fiscal year 2007/08. In average, NABIL has gained 5.13% of the total credit and advances as interest income and the coefficient of variation in the ratio is 10.97%.

However, the interest income to credit and advances ratio of HBL has followed fluctuating trend. The ratio is 5.94%, 6.44%, 5.69%, 5.27% and 5.58% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In

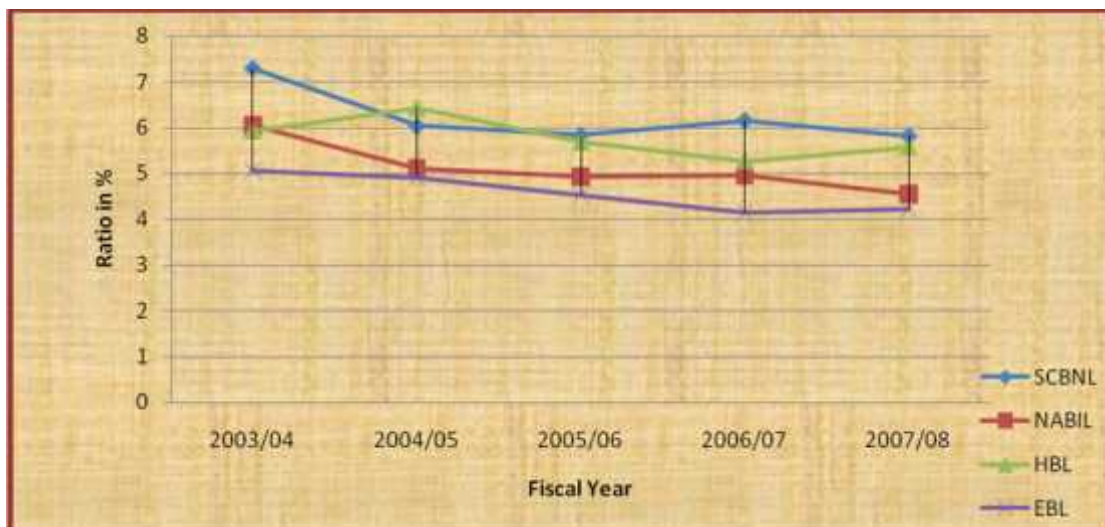
average, HBL has earned 5.78% of the total credit and advances as interest income and the coefficient of the variation in the ratio is 7.53%.

Similarly, the ratio in EBL has followed decreasing trend for the first four years, i.e. from 5.06% in the fiscal year 2003/04 to 4.15% in the fiscal year 2006/07, while in the fiscal year 2007/08, the ratio has slightly increased to 4.22% compare to the previous year. In average, EBL has earned 4.58% of the total credit and advances as interest income and the coefficient of variation in the ratio is 8.88%.

Comparing four banks, it can be concluded that the SCBNL is most successful to efficiently manage the credit to gain interest income, since the average interest income to total credit and advances of SCBNL (6.23%) is highest compare to that of NABIL (5.13%), HBL (5.78%) and EBL (4.58%).

**Figure 4.3**

**Interest Income to Credit & Advances Ratio**



**4.1.4 Interest Income on Credit & Advances to Total Interest Income Ratio**

Besides loan and advances, the bank earns interest income from money at short call and notice, government securities, corporate debenture and other investment. Thus, to examine the coverage of total interest earning from credit

and advances on the total interest earned, the ratio of interest income on credit and advances to total interest income has been determined.

**Table 4.4**

**Interest Income on Credit & Advances to Total Interest Income Ratio**

<b>FY</b>	<b>SCBNL</b>	<b>NABIL</b>	<b>HBL</b>	<b>EBL</b>
2003/04	46.86	51.71	61.57	46.90
2004/05	48.02	52.44	59.85	54.04
2005/06	45.22	50.08	55.14	50.83
2006/07	47.11	49.72	52.86	51.07
2007/08	51.11	50.02	57.35	51.33
<b>Mean</b>	<b>47.66</b>	<b>50.79</b>	<b>57.35</b>	<b>50.83</b>
<b>S.D.</b>	<b>2.17</b>	<b>1.21</b>	<b>3.50</b>	<b>2.55</b>
<b>C.V.%</b>	<b>4.56</b>	<b>2.38</b>	<b>6.11</b>	<b>5.02</b>

*(Source: Appendix II)*

The above table reveals the contribution of interest income earned on credit and advances on total interest income. The table shows that interest income on credit and advances to total interest income ratio of SCBNL is 46.86%, 48.02%, 45.22%, 47.11%, and 51.11% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, 47.66% of the total interest income has been represented by the interest income achieved from credit and advances. This indicates that the interest income of SCBNL majorly depends on the interest income earned from investment in different sectors like government securities, corporate debentures, others and money at short call and notice. However, the coefficient of variation of 4.56% indicates that there exists quite uniformity in the ratio.

Similarly, the interest income on credit and advances to total interest income of NABIL has ranged from 50.02% in the fiscal year 2007/08 to 52.44% in the fiscal year 2004/05. In average, the interest income on credit and advances has devoted 50.79% of the total interest income earned by NABIL. Hence, it can be

considered that almost half of the total interest of NABIL has been represented by interest income earned from credit and advances, and the coefficient of variation in the ratio is 2.38%, which indicates high uniformity.

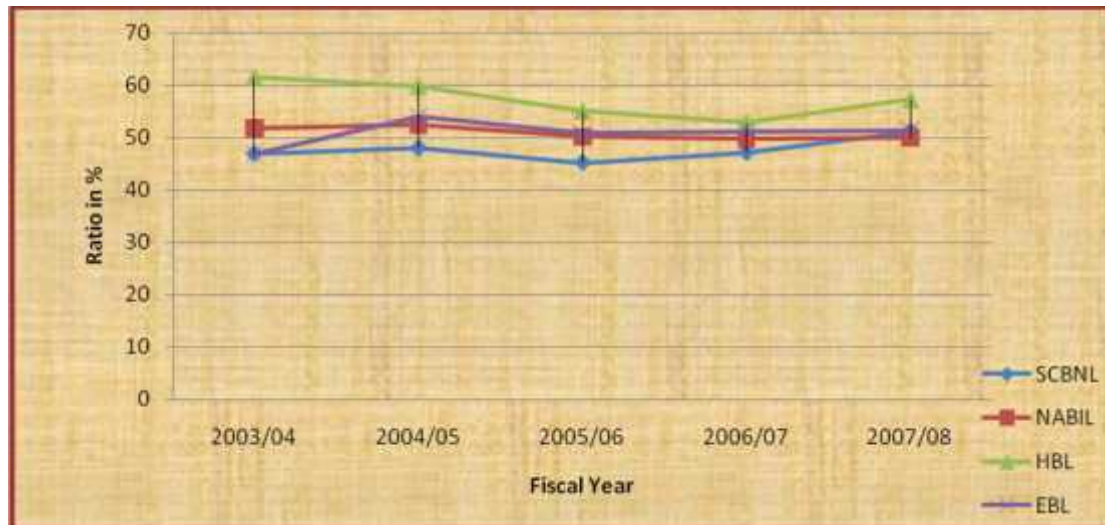
While in HBL, the ratio of interest income on credit and advances to total interest income has followed decreasing trend for the first four years, i.e. from 61.57% in the fiscal year 2003/04 to 52.86% in the fiscal year 2006/08, and then has increased to 57.35% in the fiscal year 2007/08. In average, 57.35% of the total interest has been represented by interest income on credit and advances, and the coefficient of variation in the ratio is 6.11%.

Also, the ratio of interest income on credit and advances to total interest of EBL is 46.90%, 54.04%, 50.83%, 51.07% and 51.33% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, the total interest earned on credit and advances has represented 50.83% of the total interest income of EBL. And the coefficient of variation on such ratio is 5.02%.

Comparing four banks on the basis of interest income on credit and advances to total interest earned, it can be concluded that credit and advances is the major source of income in HBL, EBL and NABIL, while in SCBNL the other form of investment, like government securities, corporate debentures, and money at short call and notice, is the major source of income. However, the contribution of interest income from credit and advances on total interest income in SCBNL cannot be ignored.

**Figure 4.4**

**Interest Income on Credit & Advances to Total Interest Income Ratio**



**4.1.5 Non-Performing Credit to Credit & Advances Ratio**

This ratio measures the risk on credit and advances granted. The higher the ratio, the higher will be the risk. The non-performing credit to credit and advances of the sampled banks is presented in the Table 4.5.

**Table 4.5**

**Non-Performing Credit to Credit & Advances Ratio**

<b>FY</b>	<b>SCBNL</b>	<b>NABIL</b>	<b>HBL</b>	<b>EBL</b>
2003/04	3.77	3.35	8.88	1.72
2004/05	2.69	1.32	7.44	1.63
2005/06	2.13	1.38	6.60	1.27
2006/07	1.83	1.12	3.61	0.80
2007/08	0.92	0.74	2.36	0.68
<b>Mean</b>	<b>2.27</b>	<b>1.58</b>	<b>5.78</b>	<b>1.22</b>
<b>S.D.</b>	<b>1.05</b>	<b>1.02</b>	<b>2.71</b>	<b>0.47</b>
<b>C.V.%</b>	<b>46.55</b>	<b>64.54</b>	<b>46.95</b>	<b>38.63</b>

*(Source: Appendix II)*

The above table measures the proportion of default credit to total credit and advances. The table shows that the ratio of non-performing credit, i.e. sub-

structured credit, doubtful credit and loss credit, of SCBNL is in decreasing trend, which is good indication of credit management. The ratio of non-performing credit to total credit and advances of SCBNL is 3.77% in the fiscal year 2003/04, which has been subsequently reduced to 0.92% in the fiscal year 2007/08. In average, 2.27% of the total credit and advances of SCBNL has turned to be non-performing credit. The coefficient of variation in the ratio is 46.55%, which has indicated high volatility in the ratio.

Similarly, the non-performing credit to total credit and advances of NABIL has followed decreasing trend except in the fiscal year 2005/06. The ratio has decreased from 3.35% in the fiscal year 2003/04 to 1.32% in the fiscal year 2004/05, and then has slightly increased to 1.38% in the fiscal year 2005/06, then has decreased to 1.12% in the fiscal year 2006/07 and has reached to 0.72% in the fiscal year 2007/08. In average, the non-performing credit has represented 1.58% of the total credit and advances and the coefficient of variation in the ratio is 64.54%.

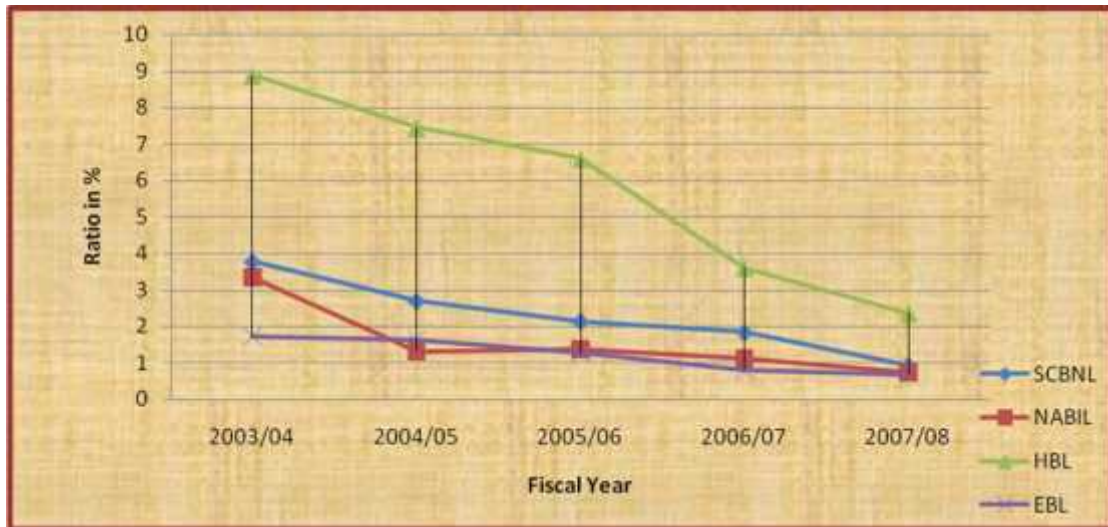
Likewise in HBL, the ratio of non-performing credit to total credit has decreased drastically within the five years period and the ratio is in decreasing trend. The ratio is 8.88% in the fiscal year 2003/04 and 2.36% in the fiscal year 2007/08. Within the five years period, HBL has remained able to decrease the ratio by 6.52%, which indicates sound credit management. In average, 5.78% of the total credit and advances has turned to non-performing credit and the coefficient of variation in the ratio is 46.95%.

Finally the ratio of non-performing credit to total credit and advances of EBL has also followed decreasing trend in the five year periods. The ratio is 1.72%, 1.63%, 1.27%, 0.80% and 0.68% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, 1.22% of the total credit and advances of EBL has turned to non-performing credit. The coefficient of variation in the ratio is 38.63%.

Comparing four sampled banks on the basis of non-performing credit to total credit, it can be concluded that the total credit of EBL is least risky than that of others, since the ratio is lowest (1.22%) compare to that of SCBNL (2.27%), NABIL (1.58%) and HBL (5.78%). However, the pace of decrement of HBL is highest than that of others within the five years period.

**Figure 4.5**

**Non-Performing Credit to Credit & Advances Ratio**



**4.1.6 Net Credit and Advances to Total Assets Ratio**

The net credit and advances, i.e. total credit excluding loan loss provision, to total assets measures the mobilization of total assets/fund in net credit. The higher the ratio, the higher will be the risk on total assets. The net credit and advances to total assets ratio of SCBNL, NABIL, HBL and EBL is presented in the below table.

**Table 4.6**  
**Net Credit and Advances to Total Assets Ratio**

<b>FY</b>	<b>SCBNL</b>	<b>NABIL</b>	<b>HBL</b>	<b>EBL</b>
2003/04	27.11	48.91	48.27	61.24
2004/05	37.39	62.04	45.31	64.94
2005/06	34.67	57.87	49.70	61.41
2006/07	36.73	57.04	50.71	63.75
2007/08	41.15	57.54	53.90	67.55
<b>Mean</b>	<b>35.41</b>	<b>56.68</b>	<b>49.58</b>	<b>63.78</b>
<b>S.D.</b>	<b>5.20</b>	<b>4.78</b>	<b>3.16</b>	<b>2.63</b>
<b>C.V.%</b>	<b>14.67</b>	<b>8.43</b>	<b>6.37</b>	<b>4.12</b>

*(Source: Appendix II)*

The table measures the proportion of net credit and advances, i.e. total credit and advances excluding credit loss provision, to total assets to measure the degree of risk on total assets. The table has depicted that 27.11%, 37.39%, 34.67%, 36.73% and 41.15% of the total assets of SCBNL has been mobilized to disburse credit and advances in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, 35.41% of the total assets of SCBNL has been utilized in granting credit and advances. The standard deviation and coefficient of the variation in the ratio are 5.20% and 14.67% respectively.

Similarly, the ratio in NABIL is highest (62.04%) in the fiscal year 2004/05 and lowest (48.91%) in the fiscal year 2003/04. In average, 56.68% of the assets of NABIL has been mobilized in credit and advances. The coefficient of variation in the ratio is 8.43%, which indicates quite consistency in the ratio.

Likewise, except in the fiscal year 2004/05, the net credit and advances to total assets of HBL is in increasing trend. The ratio has ranged from 45.31% in the fiscal year 2004/05 to 53.90% in the fiscal year 2007/08. In average, 49.58% of

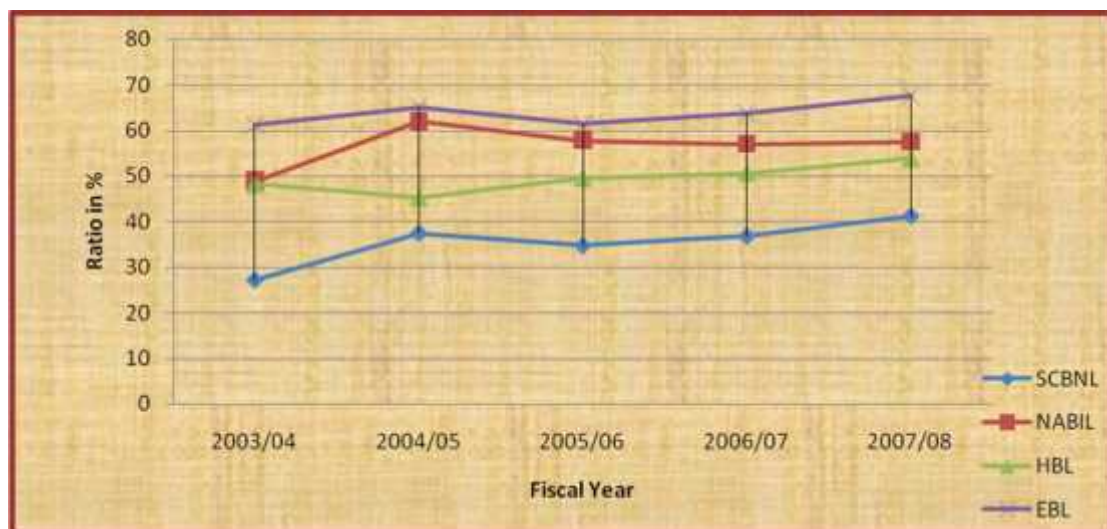
the total assets of HBL has been represented by net credit and advances and the coefficient of variation in the ratio is 6.37%.

Eventually, the net credit and advances to total assets ratio of EBL is 61.24%, 64.94%, 61.41%, 63.75% and 67.55% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average 63.78% of the total assets of EBL has been represented in net credit and advance to gain interest income and the coefficient of variation in the ratio is 4.12%, indicating high consistency.

Comparing four banks on the basis of net credit and advances to total deposit ratio, it can be concluded that the total assets composition of EBL is most risky than that of others, since the average net credit and advances to total assets of EBL (63.78%) is highest compare to that of SCBNL (35.41%), NABIL (56.68%) and HBL (49.58%).

**Figure 4.6**

**Net Credit and Advances to Total Assets Ratio**



#### 4.1.7 Net Credit and Advances to Current Assets Ratio

This ratio measures the relationship between the net credit and advances to current assets. The lower the ratio indicates the higher amount of other most liquid able assets like cash and bank balance and vice versa. The net credit and advances to current assets of the sample banks is presented in the table below.

**Table 4.7**  
**Net Credit and Advances to Current Assets Ratio**

<b>FY</b>	<b>SCBNL</b>	<b>NABIL</b>	<b>HBL</b>	<b>EBL</b>
2003/04	27.27	49.92	48.86	62.00
2004/05	37.51	63.38	45.81	65.69
2005/06	34.80	58.71	50.63	62.01
2006/07	36.89	57.65	51.59	64.26
2007/08	41.30	58.48	55.00	68.46
<b>Mean</b>	<b>35.55</b>	<b>57.63</b>	<b>50.38</b>	<b>64.48</b>
<b>S.D.</b>	<b>5.19</b>	<b>4.86</b>	<b>3.39</b>	<b>2.72</b>
<b>C.V.%</b>	<b>14.60</b>	<b>8.43</b>	<b>6.74</b>	<b>4.22</b>

*(Source: Appendix II)*

The above table has depicted the proportion of net credit and advances to current assets ratio of the sampled banks to measure the liquidity. The table shows that the net credit and advances to current assets of SCBNL is 27.27%, 37.51%, 34.80%, 36.89% and 41.30% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, 35.55% of the current assets of SCBNL has been represented by net credit and advances, which has indicated that 64.45% of the current assets is represented by the combination of cash and bank balance, money at short call and notice, short term investment and other assets.

Similarly, the ratio in NABIL is 49.92%, 63.38%, 58.71%, 57.65% and 58.48% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, 57.63% of the current assets of NABIL has been occupied by net credit and advances, which meant that 42.37% of the current assets has been represented by other. The coefficient of variation in the ratio is 8.43%, which indicates quite consistency in the ratio.

Likewise, the net credit and advances to current assets ratio of HBL is 48.86% in the fiscal year 2003/04, which has slightly decreased to 45.81% in the fiscal

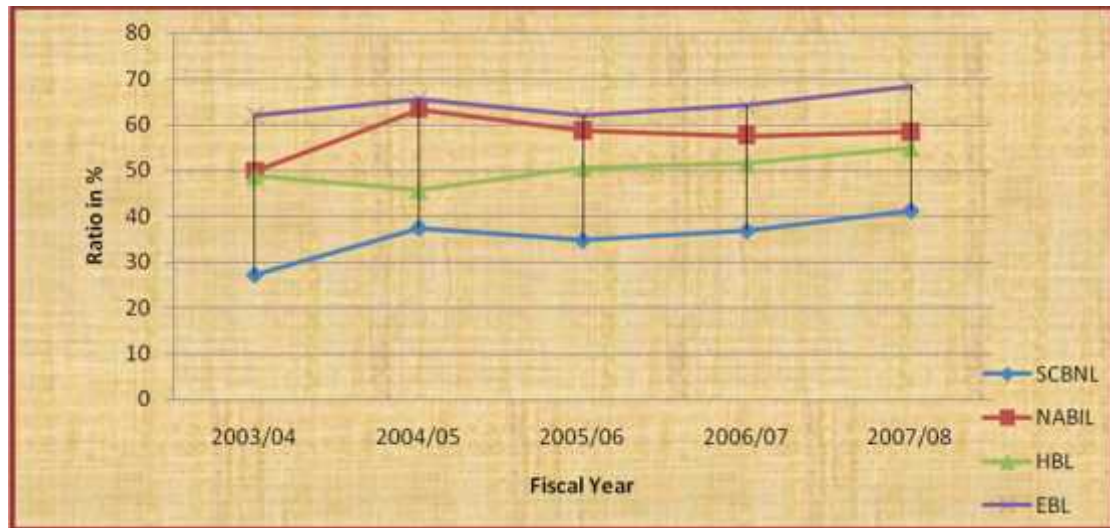
year 2004/05, and then follows increasing trend in the last three years and hence finally reaches to 55.00% in the fiscal year 2007/08. In average, 50.38% of the total current asset of HBL has been represented by net credit and advances and 49.62% of the current asset has been represented by other. And the coefficient of variation in the ratio is 6.74%, which indicates quite consistency in the ratio.

Finally, the ratio in EBL is 62.00%, 65.69%, 62.01%, 64.26%, 68.46% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average 64.48% of the current asset of EBL is represented by net credit and advances, which has indicated that the remaining 35.52% of the current asset is represented by other assets, like cash and bank balance, money at short call and notice, investment and other. The coefficient of variation in the ratio is 4.22%, which indicates uniform policy in net credit and advances to total current assets.

Comparing four banks, it can be concluded that the liquidity position of SCBNL is highest than other banks, since the ratio of net credit and advances to current assets of SCBNL is lowest (35.55%) compare to that of NABIL (57.63%), HBL (50.38%) and EBL (64.48%), which probably indicates that the most liquid assets, i.e. cash and bank balance, to current assets of SCBNL is probably highest than that of other banks.

**Figure 4.7**

**Net Credit and Advances to Current Assets Ratio**



**4.1.8 Credit Loss Provision to Total Credit and Advances Ratio**

This ratio measures the degree of risk on credit and advances granted. The higher the ratio indicates higher the risk on credit and advances, and higher chances of turning performing loan in sub-standard, doubtful and finally in loss loan.

**Table 4.8**

**Credit Loss Provision to Total Credit and Advances Ratio**

<b>FY</b>	<b>SCBNL</b>	<b>NABIL</b>	<b>HBL</b>	<b>EBL</b>
2003/04	4.24	4.20	7.49	3.47
2004/05	3.30	3.29	7.63	3.56
2005/06	2.94	2.68	7.10	3.30
2006/07	2.66	2.25	4.47	2.97
2007/08	1.76	1.81	3.38	2.64
<b>Mean</b>	<b>2.98</b>	<b>2.85</b>	<b>6.02</b>	<b>3.19</b>
<b>S.D.</b>	<b>0.91</b>	<b>0.93</b>	<b>1.96</b>	<b>0.38</b>
<b>C.V.%</b>	<b>30.38</b>	<b>32.75</b>	<b>32.51</b>	<b>11.95</b>

*(Source: Appendix II)*

The above table has revealed the risk of total credit and advances of four sampled banks in term of credit loss provision kept. The table shows that the credit loss provision to total credit and advances of SCBNL has followed decreasing trend, which indicates that the non-performing credit, i.e. sub-standard credit, doubtful credit and loss credit, of SCBNL has also followed decreasing trend. The credit loss provision to total credit of SCBNL is 4.24%, 3.30%, 2.94%, 2.66% and 1.76% in the fiscal year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. In average, SCBNL has kept 2.98% of the total credit and advances as credit loss provision, while the coefficient of variation in such ratio is 30.38% in the five fiscal years.

Also, the credit loss provision to total credit and advances of NABIL is in decreasing trend. The ratio is 4.20% in the fiscal year 2003/04 and has subsequently followed decreasing trend and has finally reached to 1.81% in the fiscal year 2007/08. In average, NABIL has kept 2.85% of the total credit and advances as credit loss provision and the coefficient of variation in the ratio was 32.75%. The table indicates that within the five years period NABIL successfully has reduced the ratio by 2.39%.

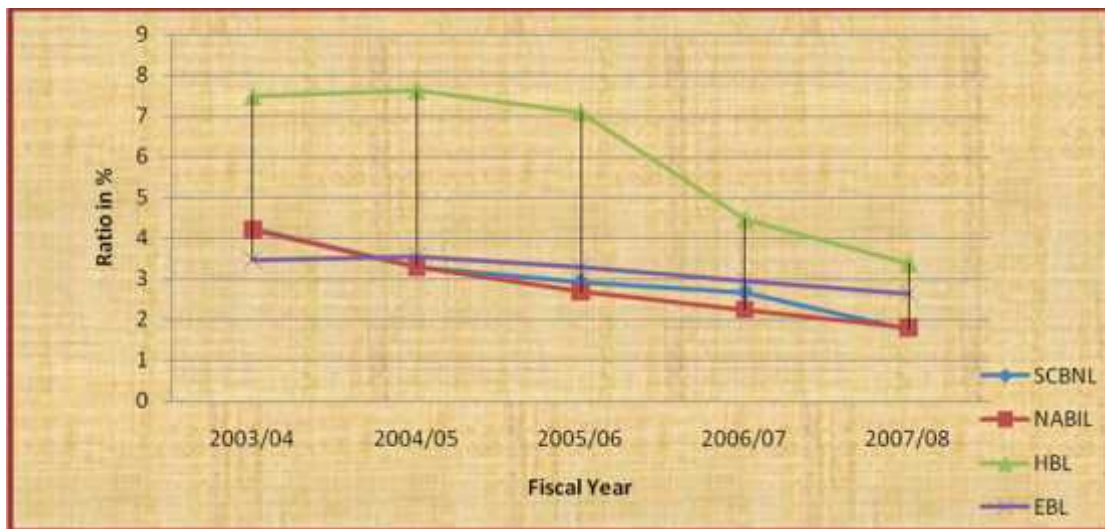
Similarly, the ratio in HBL in the fiscal year 2003/04 is 7.49%, which has increased to 7.63% in the fiscal year 2004/05, and then has decreased to 7.10% in the fiscal year 2005/06, 4.47% in the fiscal year 2006/07 and 3.38% in the fiscal year 2007/08. In average, HBL has kept 6.02% of the total credit and advances as credit loss provision and the coefficient of variation in the ratio is 32.51%. Within the five years period, HBL has reduced the ratio by 4.11%.

Further, the credit loss provision to total credit of EBL has ranged from 3.30% in the fiscal year 2005/06 to 2.64% in the fiscal year 2007/08. Initially the ratio is 3.47% in the fiscal year 2003/04. And in average, EBL has kept 3.19% of the total credit and advances as credit loss provision. In addition, the coefficient of variation in the ratio is 141.95%.

In overall, it can be concluded that all the four banks are successful to reduce the credit loss provision on total credit and advances by decreasing the non-performing credit. However, comparing four banks, it can be considered that the credit and advances of NABIL is least risky compared to that of other banks, since the ratio of credit loss provision to total credit and advances of NABIL (2.85%) is lowest than that of SCBNL (2.98%), HBL (6.02%) and EBL (3.19%).

**Figure 4.8**

**Credit Loss Provision to Total Credit and Advances Ratio**



**4.1.9 Simple Correlation Coefficient and Regression Lines of Net Profit on Total Credit and Advances**

To examine the relationship between net profit and credit and advances, the simple correlation coefficient and the regression line of net profit on total credit and advances have been analyzed. Let net profit be the dependent variable (Y) on total credit and advances (CA), independent variable (X). Then, the simple correlation coefficient and regression line calculated have been presented in the table below.

**Table 4.9**  
**Correlation and Regression Analysis between Net Profit and Total Credit & Advances**

<b>Correlation Between Net Profit and Total Credit &amp; Advances</b>					
<b>Bank</b>	<b>r</b>	<b>r<sup>2</sup></b>	<b>P.E.</b>	<b>6 P.E.</b>	<b>Remarks</b>
SCBNL	0.9581	0.9180	0.0247	0.1485	Significant
NABIL	0.9545	0.9111	0.0268	0.1608	Significant
HBL	0.9861	0.9724	0.0083	0.0500	Significant
EBL	0.9902	0.9806	0.0059	0.0352	Significant
<b>Regression Line of Net Profit on Total Credit &amp; Advances</b>					
<b>Bank</b>	<b>a</b>	<b>B</b>	<b>Regression Equation</b>		
SCBNL	244.35	0.04	NP = 244.35 + 0.04 CA		
NABIL	295.20	0.02	NP = 295.20 + 0.02 CA		
HBL	-349.21	0.05	NP = -349.21 + 0.05 CA		
EBL	-12.30	0.02	NP = -12.30 + 0.02 CA		

*(Source: Appendix – III)*

The above table has indicated that the relationship between net profit and credit and advances in all the four banks is perfectly positive, since the correlation coefficient between the two variables is 0.9581 in SCBNL, 0.9545 in NABIL, 0.9861 in HBL, and 0.9902 in EBL. Also, the coefficient of determination ( $r^2$ ) has indicated that 91.80% variation in net profit of SCBNL, 91.11% variation in net profit of NABIL, 97.24% variation in net profit of HBL and 98.06% variation in net profit of EBL is explained by change in credit and advances of the respective banks.

Since, the calculated value of 'r' is greater than the 6 P.E. of each bank, i.e. SCBNL ( $r = 0.9581 > 6 \text{ P.E.} = 0.1485$ ), NABIL ( $r = 0.9545 > 6 \text{ P.E.} = 0.1608$ ), HBL ( $r = 0.9861 > 6 \text{ P.E.} = 0.0500$ ), and EBL ( $r = 0.9902 > 6 \text{ P.E.} = 0.0352$ ), it can be considered that there exists statistically significant relationship between net profit and credit and advances, and hence net profit increases with the increase in credit and advances in each bank.

Similarly, the regression line of net profit on credit and advances has indicated that with per rupee increment in credit and advances, the net profit of SCBNL increases by Rs. 0.04, if the variable 244.35 remains constant, the net profit of NABIL increases by Rs. 0.02, if the variable 295.20 remains constant, the net profit of HBL increases by Rs. 0.05, if the variable -349.21 remains uniform, and the net profit of EBL increases by Rs. 0.02, if the variable -12.30 remains stable.

On the basis of simple correlation coefficient and regression line, it can be concluded that EBL has the highest perfectly positive correlation between net profit and credit and advances. However, the effect of credit and advances is highest in HBL, since the increment in net profit is highest in HBL, with the same per rupee investment in credit and advances.

#### **4.1.10 Multiple Correlation Coefficient and Regression Analysis between Net Profit, Total Deposit and Total Credit & Advances**

To examine the joint effect of total deposit and total credit and advances on the net profit of each sampled banks, the multiple correlation coefficient and the multiple regression line of net profit (NP) on total deposit (TD) and total credit and advances (CA) has been calculated.

**Table 4.10****Multiple Correlation and Regression Analysis between Net Profit, Total Deposit and Total Credit & Advances**

<b>Multiple Correlation</b>					
<b>Bank</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>P.E.</b>	<b>6 P.E.</b>	<b>Remarks</b>
SCBNL	0.7247	0.5253	0.2184	1.3105	Insignificant
NABIL	0.6795	0.4617	0.2373	1.4240	Insignificant
HBL	0.7062	0.4987	0.2266	1.3597	Insignificant
EBL	0.7008	0.4911	0.2289	1.3733	Insignificant
<b>Multiple Regression Line</b>					
<b>Bank</b>	<b>a</b>	<b>b<sub>1</sub></b>	<b>b<sub>2</sub></b>	<b>Regression Equation</b>	
SCBNL	49.46	0.02	0.02	NP = 49.46 + 0.02 TD + 0.02 CA	
NABIL	298.36	-0.01	0.03	NP = 298.36 - 0.01 TD + 0.03 CA	
HBL	-332.02	-0.003	0.05	NP = -332.02 - 0.003 TD + 0.05 CA	
EBL	-16.32	0.01	0.01	NP = -16.32 + 0.01 TD + 0.01 CA	

*(Source: Appendix – IV)*

The above table has revealed that there exists positive multiple correlation among net profit, total deposit and credit & advances in each sampled banks. The multiple correlation coefficient is 0.7247 in SCBNL, 0.6795 in NABIL, 0.7062 in HBL, and 0.7008 in EBL. Also, the coefficient of determination has indicated that 52.53% variation in net profit of SCBNL, 46.17% variation in net profit of NABIL, 49.87% variation in net profit of HBL, and 49.11% variation in net profit of EBL is explained by change in total deposit and credit and advances.

To test the significance of the relationship, the probable error has been calculated. Since, the value of 'R' in each bank is lower than the calculated 6 P.E., i.e. SCBNL ( $R = 0.7247 < 6 \text{ P.E.} = 1.3105$ ), NABIL ( $R = 0.6795 < 6 \text{ P.E.} = 1.4240$ ), HBL ( $R = 0.7062 < 6 \text{ P.E.} = 1.3597$ ), and EBL ( $R = 0.7008 < 6 \text{ P.E.} = 1.3733$ ), it can be considered that the relationship of net profit with total deposit and credit & advances is statistically significant, and hence it is not

necessary that net profit shall increase/decrease along with the increase/decrease of total deposit and credit & advances.

Similarly, the multiple regression of net profit on total deposit and credit and advances has indicated that with per rupee increment in total deposit, the net profit increases by Rs. 0.02 in SCBNL, decreases by Rs. 0.01 in NABIL, decreases by Rs. 0.003 in HBL, and increases by Rs. 0.01 in EBL, if the respective other variable remains uniform. Also, with per rupee increment in credit and advances, the net profit increases by Rs. 0.02 in SCBNL, Rs. 0.03 in NABIL, Rs. 0.05 in HBL and Rs. 0.01 in EBL.

On the basis of multiple correlation and regression analysis, it can be concluded that the joint effect of total deposit and credit & advances in net profit of each bank is statistically insignificant. Also, the multiple regression line has indicated that total deposit has positive relationship with net profit in SCBNL and EBL, and negative relationship with net profit in NABIL and HBL. Further, the increment of net profit with same per rupee investment in credit and advances is highest in HBL compare to that of others’.

#### **4.1.11 Trend Analysis of Credit & Advances**

To estimate the value of credit that will be granted in the fiscal year 2008/09 and 2009/10, the trend analysis of credit and advances has been computed. Let credit and advances be the dependent variable (Y) on the time (X), independent variable, then the regression line of credit and advances on time, and the trend value have been presented in the table below.

**Table 4.11****Trend Analysis of Credit & Advances**

<b>FY</b>	<b>SCBNL</b>	<b>NABIL</b>	<b>HBL</b>	<b>EBL</b>
2008/09	14887.88	23500.70	21679.98	20909.39
2009/10	16578.84	26638.49	23566.23	24075.77
Regression Line	$Y_{LA (SCBNL)} = 4742.17 + 1690.95 X_{Yr.}$			
	$Y_{LA (NABIL)} = 4673.96 + 3137.79 X_{Yr.}$			
	$Y_{LA (HBL)} = 10362.47 + 1886.25 X_{Yr.}$			
	$Y_{LA (EBL)} = 1911.13 + 3166.38 X_{Yr.}$			

*(Source: Appendix – V)*

The table has shown that the estimated value of credit and advances that will be granted in the fiscal year 2008/09 and 2009/10 by SCBNL will be Rs. 14887.88 millions and Rs. 16578.84 millions respectively, NABIL will be Rs. 23500.70 millions and Rs. 26638.49 millions respectively, HBL will be Rs. 21679.98 millions and Rs. 23566.23 millions respectively, and by EBL will be Rs. 20909.39 millions and Rs. 24075.77 millions respectively.

Further the regression line of credit and advances on time period indicates that in each fiscal year the credit and advances of SCBNL increases by Rs. 1690.95 millions, NABIL increases by Rs. 3137.79 millions, HBL increases by Rs. 1886.25 millions, and EBL increases by Rs. 3166.38 millions.

Comparing four banks, it can be concluded that NABIL continue to grant highest credit and advances in the forthcoming year as well. However, the highest pace of growth of credit and advances with time period of EBL indicated that EBL will overcome NABIL in the near future.

**4.2 Primary Data Analysis**

For the primary data collection, 8 questions have been prepared and distributed to 30 respondents. Out of 30 respondents, 10 were shareholders, 10 were bank employees and 10 were loanee of the banks. The shareholders are chosen

randomly from the NEPSE floor, whereas the banks employees and loanee are chosen by visiting the sampled banks.

#### 4.2.1 Efficiency in Credit Management

To examine whether the commercial banks of Nepal are efficient in credit management, the respondents are asked to express their opinions. The respondents obtain from them have been presented in the table below.

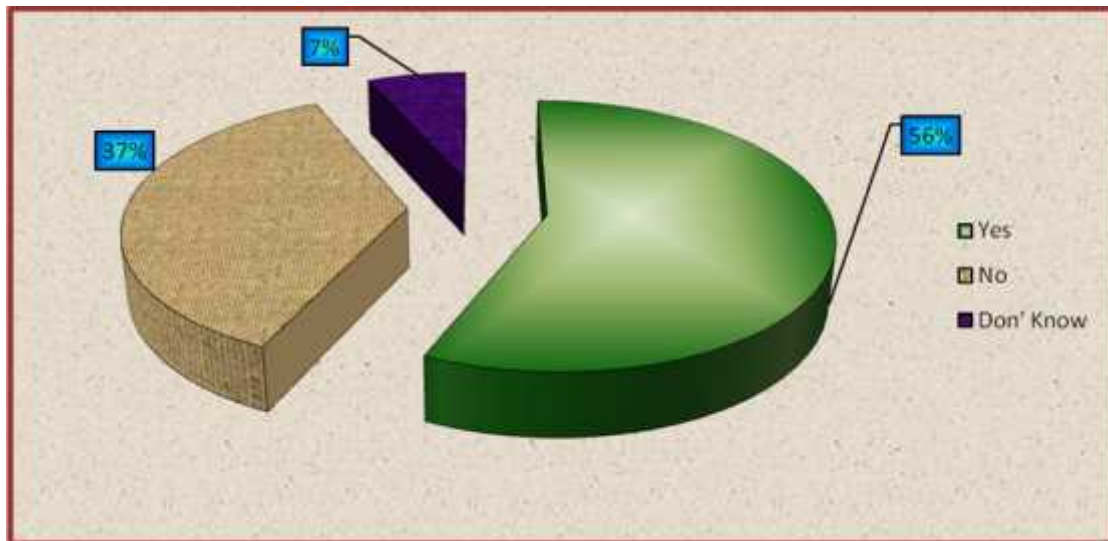
**Table 4.12**  
**Efficiency in Credit Management**

Answer	Shareholder		Employee		Loanee		Total	
	No.	%	No.	%	No.	%	No.	%
Yes	6	60	7	70	4	40	17	56
No	4	40	2	20	5	50	11	37
Don' Know	0	0	1	10	1	10	2	7
<b>Total</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>30</b>	<b>100</b>

*(Source: Field Survey, 2009)*

The table reveals that the majority of the respondents, i.e. 56% (17 out of 30), has opined that the commercial banks are efficient in credit management, while 37% of the respondents has said that the banks are not efficient in managing credit and 7% remained has said don't know. Looking each category, the majority of the shareholders, i.e. 60% (6 out of 10), and bank employee, i.e. 70% (7 out of 10), has stated that the banks are efficient in managing credit, while the majority of loanee, 50% (5 out of 10), has opined that the banks are not efficient in managing credit. Hence, overlooking the overall majority, it can be concluded that the commercial banks of Nepal are efficient in managing credit. However, it will be better, if the bank traces out the dissatisfaction of loanee in the management of credit by bank.

**Figure 4.9**  
**Efficiency in Credit Management**



#### 4.2.2 Harassment in Paper Document

Before granting loan, the bank has to arrange various documents to ensure the payment back of principal and interest amount of loan granted. So to know whether the paper document maintain is harassing, the respondents are asked on this regard. The responses obtained from them are presented in the table below.

**Table 4.13**  
**Harassment in Paper Document**

Answer	Shareholder		Employee		Loanee		Total	
	No.	%	No.	%	No.	%	No.	%
Yes	3	30	2	20	7	70	12	40
No	5	50	6	60	2	20	13	43
Don' Know	2	20	2	20	1	10	5	17
<b>Total</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>30</b>	<b>100</b>

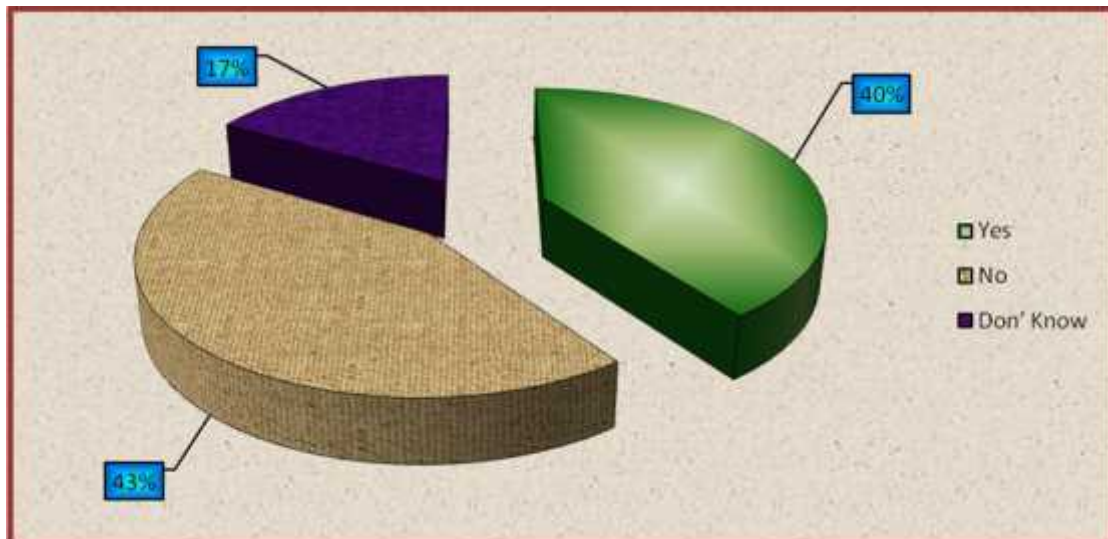
*(Source: Field Survey, 2009)*

The table shows that the majority of the respondents, 43% (13 out of 30), has stated that there is no harassment in paper document maintained by bank while granting loan, while 40% of the respondents (12 out of 30) has affirmed that

the paper documentation is harassing and 17% of the respondents (5 out of 30) has remained neutral. Gazing each category, the majority of shareholders, i.e. 50% (5 out of 10), and bank's employees, 60% (6 out of 10), have said that the paper documentation is not harassing, while the majority of the loanee, 70% (7 out of 10), has said that the paper documentation is harassing. Considering the overall responses, it can be concluded that the paper documentation maintained by commercial banks before granting loan is not harassing. However, the banks should not ignore the oppose opinion of loanee and should make the paper documentation comfortable.

**Figure 4.10**

**Harassment in Paper Document**



#### **4.2.3 Satisfaction in Mortgage Value**

To ensure the payment of loan by the loanee, the bank keeps mortgage after the valuing it. So to know whether the valuation done by bank is satisfactory, the respondents are asked on this matter. The respondents obtained from them are presented in the table below.

**Table 4.14**

**Satisfaction in Mortgage Value**

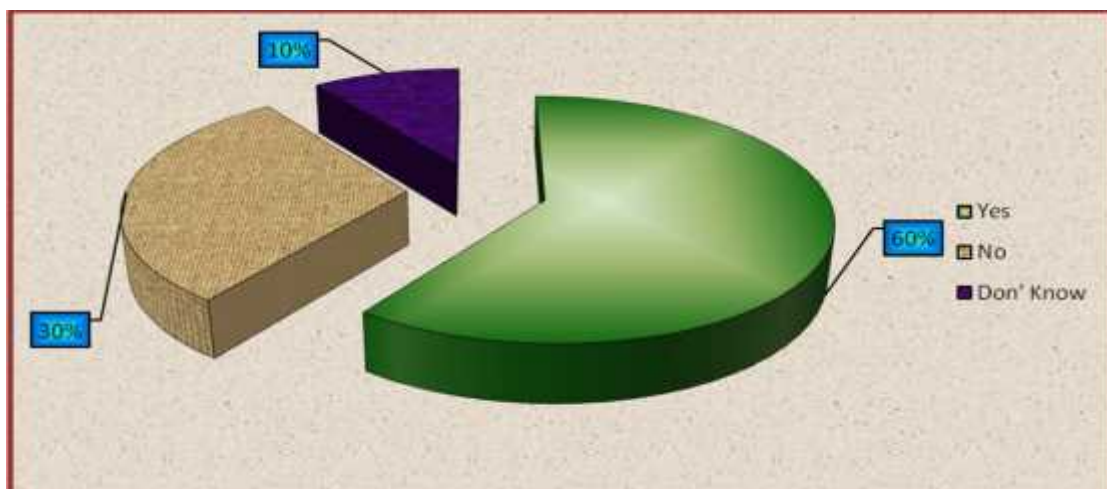
Answer	Shareholder		Employee		Loanee		Total	
	No.	%	No.	%	No.	%	No.	%
Yes	4	40	6	60	8	80	18	60
No	4	40	3	30	2	20	9	30
Don' Know	2	20	1	10	0	0	3	10
<b>Total</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>30</b>	<b>100</b>

(Source: Field Survey, 2009)

The table reveals that 40%, 40% and 20% of the shareholder states that the mortgage valuation done by commercial banks is satisfactory, not satisfactory and don't know respectively. Similarly, 60% of the bank employees say that the valuation is satisfactory, 30% has said the valuation is not satisfactory and 10% has remained neutral. Likewise, 80% and 20% of the loanee has said that the valuation is satisfactory and not satisfactory respectively. In overall, 60% of the total respondents have state that the valuation is satisfactory, while 30% stated that the valuation is not satisfactory and 10% remained neutral. Considering the overall majority, it can be concluded that the valuation of mortgage value done by bank before disbursing loan is satisfactory.

**Figure 4.11**

**Satisfaction in Mortgage Value**



#### 4.2.4 Involvement in Valuation

To examine from whom the valuation of mortgage should be done before granting loan, the respondents are asked on this matter. The responses obtained from each category and in total have been presented in the table below.

**Table 4.15**  
**Involvement in Valuation**

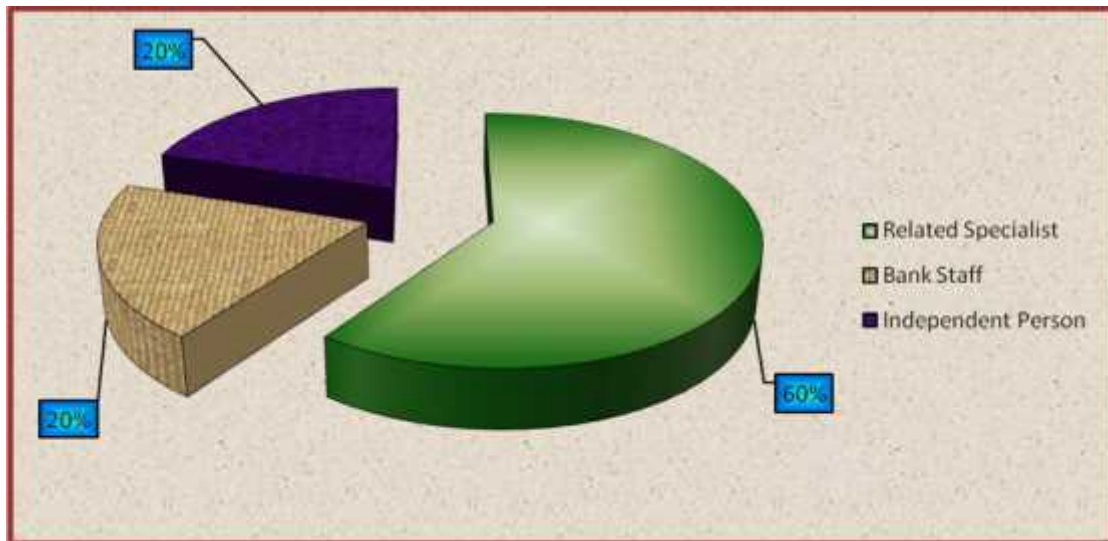
Answer	Shareholder		Employee		Loanee		Total	
	No.	%	No.	%	No.	%	No.	%
Related Specialist	8	80	4	40	6	60	18	60
Bank Staff	0	0	6	60	0	0	6	20
Independent Person	2	20	0	0	4	40	6	20
<b>Total</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>30</b>	<b>100</b>

*(Source: Field Survey, 2009)*

The above table depicts that the majority of the shareholders, 80%, has stated that the valuation should be done by the related specialist, while 20% of the shareholders has said that the valuation should be done by the independent person appointed by the mutual agreement between bank and loanee. Similarly, 60% of the bank employee has stated that the valuation should be done by the bank staff and 40% has said that the valuation should be done by related specialist. Likewise, 60% and 40% of the loanee has opined that the mortgage valuation should be done by related specialist and the independent person respectively.

In overall, 60% (18 out of 30), 20% (6 out of 30) and 20% (6 out of 30) of the respondents has said that the mortgage valuation should be done by related specialist, bank staff and independent person respectively. Considering the overall majority, it can be concluded that the valuation of mortgage would be satisfactory, if it has been done by related specialist.

**Figure 4.12**  
**Involvement in Valuation**



#### 4.2.5 Time to Disburse Loan

The bank takes certain time for loan approval after it receives the application form. Thus, to know how many days will be the best time to disburse credit, the respondents are asked on this matter. The responses obtained from them are presented in the table below.

**Table 4.16**  
**Time to Disburse Loan**

Answer	Shareholder		Employee		Loanee		Total	
	No.	%	No.	%	No.	%	No.	%
5-10 days	3	30	2	20	4	40	9	30
10-20 days	6	60	7	70	6	60	19	63
Above 20 days	1	10	1	10	0	0	2	7
<b>Total</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>30</b>	<b>100</b>

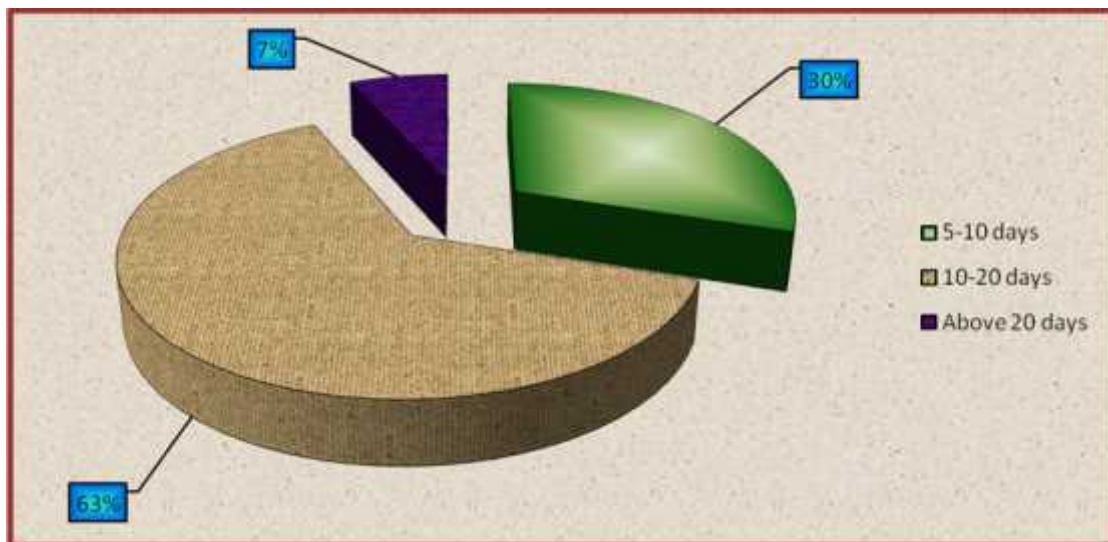
*(Source: Field Survey, 2009)*

The above table reveals that the majority of the shareholders, i.e. 60%, has stated that 10-20 days after the application received by the bank would be the appropriate time to disburse loan, while 30% and 10% of the shareholders has opined 5-10 days and above 20 days as the appropriate time. Similarly, 20%,

70% and 10% of the bank employees has indicated 5-10 days, 10-20 days and above 20 days as the appropriate time to disburse loan after the receipt of application. Likewise, 40% and 60% of the loanee has opined 5-10 days and 10-20 days as the appropriate time to disburse loan.

In overall, 30%, 63% and 7% of the total respondents has opined 5-10 days, 10-20 days and above 20 days respectively to be the appropriate time to disburse loan after the receipt of application. Hence, considering the overall majority of each group and overall, it can be concluded that 10-20 days would be the best time to disburse loan after receiving the application.

**Figure 4.13**  
**Time to Disburse Loan**



#### **4.2.6 Most Influencing Factor in Loan disbursement**

To investigate what factor is the most influencing in granting credit, the respondents are asked on this matter. The responses obtained from them are summarized in the table in the rank form.

**Table 4.17**

**Most Influencing Factor in Loan disbursement**

Influencer	Basis	Rank					Total	Weight	Mean Wt.	Overall Rank
		1	2	3	4	5				
Paper Document	Shareholder	1	0	2	3	4	10	39	3.90	5
	Employee	1	2	1	3	3	10	35	3.50	4
	Loanee	0	1	2	4	3	10	39	3.90	4
	<b>Total</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>10</b>	<b>10</b>	<b>30</b>	<b>113</b>	<b>3.77</b>	<b>4</b>
Time Period	Shareholder	1	1	0	5	3	10	38	3.80	4
	Employee	2	2	2	1	3	10	31	3.10	3
	Loanee	0	1	4	3	2	10	36	3.60	3
	<b>Total</b>	<b>3</b>	<b>4</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>30</b>	<b>105</b>	<b>3.50</b>	<b>3</b>
Employee Behavior	Shareholder	0	2	3	2	3	10	36	3.60	3
	Employee	1	0	3	2	4	10	38	3.80	5
	Loanee	1	0	2	2	5	10	40	4.00	5
	<b>Total</b>	<b>2</b>	<b>2</b>	<b>8</b>	<b>6</b>	<b>12</b>	<b>30</b>	<b>114</b>	<b>3.80</b>	<b>5</b>
Interest Rate	Shareholder	5	3	2	0	0	10	17	1.70	1
	Employee	4	2	2	2	0	10	22	2.20	1
	Loanee	5	5	0	0	0	10	15	1.50	1
	<b>Total</b>	<b>14</b>	<b>10</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>30</b>	<b>54</b>	<b>1.80</b>	<b>1</b>
Collateral Value	Shareholder	3	4	3	0	0	10	20	2.00	2
	Employee	2	4	2	2	0	10	24	2.40	2
	Loanee	4	3	2	1	0	10	20	2.00	2
	<b>Total</b>	<b>9</b>	<b>11</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>30</b>	<b>64</b>	<b>2.13</b>	<b>2</b>

*(Source: Field Survey, 2009)*

The above table shows that the interest rate charged on the loan amount is the most influencing factor while granting loans. The respondents have ranked 1 for interest rate chargeable, 2 for the collateral value, 3 for time period taken for granting credit, 4 for paper documentation required, and 5 for the behavior of bank's employee to the customer. In overall, the majority of the respondents, 14 out of 30, have opined that the interest rate is the most influencing factor in

loan disbursement. Thus, it will be worthwhile if bank charges the appropriate interest rate for effective credit management.

#### 4.2.7 Remedy for Loan Default

Loan default has become common within the past decades. So to examine what remedy can prevent the loan default, the respondents are asked to express their view. The responses obtained from them as remedies for loan default in the rank form have been presented in the table below.

**Table 4.18**  
**Remedy for Loan Default**

Remedy	Basis	Rank					Total	Weight	Mean Wt.	Overall Rank
		1	2	3	4	5				
Collateral	Shareholder	3	4	2	1	0	10	21	2.10	1
	Employee	3	3	4	0	0	10	21	2.10	2
	Loanee	3	4	3	0	0	10	20	2.00	2
	<b>Total</b>	<b>9</b>	<b>11</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>30</b>	<b>62</b>	<b>2.07</b>	<b>2</b>
Guarantor	Shareholder	2	1	2	2	3	10	33	3.30	3
	Employee	2	1	2	2	3	10	33	3.30	3
	Loanee	2	1	3	2	2	10	31	3.10	3
	<b>Total</b>	<b>6</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>8</b>	<b>30</b>	<b>97</b>	<b>3.23</b>	<b>3</b>
Counseling	Shareholder	1	1	1	4	3	10	37	3.70	4
	Employee	1	1	0	5	3	10	38	3.80	4
	Loanee	1	0	2	4	3	10	38	3.80	4
	<b>Total</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>13</b>	<b>9</b>	<b>30</b>	<b>113</b>	<b>3.77</b>	<b>4</b>
Technical Support	Shareholder	1	1	1	3	4	10	38	3.80	5
	Employee	1	1	1	3	4	10	38	3.80	4
	Loanee	0	0	1	4	5	10	44	4.40	5
	<b>Total</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>10</b>	<b>13</b>	<b>30</b>	<b>120</b>	<b>4.00</b>	<b>5</b>
Follow Up	Shareholder	3	3	4	0	0	10	21	2.10	1
	Employee	3	4	3	0	0	10	20	2.00	1
	Loanee	4	5	1	0	0	10	17	1.70	1
	<b>Total</b>	<b>10</b>	<b>12</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>58</b>	<b>1.93</b>	<b>1</b>

(Source: Field Survey, 2009)

The above table shows that follow up process adopted by bank is the most remedy of loan default. Out of 30 respondents, 10 ranked 1 for follow up, while 9 ranked 1 for collateral, 6 ranked 1 for guarantor, 3 ranked 1 for counseling, and 2 ranked 1 for technical support. In overall, follow up process got rank 1,

collateral got rank 2, guarantor got rank 3, counseling got rank 4 and technical support got rank 5. Thus, it can be concluded that the bank should continue follow up the activities of loanee to preserve from loan default. Besides, follow up, the bank should keep up the collateral value that can cover the loan amount, in case of loan default. Also, the guarantor shall be in the position to pay back loan in case of guarantee default. Further, the bank shall give counseling and technical support to the loanee, if required, to have sound credit management.

#### 4.2.8 Suggestions for Effective Credit Management

At the end of the questionnaire, the respondents are asked to give their valuable suggestion for the effective credit management. The responses obtained from them, in the rank form, have been presented in the table below.

**Table 4.19**  
**Suggestions for Effective Credit Management**

Remedy	Basis	Rank				Total	Weight	Mean Wt.	Overall Rank
		1	2	3	4				
Careful Evaluation	Shareholder	4	3	3	0	10	19	1.90	1
	Employee	3	5	2	0	10	19	1.90	1
	Loanee	5	5	0	0	10	15	1.50	1
	<b>Total</b>	<b>12</b>	<b>13</b>	<b>5</b>	<b>0</b>	<b>30</b>	<b>53</b>	<b>1.77</b>	<b>1</b>
Appropriate Interest	Shareholder	3	4	3	0	10	20	2.00	2
	Employee	3	4	3	0	10	20	2.00	2
	Loanee	4	4	2	0	10	18	1.80	2
	<b>Total</b>	<b>10</b>	<b>12</b>	<b>8</b>	<b>0</b>	<b>30</b>	<b>58</b>	<b>1.93</b>	<b>2</b>
Consumer Awareness	Shareholder	0	1	3	6	10	35	3.50	4
	Employee	0	0	3	7	10	37	3.70	4
	Loanee	0	0	3	7	10	37	3.70	4
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>20</b>	<b>30</b>	<b>109</b>	<b>3.63</b>	<b>4</b>
Timely Collection	Shareholder	3	2	1	4	10	26	2.60	3
	Employee	4	1	2	3	10	24	2.40	3
	Loanee	1	1	5	3	10	30	3.00	3
	<b>Total</b>	<b>8</b>	<b>4</b>	<b>8</b>	<b>10</b>	<b>30</b>	<b>80</b>	<b>2.67</b>	<b>3</b>

*(Source: Field Survey, 2009)*

The above table depicts that the respondents ranked 1 for careful evaluation of loan proposal, 2 for appropriate interest rate to be charged, 3 for collection of loan at regular time interval and 4 for consumer awareness, as the suggestion

for effective credit management of the bank. Out of 30 respondents, 12 ranked 1 for careful evaluation. So, it can be concluded that the bank can have sound management of credit, if it evaluates the credit proposal carefully. Also, the bank interest rate should not be high, as a result the loanee feel burden while paying interest amount.

### **4.3 Major Findings of the Study**

From the analysis of data, the following major findings have been drawn;

#### **Findings from Secondary Data Analysis**

- HBL has disbursed highest credit and advances than others. The average credit and advances disbursement of SCBNL is Rs. 9815.03 millions, NABIL is Rs. 14087.33 millions, HBL is Rs. 16021.22 millions and EBL is Rs. 11410.26 millions.
- EBL has utilized the total deposit maximally than other banks in granting credit and advances. The credit and advances to total deposit in average is 76.65% in EBL, 41.15% in SCBNL, 68.11% in NABIL and 59.00% in HBL.
- SCBNL has remained more effective in managing the credit to gain highest interest income. The average interest income to total credit and advances of SCBNL is 6.23%, NABIL is 5.13%, HBL is 5.73% and EBL is 4.58%.
- The interest income on credit and advances to total interest ratio has indicated that credit and advances is the major source of income in HBL, EBL and NABIL, since the ratio is higher than 50%. The average ratio is 47.66% in SCBNL, 50.79% in NABIL, 57.35% in HBL and 50.83% in EBL.
- The credit and advances of HBL is most risky than that of others. The non performing loan to total loan of SCBNL is 2.27%, NABIL is 1.58%, HBL is 5.78% and EBL is 1.22%.

- The total assets of EBL is most risky than that of others. The average net credit and advances is 35.41% in SCBNL, 56.68% in NABIL, 49.58% in HBL and 63.78% in EBL. Also, the average net credit to current assets is 35.55% in SCBNL, 57.63% in NABIL, 50.38% in HBL and 64.48% in EBL.
- The chances of turning performing credit in loss credit is highest in HBL, since HBL has the highest credit loss provision to total credit than others have. The credit loss provision to total credit is 2.98% in SCBNL, 2.85% in NABIL, 6.02% in HBL and 3.19% in EBL.
- The net profit has significant relationship with total credit and advances. The correlation coefficient between net profit and total credit is 0.9581 in SCBNL, 0.9545 in NABIL, 0.9861 in HBL and 0.9902 in EBL.
- Similarly, the multiple correlation coefficients of net profit and total deposit and total loan is 0.7247 in SCBNL, 0.6795 in NABIL, 0.7062 in HBL and 0.7008 in EBL.
- Also, the trend analysis has indicated that the estimated value of credit and advances disbursement in the fiscal year 2008/09 will be Rs. 14887.88 millions in SCBNL, Rs. 23500.70 millions in NABIL, Rs. 21679.98 millions in HBL and Rs. 20909.39 millions in EBL. Similarly, the credit and advances in the fiscal year 2009/10 will be Rs. 16578.84 millions in SCBNL, Rs. 26638.49 millions in NABIL, Rs. 23566.23 millions in HBL and Rs. 24075.77 millions in EBL.

### **Findings from Primary Data Analysis**

- 56% of the respondents agree that the bank is efficient in credit management. Also, 43% of the respondents have said that there is no harassment in the paper document requirement by bank while disbursing loan.
- Further the majority of the respondents, 60%, are satisfied in the mortgage valuation done by bank. Also, same percentage, 60%, has

stated that related specialist should be involved in mortgage valuation rather than bank staff and independent person.

- The majority of the respondents, 63%, have opined that 10-20 days will be the appropriate time to disburse loan after the bank receives application.
- In ranking the most influencing factor in loan disbursement, interest rate chargeable got rank 1, while collateral value got rank 2. Thus, interest rate of the bank is the most influencing determinants of loan.
- Similarly, the majority of the respondents ranked 1 for follow up as the remedy for turning loan into default. Eventually, the respondents have suggested that careful evaluation of the loan proposal before granting loan.

## **CHAPTER – V**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Summary**

Credit management has always been the primary function of banking, and accurately assessing a borrower's creditworthiness has always been the only method of managing credit successfully. Apart from the resource mobilization and collection of sources of funds, the banks should have good credit policy to monitor its credit portfolio, analyze the credit process and handle the credit operations, so that the investments made provide them smooth return. Although each bank has its own credit policies, the management should be aware that the credit policies should be mandatory and followed strictly with compliance by the staffs within.

The study has been carried out to analyze the credit management in commercial banks of Nepal. Since, the encompassment of all these banks is almost impossible in this study, only four banks, namely Standard Chartered Bank Nepal Limited, Nepal Arab Bank Limited, Himalayan Bank Limited and Everest Bank Limited, have been selected as sample from the population of twenty six commercial banks.

To achieve the objectives of the study, both the primary data and secondary data have been analyzed. The primary data has been collected by collecting the opinions of the respondents through questionnaire, while the secondary data have been extracted from the annual reports of the respective banks. Further, both financial tools and statistical tools have been effectively utilized to get the result.

Finally, the major findings have been extracted from the analysis of primary and secondary data, and the conclusion has been made on the basis of major findings. For the enhancement of the credit management of the sampled banks,

the recommendations have been given, considering the major findings and conclusion, at the end of the study.

## **5.2 Conclusion**

On the basis of secondary data analysis and major findings drawn it can be concluded that HBL was most successful than NABIL, SCBNL and EBL to disburse highest average amount of credit and advances. Also, HBL has more uniform policy than other sampled banks in credit and advances disbursement. However, EBL has mobilized more of the deposit collection in providing credit and advances than other three sampled banks. Also, the credit and advances to total deposit of EBL is most consistent than that of others'. Although, the credit and advances disbursement amount and the mobilization rate of deposit in total credit is lowest in SCBNL, the interest income to credit and advances of SCBNL is comparatively highest than that of others', thus it can be concluded that the credit and advances of SCBNL is most productive than that of others. SCBNL is most efficient in managing the credit and advances to yield highest interest in comparison with others'.

In contrast, the ratio of interest income earned on credit and advances to total interest income has depicted that the interest income on credit and advances is the main source of income in HBL, EBL and NABIL, while in SCBNL the income earned from other source, like from debentures, government securities, money at short call and notice, deposit on foreign banks and local licensed institutions, is the main source. Further, it can be concluded that the credit and advances of HBL is most risky than that of other sampled banks, since the non-performing credit to total credit and credit loss provision to total credit of HBL is highest.

The statistical analysis aid to conclude that the net profit of all the banks is highly dependent on the credit and advances disbursed. The relationship of net profit to credit and advances of all the banks is perfectly correlated with the

credit and advances disbursed and the relationship is statistically significant. In addition, the regression line of net profit on total credit has delineated that credit and advances has highest effect on net profit in HBL than in other, since the net profit increment is highest with the same rupee increment in credit. However, the joint effect of total deposit and loan and advances on total credit is not effective, and the relationship is statistically insignificant. Thus, it can be concluded that it is not mandatory that the net profit should increase/decrease with the increase/decrease of both the deposit and loan and advances.

The trend analysis helps to conclude that NABIL continue to grant highest credit and advances in the next two years. However, the pace of growth in credit and advances of EBL is highest than that of others, thus, it cannot be denied that EBL will overcome NABIL in granting credit and advances in the near future.

On the basis of primary data analysis, it can be concluded that the commercial banks of Nepal are efficient in credit management and there is no harassment in the paper documentation required while disbursing credit. Further, the mortgage valuation done while granting credit and advances is satisfactory and such valuation should be done by related specialist, not by bank's staff and independent person. In addition, it can be concluded that ten to twenty days is the most effective time in disbursing credit and advances after the receipt of application. Eventually, it can be concluded that interest is the most influencing factor while granting credit, and to follow up the activities of credit debtor is the most remedy for loan default, and the bank should make careful evaluation before granting credit and advances to have sound credit management.

### **5.3 Recommendations**

Embracing the major findings drawn in the previous chapter and the conclusion made, the researcher has given the following recommendations.

- The interest income is considered the main source of income of bank. The credit and advances disbursed by SCBNL is comparatively lowest than that of NABIL, HBL and EBL. So, to compete with these banks, SCBNL should flow more credit and advances to gain more interest income.
- The deposit mobilization of EBL in credit and advances is highest than that of others. However, the interest income earned by EBL on credit and advances is lowest. So, it would be better if EBL meticulously scrutinizes its credit and advances proposal before granting amount.
- HBL has the highest credit risk ratio than others, which might have jeopardized its credit and advances management. Thus, it would be better if HBL grants credit and advances in secured sector only.
- Also, to compete with the other sampled banks, NABIL should increase the pace of its credit and advances growth, and should grant loan in most returnable sector only.
- Although the majority of the respondents have stated that there is no paper harassment, the bank should trace out the reasons behind the dissatisfaction and should try to minimize if any to have sound credit management.
- The bank should make the valuation of mortgage from related specialist and only grants credit if the evaluation is satisfactory.
- The bank should be consumer-oriented and should be prompt in making the evaluation, and granting credit and advances to meet the requirement of the customer.
- The bank should charge the appropriate interest rate to compete in the market and allure the customer toward it. Further, follow up and counseling should be done to ensure the return and principal amount granted.

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5. In your opinion, how many days should the bank take to disburse loan from the date of application received?
- i) 5-10 days                      ii) 10-20 days                      iii) Above 20 days

*(Please rank 1, 2, 3....., for Question No. 6 to 7)*

6. In your opinion which of the following is the main influencing factor in loan disbursement (Rank 1 for the most)?

- |                         |                          |
|-------------------------|--------------------------|
| i) Paper Document       | <input type="checkbox"/> |
| ii) Time Period         | <input type="checkbox"/> |
| iii) Employee Behavior  | <input type="checkbox"/> |
| iv) Interest Rate       | <input type="checkbox"/> |
| v) Collateral Valuation | <input type="checkbox"/> |

7. Which method should be followed as remedies in recovering loan?

- |                       |                          |
|-----------------------|--------------------------|
| i) Collateral         | <input type="checkbox"/> |
| ii) Guarantor         | <input type="checkbox"/> |
| iii) Counseling       | <input type="checkbox"/> |
| iv) Technical Support | <input type="checkbox"/> |
| v) Follow Up          | <input type="checkbox"/> |

8. What do you suggest the commercial bank for the effective credit management?

- |                               |                          |
|-------------------------------|--------------------------|
| i) Careful Evaluation         | <input type="checkbox"/> |
| ii) Appropriate Interest Rate | <input type="checkbox"/> |
| iii) Awareness on Consumer    | <input type="checkbox"/> |
| iv) Timely Collection         | <input type="checkbox"/> |

Thank You,

.....

**Hira Mani**

**Subedi**

**MBS**

Shanker Dev Campus

Tribhuvan Universit

## APPENDIX - II

### A) Calculation of major financial ratios of SCBNL related to the credit management

<b>FY</b>	<b>Total Cr.</b>	<b>Deposit</b>	<b>Ratio</b>	<b>IIC</b>	<b>TC</b>	<b>Ratio</b>	<b>IIC</b>	<b>II</b>	<b>Ratio</b>
2003/04	6693.86	21161.44	31.63	488.38	6693.86	7.30	488.38	1042.18	46.86
2004/05	8420.87	19363.47	43.49	508.39	8420.87	6.04	508.39	1058.68	48.02
2005/06	9206.28	23061.03	39.92	537.98	9206.28	5.84	537.98	1189.60	45.22
2006/07	10790.15	24647.02	43.78	665.16	10790.2	6.16	665.16	1411.98	47.11
2007/08	13963.98	29744.00	46.95	813.19	13964	5.82	813.19	1591.20	51.11
<b>Mean</b>			<b>41.15</b>			<b>6.23</b>			<b>47.66</b>
<b>S.D.</b>			<b>5.88</b>			<b>0.61</b>			<b>2.17</b>
<b>C.V.%</b>			<b>14.28</b>			<b>9.80</b>			<b>4.56</b>
<b>FY</b>	<b>NPC</b>	<b>TC</b>	<b>Ratio</b>	<b>NCA</b>	<b>TA</b>	<b>Ratio</b>	<b>NCA</b>	<b>CrA</b>	<b>Ratio</b>
2003/04	252.2	6693.86	3.77	6410.24	<b>23642.1</b>	27.11	6410.24	<b>23506</b>	27.27
2004/05	226.31	8420.87	2.69	8143.21	<b>21781.7</b>	37.39	8143.21	<b>21710</b>	37.51
2005/06	195.93	9206.28	2.13	8935.42	<b>25776.3</b>	34.67	8935.42	<b>25675</b>	34.80
2006/07	197.02	10790.15	1.83	10502.64	<b>28596.7</b>	36.73	10502.64	<b>28471</b>	36.89
2007/08	128.72	13963.98	0.92	13718.60	<b>33335.8</b>	41.15	13718.60	<b>33219</b>	41.30
<b>Mean</b>			<b>2.27</b>			<b>35.41</b>			<b>35.55</b>
<b>S.D.</b>			<b>1.05</b>			<b>5.20</b>			<b>5.19</b>
<b>C.V.%</b>			<b>46.55</b>			<b>14.67</b>			<b>14.60</b>
<b>FY</b>	<b>CLP</b>	<b>TC</b>	<b>Ratio</b>						
2003/04	283.62	6693.86	4.24						
2004/05	277.66	8420.87	3.30						
2005/06	270.86	9206.28	2.94						
2006/07	287.51	10790.15	2.66						
2007/08	245.38	13963.98	1.76						
<b>Mean</b>			<b>2.98</b>						
<b>S.D.</b>			<b>0.91</b>						
<b>C.V.%</b>			<b>30.38</b>						

*Source: Annual Reports*

**B) Calculation of major financial ratios of NABIL related to the credit management**

<b>FY</b>	<b>Total Cr.</b>	<b>Deposit</b>	<b>Ratio</b>	<b>IIC</b>	<b>TC</b>	<b>Ratio</b>	<b>IIC</b>	<b>II</b>	<b>Ratio</b>
2003/04	8548.65	14119.03	60.55	517.96	8548.65	6.06	517.96	1001.62	51.71
2004/05	10946.74	14586.61	75.05	560.47	10946.74	5.12	560.47	1068.75	52.44
2005/06	13278.78	19347.40	68.63	655.99	13278.78	4.94	655.99	1310.00	50.08
2006/07	15903.02	23342.29	68.13	789.39	15903.02	4.96	789.39	1587.76	49.72
2007/08	21759.46	31915.05	68.18	989.76	21759.46	4.55	989.76	1978.70	50.02
<b>Mean</b>			<b>68.11</b>			<b>5.13</b>			<b>50.79</b>
<b>S.D.</b>			<b>5.14</b>			<b>0.56</b>			<b>1.21</b>
<b>C.V.%</b>			<b>7.54</b>			<b>10.97</b>			<b>2.38</b>
<b>FY</b>	<b>NPC</b>	<b>TC</b>	<b>Ratio</b>	<b>NCA</b>	<b>TA</b>	<b>Ratio</b>	<b>NCA</b>	<b>CrA</b>	<b>Ratio</b>
2003/04	286.67	8548.65	3.35	8189.99	16745.48	48.91	8189.99	16407	49.92
2004/05	144.51	10946.74	1.32	10586.17	17064.08	62.04	10586.17	16703	63.38
2005/06	182.62	13278.78	1.38	12922.54	22329.97	57.87	12922.54	22011	58.71
2006/07	178.29	15903.02	1.12	15545.78	27253.39	57.04	15545.78	26967	57.65
2007/08	161.09	21759.46	0.74	21365.05	37132.76	57.54	21365.05	36535	58.48
<b>Mean</b>			<b>1.58</b>			<b>56.68</b>			<b>57.63</b>
<b>S.D.</b>			<b>1.02</b>			<b>4.78</b>			<b>4.86</b>
<b>C.V.%</b>			<b>64.54</b>			<b>8.43</b>			<b>8.43</b>
<b>FY</b>	<b>CLP</b>	<b>TC</b>	<b>Ratio</b>						
2003/04	358.66	8548.65	4.20						
2004/05	360.57	10946.74	3.29						
2005/06	356.24	13278.78	2.68						
2006/07	357.24	15903.02	2.25						
2007/08	394.41	21759.46	1.81						
<b>Mean</b>			<b>2.85</b>						
<b>S.D.</b>			<b>0.93</b>						
<b>C.V.%</b>			<b>32.75</b>						

*Source: Annual Reports*

**C) Calculation of major financial ratios of HBL related to the credit management**

<b>FY</b>	<b>Total Cr.</b>	<b>Deposit</b>	<b>Ratio</b>	<b>IIC</b>	<b>TC</b>	<b>Ratio</b>	<b>IIC</b>	<b>II</b>	<b>Ratio</b>
2003/04	12919.63	22010.33	58.70	767.04	12919.63	5.94	767.04	1245.90	61.57
2004/05	13451.17	24814.01	54.21	865.77	13451.17	6.44	865.77	1446.47	59.85
2005/06	15761.98	26490.85	59.50	896.82	15761.98	5.69	896.82	1626.47	55.14
2006/07	17793.72	30048.42	59.22	938.61	17793.72	5.27	938.61	1775.58	52.86
2007/08	20179.61	31842.79	63.37	1126.11	20179.61	5.58	1126.11	1963.65	57.35
<b>Mean</b>			<b>59.00</b>			<b>5.78</b>			<b>57.35</b>
<b>S.D.</b>			<b>3.26</b>			<b>0.44</b>			<b>3.50</b>
<b>C.V.%</b>			<b>5.52</b>			<b>7.53</b>			<b>6.11</b>
<b>FY</b>	<b>NPC</b>	<b>TC</b>	<b>Ratio</b>	<b>NCA</b>	<b>TA</b>	<b>Ratio</b>	<b>NCA</b>	<b>CrA</b>	<b>Ratio</b>
2003/04	1147.46	12919.63	8.88	11951.87	24762.02	48.27	11951.87	24462.4	48.86
2004/05	1001.35	13451.17	7.44	12424.52	27418.16	45.31	12424.52	27122.3	45.81
2005/06	1040.76	15761.98	6.60	14642.56	29460.39	49.70	14642.56	28919.6	50.63
2006/07	641.61	17793.72	3.61	16998.00	33519.14	50.71	16998.00	32945.1	51.59
2007/08	477.23	20179.61	2.36	19497.52	36175.53	53.90	19497.52	35449.5	55.00
<b>Mean</b>			<b>5.78</b>			<b>49.58</b>			<b>50.38</b>
<b>S.D.</b>			<b>2.71</b>			<b>3.16</b>			<b>3.39</b>
<b>C.V.%</b>			<b>46.95</b>			<b>6.37</b>			<b>6.74</b>
<b>FY</b>	<b>CLP</b>	<b>TC</b>	<b>Ratio</b>						
2003/04	967.76	12919.63	7.49						
2004/05	1026.65	13451.17	7.63						
2005/06	1119.42	15761.98	7.10						
2006/07	795.72	17793.72	4.47						
2007/08	682.09	20179.61	3.38						
<b>Mean</b>			<b>6.02</b>						
<b>S.D.</b>			<b>1.96</b>						
<b>C.V.%</b>			<b>32.51</b>						

*Source: Annual Reports*

**D) Calculation of major financial ratios of EBL related to the credit management**

<b>FY</b>	<b>Total Cr.</b>	<b>Deposit</b>	<b>Ratio</b>	<b>IIC</b>	<b>TC</b>	<b>Ratio</b>	<b>IIC</b>	<b>II</b>	<b>Ratio</b>
2003/04	6095.84	8063.90	75.59	308.26	6095.84	5.06	308.26	657.25	46.90
2004/05	7900.09	10097.69	78.24	388.74	7900.09	4.92	388.74	719.30	54.04
2005/06	10136.25	13802.44	73.44	459.17	10136.25	4.53	459.17	903.41	50.83
2006/07	14082.68	18186.25	77.44	584.48	14082.68	4.15	584.48	1144.41	51.07
2007/08	18836.43	23976.30	78.56	794.89	18836.43	4.22	794.89	1548.66	51.33
<b>Mean</b>			<b>76.65</b>			<b>4.58</b>			<b>50.83</b>
<b>S.D.</b>			<b>2.13</b>			<b>0.41</b>			<b>2.55</b>
<b>C.V.%</b>			<b>2.78</b>			<b>8.88</b>			<b>5.02</b>
<b>FY</b>	<b>NPC</b>	<b>TC</b>	<b>Ratio</b>	<b>NCA</b>	<b>TA</b>	<b>Ratio</b>	<b>NCA</b>	<b>CrA</b>	<b>Ratio</b>
2003/04	104.75	6095.84	1.72	5884.12	9608.57	61.24	5884.12	9490.2	62.00
2004/05	128.81	7900.09	1.63	7618.67	11732.52	64.94	7618.67	11598.5	65.69
2005/06	129.23	10136.25	1.27	9801.31	15959.29	61.41	9801.31	15807.2	62.01
2006/07	113.18	14082.68	0.80	13664.08	21432.57	63.75	13664.08	21262.5	64.26
2007/08	127.31	18836.43	0.68	18339.09	27149.35	67.55	18339.09	26788.8	68.46
<b>Mean</b>			<b>1.22</b>			<b>63.78</b>			<b>64.48</b>
<b>S.D.</b>			<b>0.47</b>			<b>2.63</b>			<b>2.72</b>
<b>C.V.%</b>			<b>38.63</b>			<b>4.12</b>			<b>4.22</b>
<b>FY</b>	<b>CLP</b>	<b>TC</b>	<b>Ratio</b>						
2003/04	211.72	6095.84	3.47						
2004/05	281.42	7900.09	3.56						
2005/06	334.94	10136.25	3.30						
2006/07	418.60	14082.68	2.97						
2007/08	497.34	18836.43	2.64						
<b>Mean</b>			<b>3.19</b>						
<b>S.D.</b>			<b>0.38</b>						
<b>C.V.%</b>			<b>11.95</b>						

*Source: Annual Reports*

## APPENDIX- III

### Calculation of correlation coefficient & regression line of net profit on Credit & Advances of SCBNL

Year	Credit X	NP Y	$x = X - \bar{X}$	$y = Y - \bar{Y}$	$x^2$	$y^2$
2002/03	6693.86	537.80	-3121.168	-110.88	9741690	12293.93
2003/04	8420.87	536.24	-1394.158	-112.44	1943677	12642.30
2004/05	9206.28	658.76	-608.748	10.08	370574	101.65
2005/06	10790.15	691.67	975.122	42.99	950863	1848.31
2006/07	13963.98	818.92	4148.952	170.24	17213803	28982.34
<b>Total</b>	<b>49075.14</b>	<b>3243.39</b>			<b>30220606</b>	<b>55868.53</b>

Source: Annual Reports of Respective Banks

i) Calculation of Mean

	For Credit		For Net Profit
Mean	$\bar{X} = \frac{\sum X}{5} = 9815.03$		$\bar{Y} = \frac{\sum Y}{5} = 648.68$

ii) Calculation of Correlation Coefficient between Credit and Net Profit

$$r_{xy} = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \frac{1244936.1}{\sqrt{1299377.12}} = 0.9581$$

iii) Calculation of Standard Deviation ( )

For Credit	$\sigma_x = \sqrt{\frac{\sum (x-x)^2}{N}} = \sqrt{\frac{30220606}{4}} = 2748.66$		For Net Profit	$\sigma_y = \sqrt{\frac{\sum (y-y)^2}{N}} = \sqrt{\frac{55868.53}{5}} = 118.18$
------------	--	--	----------------	---

iv) Simple Regression Equation of Net Profit on Credit and Advances of SCBNL

$$Y - \bar{Y} = r \frac{\sigma_y}{\sigma_x} (X - \bar{X})$$

or,  $Y - 648.68 = \frac{0.9581 \times 118.18}{2748.66} (X - 9815.03)$

or,  $Y - 648.68 = 0.04 X - 404.33$

$$\text{or, } Y = 244.35 + 0.04 X$$

*Note: same process has been followed to calculate the correlation coefficient and regression line of net profit on credit and advances of other banks.*

## APPENDIX – IV

### a) Calculation of Multiple Correlation Coefficient of Net Profit (NP) on Total Deposit (TD) and Credit and Advances (CA)

Let the correlation coefficient between NP and TD be denoted by  $R_{12}$ , TD and CA be denoted by  $R_{23}$  and NP and CA be denoted by  $R_{13}$  and the multiple correlation coefficient on NP on TD and CA be denoted by  $R_{1.23}$ .

$$R_{1.23} = \sqrt{\frac{r_{12}^2 + r_{13}^2 - 2 r_{12} r_{23} r_{13}}{1 - r_{23}^2}}$$

$$R_{NP.TD CA} (SCBNL) = \sqrt{\frac{(0.9764)^2 + (0.9581)^2 - 2 \times 0.9764 \times 0.9247 \times 0.9581}{1 - (0.9247)^2}}$$

$$= \sqrt{\frac{0.9534 + 0.9180 - 1.7301}{0.2689}}$$

$$= \sqrt{\frac{0.1412}{0.2689}}$$

$$= \sqrt{0.5253}$$

$$= 0.7247$$

$$R_{NP.TD CA} (NABIL) = \sqrt{\frac{(0.9369)^2 + (0.9545)^2 - 2 \times 0.9369 \times 0.9894 \times 0.9545}{1 - (0.9894)^2}}$$

$$= \sqrt{\frac{0.8778 + 0.9111 - 1.7696}{0.0417}}$$

$$= \sqrt{\frac{0.0193}{0.0417}}$$

$$= \sqrt{0.4617}$$

$$= 0.6795$$

$$\begin{aligned}
R_{NP.TD CA} (HBL) &= \sqrt{\frac{(0.9579)^2 + (0.9861)^2 - 2 \times 0.9579 \times 0.9748 \times 0.9861}{1 - (0.9748)^2}} \\
&= \sqrt{\frac{0.9176 + 0.9724 - 1.8416}{0.0971}} \\
&= \sqrt{\frac{0.0484}{0.0971}} \\
&= \sqrt{0.4987} \\
&= 0.7062
\end{aligned}$$

$$\begin{aligned}
R_{NP.TD CA} (EBL) &= \sqrt{\frac{(0.9899)^2 + (0.9902)^2 - 2 \times 0.9899 \times 0.9986 \times 0.9902}{1 - (0.9986)^2}} \\
&= \sqrt{\frac{0.9799 + 0.9805 - 1.9577}{0.0056}} \\
&= \sqrt{\frac{0.0027}{0.0056}} \\
&= \sqrt{0.4911} \\
&= 0.7008
\end{aligned}$$

**b) Calculation of Multiple Regression Equation of NP on TD and CA of SCBNL**

Let NP, TD and CA are denoted by  $X_1$ ,  $X_2$  and  $X_3$  respectively. Then the multiple regression equation of NP( $X_1$ ) on TD( $X_2$ ) and CA( $X_3$ ) be;

$$X_1 = a_1 + b_1 X_2 + b_2 X_3 \dots\dots\dots (i)$$

The values of constant  $a_1$ ,  $b_1$  and  $b_2$  can be determined by solving following three normal equations simultaneously.

$$X_1 = na_1 + b_1 \sum X_2 + b_2 \sum X_3 \dots\dots\dots (ii)$$

$$\sum X_1 X_2 = a_1 \sum X_2 + b_1 \sum X_2^2 + b_2 \sum X_2 X_3 \dots\dots\dots (iii)$$

$$\sum X_1 X_3 = a_1 \sum X_3 + b_1 \sum X_2 X_3 + b_2 \sum X_3^2 \dots\dots\dots (iv)$$

$X_1$	$X_2$	$X_3$	$X_1 X_2$	$X_2 X_3$	$X_3 X_1$	$X_2^2$	$X_3^2$
537.80	21161.44	6693.86	11380622.43	141651716.76	3599957.91	447806542.87	44807761.70
536.24	19363.47	8420.87	10383467.15	163057263.62	4515607.33	374943970.44	70911051.56
658.76	23061.03	9206.28	15191684.12	212306299.27	6064729.01	531811104.66	84755591.44
691.67	24647.02	10790.15	17047604.32	265945042.85	7463223.05	607475594.88	116427337.02
818.92	29744.00	13963.98	24357956.48	415344621.12	11435382.50	884705536.00	194992737.44
<b><math>\sum X_1 =</math> 3243.39</b>	<b><math>\sum X_2 =</math> 117976.96</b>	<b><math>\sum X_3 =</math> 49075.14</b>	<b><math>\sum X_1 X_2 =</math> 78361335</b>	<b><math>\sum X_2 X_3 =</math> 1198304944</b>	<b><math>\sum X_3 X_1 =</math> 33078900</b>	<b><math>\sum X_2^2 =</math> 2846742749</b>	<b><math>\sum X_3^2 =</math> 511894479</b>

Substituting the sum values in normal equation, we get

$$3243.39 = 5 a_1 + 117976.96 b_1 + 49075.14 b_2 \dots\dots\dots (v)$$

$$\text{or, } 78361335 = 117976.96 a_1 + 2846742749 b_1 + 1198304944 b_2 \dots\dots\dots (vi)$$

$$\text{or, } 33078900 = 49075.14 a_1 + 1198304944 b_1 + 511894479 b_2 \dots\dots\dots (vii)$$

Multiplying (v) by 117976.96 and (vi) by 5 and then subtracting (v) from (vi), we get

$$\begin{aligned} 391806673 &= 589885 a_1 + 14233713744 b_1 + 5991524718 b_2 \\ 382645292 &= 589885 a_1 + 13918563091 b_1 + 5789735829 b_2 \\ \hline \end{aligned}$$

$$\text{or, } 9161380 = 315150653 b_1 + 201788889 b_2 \dots\dots\dots (viii)$$

Again multiplying (v) by 49075.14 and (vii) by 5 and then subtracting (v) from (vii), we get

$$\begin{aligned} 165394499 &= 245376 a_1 + 5991524718 b_1 + 2559472396 b_2 \\ 159169818 &= 245376 a_1 + 5789735829 b_1 + 2408369366 b_2 \end{aligned}$$

$$\text{or, } 6224681 = 201788889 + b_1 + 151103030 b_2 \dots\dots\dots (ix)$$

Again multiplying (viii) by 201788889 and (ix) by 315150653 and then subtracting (viii) from (ix), we get,

$$\begin{array}{rcll} 1961712184970240 & = & 63593900325321200 & b_1 + \\ 47620218568197000 b_2 & & & \\ \hline 1848664747416390 & = & 63593900325321200 & b_1 + \\ 40718755852635800 b_2 & & & \end{array}$$

$$\text{or, } 113047437553850 = 6901462715561280 b_2$$

$$\begin{aligned} \text{or, } b_2 &= \frac{113047437553850}{6901462715561280} \\ &= 0.02 \end{aligned}$$

Substituting the value of  $b_2$  in equation ix, we get

$$6224681 = 201788889 b_1 + 151103030 \times 0.02$$

$$\text{or, } 6224681 = 201788889 b_1 + 2475100$$

$$\text{or, } 3749581 = 201788889 b_1$$

$$\begin{aligned} \text{or, } b_1 &= \frac{3749581}{201788889} \\ &= 0.02 \end{aligned}$$

Again substituting the value of  $b_1$  and  $b_2$  in equation v, we get

$$3243.39 = 5 a_1 + 117976.96 \times 0.02 + 49075.14 \times 0.02$$

$$\text{or, } 3243.39 = 5 a_1 + 2996.07$$

$$\text{or, } 247.32 = 5 a_1$$

$$\begin{aligned} \text{or, } a_1 &= \frac{247.32}{5} \\ &= 49.46 \end{aligned}$$

Now substituting the values of  $a_1$ ,  $b_1$  and  $b_2$  in (i), we get multiple regression equation of NP( $X_1$ ) on TD( $X_2$ ) and CA( $X_3$ );

$$X_1 = -3251.09 - 17.47 X_2 + 86.77 X_3$$

$$\text{i.e. NP} = -3251.09 - 17.47 \text{ TD} + 86.77 \text{ CA}$$

*Same process has been practiced to find out the multiple regression equation of NP on TD and CA of other banks.*

## **APPENDIX- V**

**Calculation of Trend value of Credit and Advances of SCBNL**

Year	Year X	Credit Y	$x = X - \bar{X}$	$y = Y - \bar{Y}$	$x^2$	$y^2$
2002/03	1	6693.86	-2	-3121.17	4	974
2003/04	2	8420.87	-1	-1394.16	1	194
2004/05	3	9206.28	0	-608.75	0	37
2005/06	4	10790.15	1	975.12	1	95
2006/07	5	13963.98	2	4148.95	4	1721
<b>Total</b>	<b>15</b>	<b>49075.14</b>			<b>10</b>	<b>3022</b>

Source: Annual Reports of Respective Banks

i) Calculation of Mean

$$\begin{array}{l} \text{For Year} \\ \text{Mean } \bar{X} = \frac{\sum X}{N} = \frac{15}{5} = 3.00 \end{array} \qquad \begin{array}{l} \text{For Credit} \\ \bar{Y} = \frac{\sum Y}{N} = \frac{49075.14}{5} = 9815.03 \end{array}$$

ii) Calculation of Correlation Coefficient between Year and Credit

$$r_{xy} = \frac{\sum (x \cdot y)}{\sqrt{\sum x^2 \cdot \sum y^2}} = \frac{16909.52}{\sqrt{10 \cdot 17384.07}} = 0.9727$$

iii) Calculation of Standard Deviation ( )

$$\begin{array}{l} \text{For Year} \\ \sigma_x = \sqrt{\frac{\sum (x - \bar{x})^2}{N}} = \sqrt{\frac{10}{5}} = 1.58 \end{array} \qquad \begin{array}{l} \text{For Credit} \\ \sigma_y = \sqrt{\frac{\sum (y - \bar{y})^2}{N}} = \sqrt{\frac{2748.66}{5}} = 2748.66 \end{array}$$

iv) Calculation of Coefficient of Variance (C.V.)

$$\begin{array}{l} \text{For Year} \\ \text{C.V.} = \frac{\sigma_x}{\bar{X}} \times 100 = \frac{1.58}{3.00} \times 100 = 52.70 \end{array} \qquad \begin{array}{l} \text{For Credit} \\ \text{C.V.} = \frac{\sigma_y}{\bar{Y}} \times 100 = \frac{2748.66}{9815.03} \times 100 = 28.01 \end{array}$$

v) Simple Regression Equation of Credit on Year of SCBNL

$$Y - \bar{Y} = r \frac{\sigma_y}{\sigma_x} (X - \bar{X})$$

$$= 0.9727 \times \frac{2748.66}{1.58} (X - 3)$$

or,  $Y - 9815.03$

$1.58$

or,  $Y - 9815.03 =$

$1690.95 X - 5072.86$

or,  $Y$

$=$

$4742.17 + 1690.95 X$

vi) Calculation of trend value of credit and advances

FY	a	b	x	$Y = a + bx$
2008/09	4742.17	1690.95	6	14887.88
2009/10	4742.17	1690.95	7	16578.84

*Note: same process has been followed to estimate the value of credit and advances in other banks.*