A STUDY ON LIQUIDITY MANAGEMENT OF SCBNL AND NABIL

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RECOMMENDATION

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has been prepared as approved by this Department in the prescribed format of Faculty of Management. This thesis is forwarded for examination.

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DECLARATION

I hereby, declare that the work reported in this thesis entitled **"A Study on Liquidity Management of SCBNL and NABIL"** submitted to Central Department of Management, University Campus, T.U., Kirtipur is my original piece of done in the form of partial fulfilment of the requirement for the Master's Degree in Business studies under the supervision and guidance of Dr.Gopi Nath Regmi Central Department of Management.

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ABBREVIATIONS

AD	:	Anno Dominie
ATM	:	Automatic Teller Machine
BS	:	Bikram Sambat
CAs	:	Current Assets
CB	:	Cash and Bank Balance
CL	:	Current Liability
CRR	:	Cash Reserve Ratio
CV	:	Coefficient of Variance
DCBL	:	Development Credit Bank
DDC	:	Dairy Development Corporation
DR	:	Debt Ratio
EBIT	:	Earnings Before Interest and Tax
EBL	:	Everest Bank Ltd.
EPF	:	Employee Provident Fund
FSRP	:	Financial Sector Reform Program
FY	:	Fiscal year
HCCL	:	Himal cement Company Ltd.
IDBI	:	Industrial Development Bank of
JVB	:	Joint Venture Bank
KTM	:	Kathmandu
MSS	:	Mean sum of square
NABIL	:	Nabil Bank Limited
NABIL	:	Nepal Arab Bank Ltd.
NBBL	:	Nepal Bangladesh Bank Ltd.
NBCL	:	Nepal Battery Company Ltd.
NBL	:	Nepal Bank Ltd.
NEPSE	:	Nepal Stock Exchange
NIBL	:	Nepal Investment Bank Ltd
NLL	:	Nepal Lever Ltd.
NPAT	:	Net Profit after Tax
NRB	:	Nepal Rastra Bank
NSCL	:	Nepal Co-operative Society Ltd.
NTC	:	Nepal Telecommunication
PEs	:	Public Enterprises
QA	:	Quick Assets
QR	:	Quick Ratio
RBS	:	Rastriya Beema Sansthan
ROA	:	Return on Assets

ROE	:	Return on Equity
S.E.	:	Standard Error
SCBNL	:	Standard Charted Bank Nepal Limited
SD	:	Standard Deviation
SDR	:	Saving Deposit Ratio
Ss	:	Sum of squares
TAs	:	Total Assets
Td	:	Total debt
TD	:	Total Deposit
TU	:	Tribhuban University
WC	:	Working Capital

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

Economic status of Nepalese is far from developed and rapid developing countries. The significant development of the country is possible when it reinforces in upgrading the economic condition. For this, development in agriculture sector alone is not sufficient, industrial and financial sector also should be promoted. Financial, industrial and agricultural sector are economic pillars of any country.

Nepal, officially the Federal Democratic Republic of Nepal, is a landlocked sovereign state located in South Asia. It is located in the Himalayas and bordered to the north by the People's Republic of China, and to the south, east, and west by the Republic of India. With an area of 147,181 square kilometers (56,827 sq mi) and a population of approximately 30 million, Nepal is the world's 93rd largest country by land and the 41st most populous country. Kathmandu is the nation's capital and the country's largest metropolis. (About.com:http://en.wikipedia.org). Nepal has a rich geography. The mountainous north has eight of the world's ten tallest mountains, including the highest point on Earth, Mount Everest, called *Sagarmatha* in Nepali. It contains more than 240 peaks over 20,000 ft (6,096 m) above sea level. The fertile and humid south is heavily urbanized. (About.com:http://en.wikipedia.org)

Most of Nepalese have traditional agriculture as a profession. Economic status of Nepalese is far from developed and rapid developing countries. The real development of the country is possible when it reinforces in upgrading the economic condition. For this, development in agriculture sector alone is not sufficient, industrial and financial sector also should be promoted. Financial, industrial and agricultural sector are economic pillars of any country. Therefore, the rapid development of these sectors leads increment in economic class of people of the nation. The real development of economic sector require sufficient level of flow of capital. Only matured financial sector are able to maintain such level of flow of capital. Commercial banks are key player of financial industry, which occupy an important place in capital formation in economy of nation. Through deposits they collect, they provide much needed capital for the development of industry, trade and business and other deficit sectors, and ultimately they contribute to the economic growth of the nation.

Bankers manage portfolio of assets and liabilities and the accompanying information flows. The key portfolio risks of bank are credit risk, interest risk and Liquidity risk. Out of these risks, Liquidity risk is very important thing. Liquidity is the availability of liquidity in the amount and at the and at the management of any bank is ensuring adequate Liquidity. Banks need Liquidity for two basic reasons (I) to fulfill customer's loan demand and (II) to meet deposit withdrawal. A bank is considered to be liquid if it has ready access to immediately spend funds at a reasonable cost of accurately the time those funds are needed. This suggests that a liquid bank either has the right amount of instantly spend able funds on hand when they are required or can quickly raise liquid funds by borrowing or by selling assets.

Liquidity management is most important part of banking system, because will be liquidate if it fails maintain liquidity. Many banks assume that liquid funds can be borrowed virtually without limit any time they are needed. Therefore, they see little need to store Liquidity in the form of easily marketed, stable-price assets. The enormous liquidity shortage experienced in recent years by banks in trouble make clear that Liquidity needs cannot be ignored.

1.2 Evaluation of Bank

The evaluation of bank is not a non-phenomenon. There was crude firm of banking evening an ancient Vedic era. The terms banking such as deposits, pledge, policy of loan, interest rates etc can be found in the "Manusmiriti"

The Roman Empire collapses in the last of 15^{th} century and beginning of 16^{th} century. Consequently, commercial banking transaction was received because of revival of commercial and other trading activities in European countries. According to the opinion of great economist Geoffrey Crowther, following community groups are the ancestors of modern banking.

I. The merchant trader

II. The goldsmith

III. The money lenders

History tells us that it was the merchant banker who first evolved the system of banking by trading in commodities than money. Their trading activities required the

remittance of money from one place to another for this they issued different documents as the near substitutes of money, called draft of hundis in modern days.

The next stage in the growth of banking was the goldsmith; the business of goldsmith was such that he had to take deposits such as bullion, money and amendments for the security from theft. This makes possible to the goldsmith to charge something for taking care of the money and bullion. On the other hand, as the evidence of receiving valuables, he used to issue a receipt to the depositors. As such receipts are good for payment equipment to the amount mentioned, it become like the modern cheque, as a medium of exchange and a means of payments.

Finally, moneylender in the early ago contributed in the growth of banking to a lager extent. He advances the coins on load by charging interest. As a safe guard he use to keep some money in the reserve. Therefore goldsmith, moneylender became a banker who started performing the two function of and advancing loans. “The bank of Venice” of Italy was established in 1157 A. D. as first banking institution in the world. The second banking institution namely, ‘The bank of Barcelona’ of Spain was established in 1401 A.D. Its function is to exchange money, receive deposits and discount bill of exchange, both for the citizens and for the foreigner. During 1407 A.D. The Bank of Genon was established in 1609 A.D. “The Bank of England” was incorporated in 1694 A.D. as a joint stock bank and later on the 1844 A.D. It becomes a first central bank in the world.

1.3 Profile of Concerned Banks

In this section general introduction of the banks under study is being attempted to furnish for the easy reference of the samples to the research.

1.3.1 Nabil Bank Ltd.

“Nabil Bank Limited” the first commercial bank was incorporated in 1984. Dubai Bank Ltd. was the initial joint venture partner with 80% equity investment .The shares owned by Dubai bank Ltd. (DBl) were transferred to Emirates Bank International Ltd. (EBIL) Dubai. Later on EBIL sold its entire stock to National Bank Ltd, Bangladesh (NBLB). National Bank Ltd. Bangladesh is managing the bank in accordance with the technical services agreement signed between it (NABIL) and the bank on June 1995.

The present configuration consist of 50% share capital of National Bank limited, Bangladesh.10% of NIDC, 9.66% of Rastriya Bema Sansthan, 0.34% of Nepal stock exchange and 30% of Nepalese public. At present 17 branches of the bank are operating in different parts of the country. Authorized capital and paid up capital of Nabil bank limited are Rs.500 million and Rs. 491.6544 million.

The following Activities and services are provides by NABIl including normal functions;

- Tele Banking
- Credit card facilities
- SWIFT
- Deposit Locker
- Western Union money Transfer
- ATM
- International Trade and Bank Guarantee.

This Bank is awarded by "Bank of year 2004".

1.3.2 Introduction of SCBNL

Standard Chartered Bank Nepal Limited (SCBNL), formerly known as Nepal Grindlays Bank Limited has its head office in Kathmandu and has been operation since 1987. It is a joint venture operation, registered in Nepal, with 50 percent of the shares held by Standard Chartered Grindlays Bank, 33 percent by Nepal Bank Limited, the country's oldest and largest financial institution and 17 percent by Nepalese public.

On 31 July 2000, Standard Chartered Bank concluded the acquisition of ANZ Grindlays Bank Limited from the Australia and New Zealand Banking Group Limited. With this acquisition, 50 percent share of Nepal Grindlays Bank Limited (NGBL) previously owned by ANG Grindlays Bank Ltd. leading to the name change of the bank to Standard Chartered Bank Nepal Limited with effect from 16 July 2001. The following Activities and services are provided by SCBNL including normal functions;

- Tele Banking
- Credit card facilities
- SWIFT

- Deposit Locker
- NTC's Mobile bill payment
- ATM
- E-Banking
- Mobile Banking
- International Trade and Bank Guarantee.

1.4 Statement of Problem

Financial sector more competitive than it had ever been. The fast growth in number of financial institutions has made pro-rata increment in collecting deposits and their investment. They collected adequate amount from the mass, however they could not find or locate stable investment sectors required to mobilize their funds. Only few commercial banks are able to explore stable investment opportunities. Some banks are incurring losses in early establishment years: it is not that they do not have potential clients or adequate deposits but they cannot find profitable sectors or opportunities to invest the deposit collections. They have always feared high degree of risk and uncertainty.

There are various problems in resources mobilization by financial institution in Nepal. The most important problem is poor investment climate prevailing in Nepal due to heavy regulatory procedure uncertain government policy, NRB's directives, unsecured climate etc. Lack of sound investment policy is another reason for a commercial bank not to properly utilizing its deposits that is making loan and advances or lending for a profitable project. This condition will lead the commercial bank to the position of liquidation.

Commercial banks invest their funds in limited areas to achieve highest amount of profit. They are found to more interested in investment in less risky and highly liquid sectors i.e. treasury bills, development bonds and other securities. These practices of commercial bank seem less risky and supportive to maintain high liquidity position. But in other hand these practices reduce chances of profit and investment opportunities.

The problems specially related to Liquidity functions of this research have been present briefly as under.

1. Whether the bank allocates the liquidity efficiency in bank operation or not?
2. To what extent is it to predict Liquidity?

3. Do these banks have given a minimum level of satisfaction to its stakeholders?
4. What is the impact of Liquidity on banking transactions?
5. Whether the financial performance of these banks are sound or not?

1.5 Objectives of the study

Each and every of the research study possess a certain objective. Research without any specific objectives will be worthless. This research study entitled "A Study on Liquidity Management of Commercial Banks of Nepal with Special Reference to NABIL and SCBNL" highlights to attempt the following objectives.

- To examine and critically analyze the liquidity management practices of NABIL and SCBNL.
- To know the various ratios NABIL and SCBNL
- To evaluate its major significance from findings of the study.
- To make comparative study of profitability position of NABIL and SCBNL.
- To examine relationship of liquidity with profitability of selected banks.
- To offer suitable suggestions based on findings of this study.

1.6 Focus & Significance of the Study

The main focus of the study is to highlight the Liquidity policies of commercial banks expecting that the study can be bridge the gap between deposits and investment policies. On the other hand, the study would provide information to management of the bank that would help them to take collective action. Further from the study the shareholders would get information to make decision while making investment on shares of various banks.

In the context of Nepal there is less availability of research work. Journal and articles in liquidity management of commercial banks as well as other financial institution. As it is a well known fact that the success and prosperity of the bank relies heavily upon the successful management of liquidity. Successful formulation and effective implementation of liquidity policy is the one of the major requirement for the successful performance of commercial banks.

There are various problems in effective liquidity management of commercial banks of Nepal, which affect their performance to the great extent. CBs performance does not seem so

satisfactory in terms of utilizing its resource efficiently in productive sectors. Hence the main significance of this study of liquidity management analysis of Nepalese commercial banks is to help how to maintain the effective liquidity policy that insures maximum return through generating sufficient level of investable fund. Similarly, the study of commercial banks liquidity management trend, level of liquidity and investable fund, and effect on investment decision on earning will strive to disclose the internal weakness of the banks and furnish the ideas for improvement. Therefore, the researcher has undertaken this study to analyze the liquidity management of Nepalese commercial banks and point out the various weaknesses of defects inherent in it and provide package of suggestions for its improvement.

1.7 Limitations of the study

This study is simply a partial study for the fulfillment of MBS degree, which has to be finished within limited period. Hence, this study is not far from several limitations of its own kind, which weaken the heart of the study.

Some of such limitations are as follows.

i) The study is mainly based on secondary data collected from different sources.
ii) The study period is covered by only five fiscal years (i.e. from 2007/2008 to 2011/12).
iii) Out of the numerous affecting factors, this study concentrates only on those factors, which are related with Liquidity policy and management, and available in the form required for analyzing the different issues.
iv) Due to wide range of data deficiencies only simple technique have been used for the analysis of the data.
v) The study deals with only two commercial banks. And other commercial banks have not been accounted.

1.8 Organization of the Study

The whole study has been divided into six chapters. First is introduction chapter, which includes general background, statement of the problem, focus & signification of the study, objectives of the study and limitations of the study and chapter plan.

Second chapter deals with the review of available literatures in the field of the study being conducted. This includes review of the theories of the concerned topic, review of supportive text, review of books, review of bulletins and annual reports published by bank, review of related articles and review of previous thesis.

Third chapter explains the research methodology employed to conduct the study and tools and techniques used in analysis of the data as well. This chapter includes, research design, sources of data, population and samples, method of data analysis, various financial and statistical tools.

Fourth chapter is devoted to the presentation and analysis of data through definite course of research methodology. The main working of this chapter is to analyze different financial ratios related to the investment and fund mobilization of NABIL in comparison to the NIBL & SBI. Major findings of the study are also included in this chapter.

Fifth is the last chapter of the study, which provides summary and conclusion, suggestions and recommendations for improving the future performance of the sample banks.

Besides these, bibliography and appendices will also present at the end of the thesis. Similarly, acknowledgements, table of contents, list of tables, list of figures, abbreviations are included in the front part of the thesis report.

CHAPTER –II

REVIEW OF LITERATURE

This chapter deals with the theoretical aspect of the topic on investment policy in more detail and descriptive manner. It provides the foundation for developing a comprehensive theoretical framework and knowledge of the status relevant to the field of research in order to explore the relevant and true facts for the reporting purpose. Hence, in this chapter, the focus has been made on the review of literature relevant to the investment policy of commercial banks. For this study, different books, journals, articles, annual reports and some research paper related with this topic has been reviewed. For this purpose, chapter has been mainly two sections, viz. theoretical perspective and review of related studies

1. Review of supportive text
2. Review of previous study
    a) Review of Books
    b) Review of Articles Research papers
    c) Review of Thesis

2.1 Conceptual Review

In this section related material and text of Liquidity management has been examined in detail.

2.1.1 Liquidity Management

Liquidity is the oil that lubricates the wheels of business. Without adequate oil machines grind to a halt, and a business with inadequate liquidity will do the same. However carrying liquidity is expensive because liquidity is a non-earning asset. A firm that holds liquidity beyond its minimum requirement lowers its earning potential.

Liquidity is most important for the operation of the business house. It is the basic input needed to keep the business running in a continuous basis. The term liquidity includes coins, currency and cheque held by the firm and balances in its bank account. Sometimes near liquidity items, such as marketable securities or bank deposits are also included in liquidity.

The firm should keep sufficient liquidity, neither more nor less. Liquidity balances reduce the rate of return on equity and hence the value of the firm's stock. So, liquidity is maintained in optimum level, which maximizes the value of the firm.

Managing the liquidity is most challenging and important task of financial manager in any types of organization. Financial manager should maintain the ratio of liquidity inflows and outflows rationally for ensuring the smooth operation of the organization without any interruption. The financial manager has to determine how much liquidity is needed on hand at any time to ensure normal business operation.

Therefore, for its smooth running and maximum profitability, proper and effective liquidity management in business is of paramount importance. So, the management of current assets and current liabilities of the business is necessary for day-to-day operation. It is concerned with the decision regarding the short-term funds influencing overall profitability and risk involving in the firm. Management of liquidity has been regarded as one of the important factors in the decision-making. Liquidity management is a professionally.

2.1.2 Motive for Holding Liquidity

The firm holds liquidity for various motives, they are:

1. Transaction Motives

The principal motive for holding liquidity is to conduct day-to-day operations. A liquidity balance is associated with routine payments and collections like: payments of purchases, labor, taxes, and dividends etc. likewise, in the course of daily business transactions, liquidity are generated from sales of goods or services, return on outside investment etc.

2. Precautionary Motives

Liquidity is also held in reserve for unforeseen fluctuation in liquidity inflow and outflow. Like flood, strike, inefficiency in collection of debtors, cancellation of order failure of important customers, sharp increase in cost of raw materials etc.

3. Speculative Motives

A liquidity balance that is held to enable the firm to purchase arises for raw material at a reduced price on payment purchasing at favorable price.

4. Compensating Balance/Compensative Motives

The liquidity balance that a firm must have to maintain with a bank, to compensate the bank for services rendered or for granting a loan. Firm often maintains bank balance in excess of transactions needs as a means of compensating for the various services. These balance are called compensating balance. The bank provides various services to the firm like; payment of check, credit, loan etc.

2.1.3 Different Techniques of Liquidity Management

1) Liquidity Budget

The liquidity budget shows the firm's projected liquidity inflows and outflows over some specified period. It is most significant device to plan and control liquidity receipt and payment. It provides much more detailed information concerning firm future liquidity flows. It is the most important tools for managing liquidity. It is useful in determining the timing of when liquidity surplus and shortage. Plans can then, be made to borrow to cover shortages and to invest surpluses.

2) Liquidity Planning

Liquidity panning can help anticipate future liquidity flows and needs of the firm and reduces the possibility of idle liquidity. Liquidity planning is a technique to plan and control the use of liquidity. The forecasts may be based on the present operation or anticipated future operation. Liquidity plan are very crucial in developing the overall operation plans of the firms. Liquidity planning may be done on daily, weekly or monthly basis. It depends upon the size of the firm and philosophy of management.

3) Long-term Liquidity Forecasting

Long-term liquidity forecasting are prepared to give an idea of the company's financial requirement of future. Once a company has developed long term liquidity forecast, it can be used to evaluate the impact of new product development on the firm financials condition for three, five or more years in future. The major uses of long-term liquidity forecast are company’s future financial needs, especially for its working capital requirement, to evaluate

proposed capital projects and it helps to improve corporate planning. Long term liquidity forecasting not only reflects more accuracy of the impact of any recent acquisitions but also foreshadow financing problems..

4) Short-term Liquidity Forecasting

There are two common methods of short-term liquidity forecasting which is mostly used, that are as follows:

a) Receipt and Disbursement Forecasting

The prime aim of receipt and disbursement forecasts is to summarize these flows during a predetermined period. In case of those companies where liquidity items of income and expenses involve flow of liquidity. This method is favored to keep a close control over liquidity.

b) Adjusted Net Income Method

This method of liquidity forecasting involves the tracing of working capital flows. Sometime, it is also called the sources and uses approach. Two objectives of this method are; to project the company's need for liquidity at some future data and to show whether the company can generate this money internally or not.

2.1.4 Determining the Optimum Liquidity Balance

Out of total requirement the level of liquidity and marketable securities to be maintained is the crucial question, which needs careful analysis of the behavior of liquidity inflows and outflows. Since the liquidity inflows and outflow may not synchronize all the time, the liquidity balance often fluctuates and as a result the balance could be some times more and sometimes less than necessary. It is therefore necessary to adopt a system to correct such fluctuations and maintain and optimal balance all the time.

Liquidity is the most sensible and crucial aspect of banks. The financial manager should have adequate knowledge of surrounding environment for proper management of Liquidity portion of a bank. S/he should also be foresighted and able to predict future demand and supply of liquidity. Though the liquidity is most liquid assets, it is not thought good to hold large quantity of liquidity, because liquidity involves high cost. If

firm maintains less liquidity balance more than it needs, the firm may lose many opportunities. But it is difficult to know how much liquidity should organization hold. However, any organization makes holding policy and exercise to keep liquidity as less as it can. The financial manger should determine the appropriate amounts of liquidity balance, a trade-off balance, and if not, its liquidity position becomes weak and it suffers from shortage of liquidity to make payment. But investing released funds in some profitable opportunities can attain a higher profitability. If the firm maintains a high level of liquidity balance it will have a sound liquidity position but forego the opportunity to earn interests. Thus, the firm should maintain an optimum liquidity balance. To find out the optimum liquidity balance the transaction costs should be matched with the opportunity costs. The figure shows this trade-off graphically.

Several models have been developed and being used by business firm to determine liquidity balance and ways to transfer fund from liquidity to marketable securities when the balance exceeds the requirement and from marketable securities to liquidity when the balance slides down below the minimum need. The models are:

2.1.4.1 Optimum Liquidity Balance under Certainty; Baumol's Model

In view of minimizing the opportunity cost of holding liquidity and maximizing the return on the available funds, the liquidity balance should be maintained at a minimum level and the fund which is not required for immediate use be invested in the marketable securities. Baumol model is one of the methods that can be used for this purpose. Baumol model is based on the assumption that;

1) The firm is able to forecasts its liquidity needs with certainty.
2) The firm's liquidity payment occurs uniformly over a period of firm.
3) The opportunity cost of holding liquidity is known and it does not change over time.
4) The firm will incur the same transaction cost whenever it converts securities to liquidity.

Under this Model Optional Liquidity Conversion size $C^* = \sqrt{\frac{2bt}{i}}$

Where,

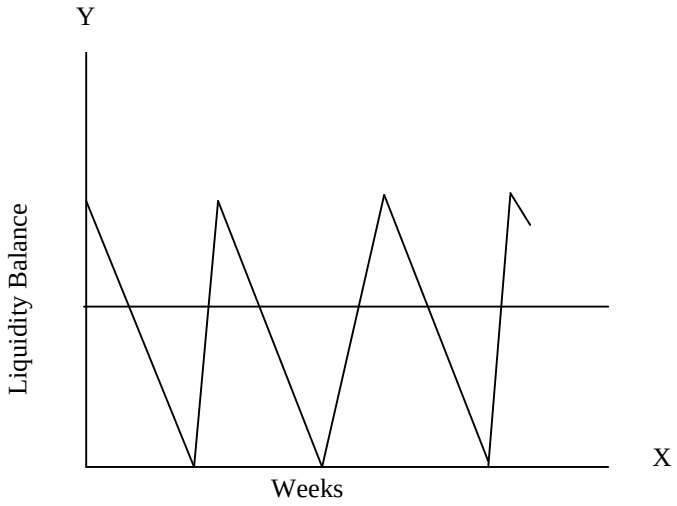
b = Fixed transaction cost per transaction

T = total liquidity need over the period

I = opportunity cost period

C^* = Optimal liquidity conversion size

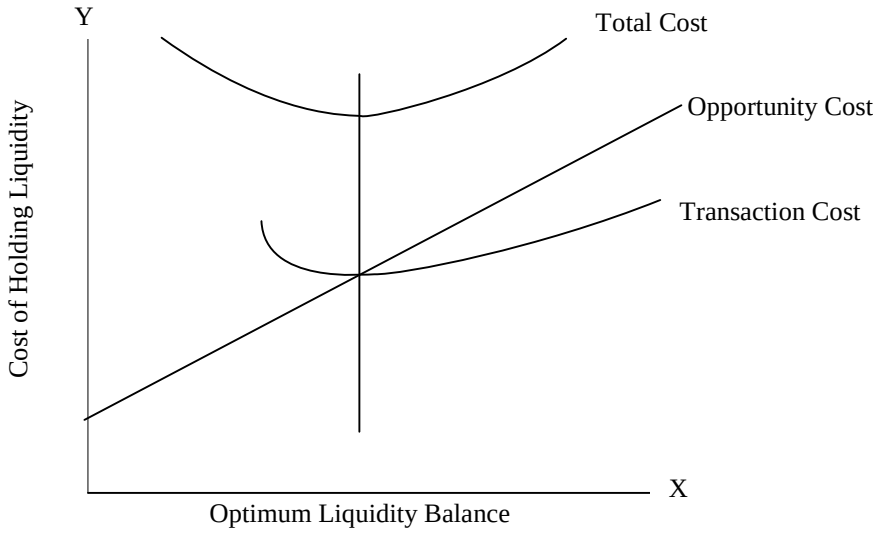
Figure 2.1 Baumol's Model for Liquidity Balance



Given its assumption, the model prescribes an optimal size of liquidity balance and the optimal size of account of borrowing. What matter for a firm is the total of opportunity cost and the transaction cost? Therefore, the objective of this model is to minimize the total cost.

The figure below shows the relationship between the average size of liquidity balance and various costs associated with liquidity maintenance.

Figure 2.2 Relationship between average size of liquidity balance & liquidity maintenance



2.1.4.2 Optimum Liquidity Balance under Uncertainty; The Miller – Orr Model

The limitation of the Baumol model is that it does not allow the liquidity flows to fluctuate. Firms in practice do not use their liquidity balance uniformly nor are they able to predict daily liquidity inflows and outflow. The Miller-Orr Model liquidity flow variation (Miller.,1966:413). It assumes that net liquidity flows are normally distributed with a zero value of mean and a standard deviation. As shown in figure below, the miller-Orr Model provides for two controls limits - the upper control limits - the upper control limit as well as lower control limit and return point. If the firm's liquidity flows fluctuate randomly and hit the upper limit, then it buys sufficient marketable securities to come back to a normal level of liquidity balance (the return point). Similarly, when the firm's liquidity flows wander and hit the lower limit, it sells sufficient marketable securities to bring the liquidity balance back to the normal level (the return point). (Miller., 1966:413,435)

Under this model return point (Z) $X3\sqrt{\frac{3b\pm^{2}}{4i}}$

Where,

b = Fixed transaction cost per transaction

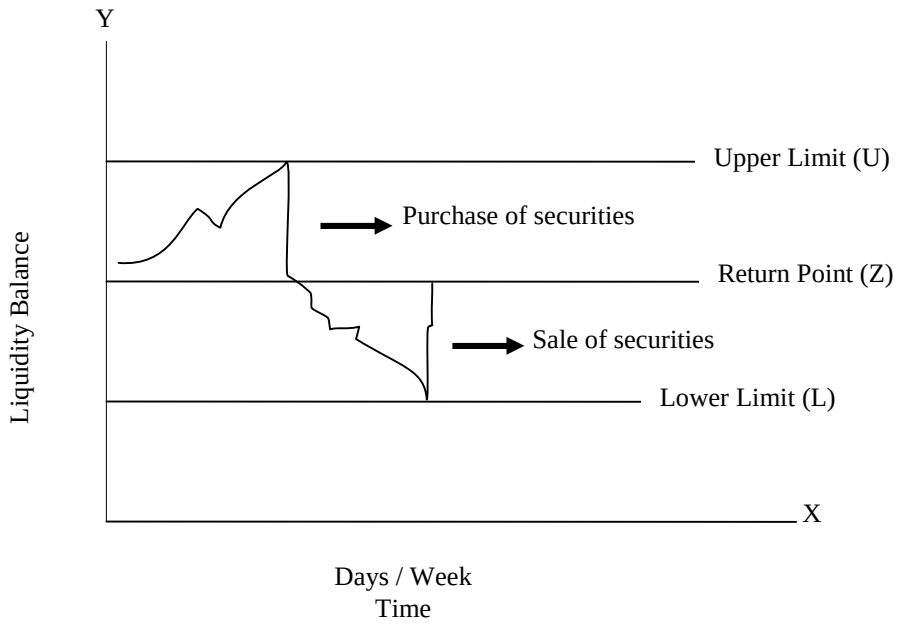
∃ = Variance of daily weakly liquidity flow

I = Dally/weakly interest rate on marketable securities

Z = Collection return point

L = Minimum liquidity balance

Figure 2.3 Miller-Orr model



2.1.5 Factors Influencing Bank's Liquidity

a) External Environment Factors:

i) Prevailing interest rate of bank: if interest rate is high demand is low & liquidity need is low.

ii) Saving & investment situation: if income & saving scale of people is high, less liquidity. If investment in commercial field is high, high liquidity.

iii) Growth & scheming position of the financial market: if opposite, high liquidity.

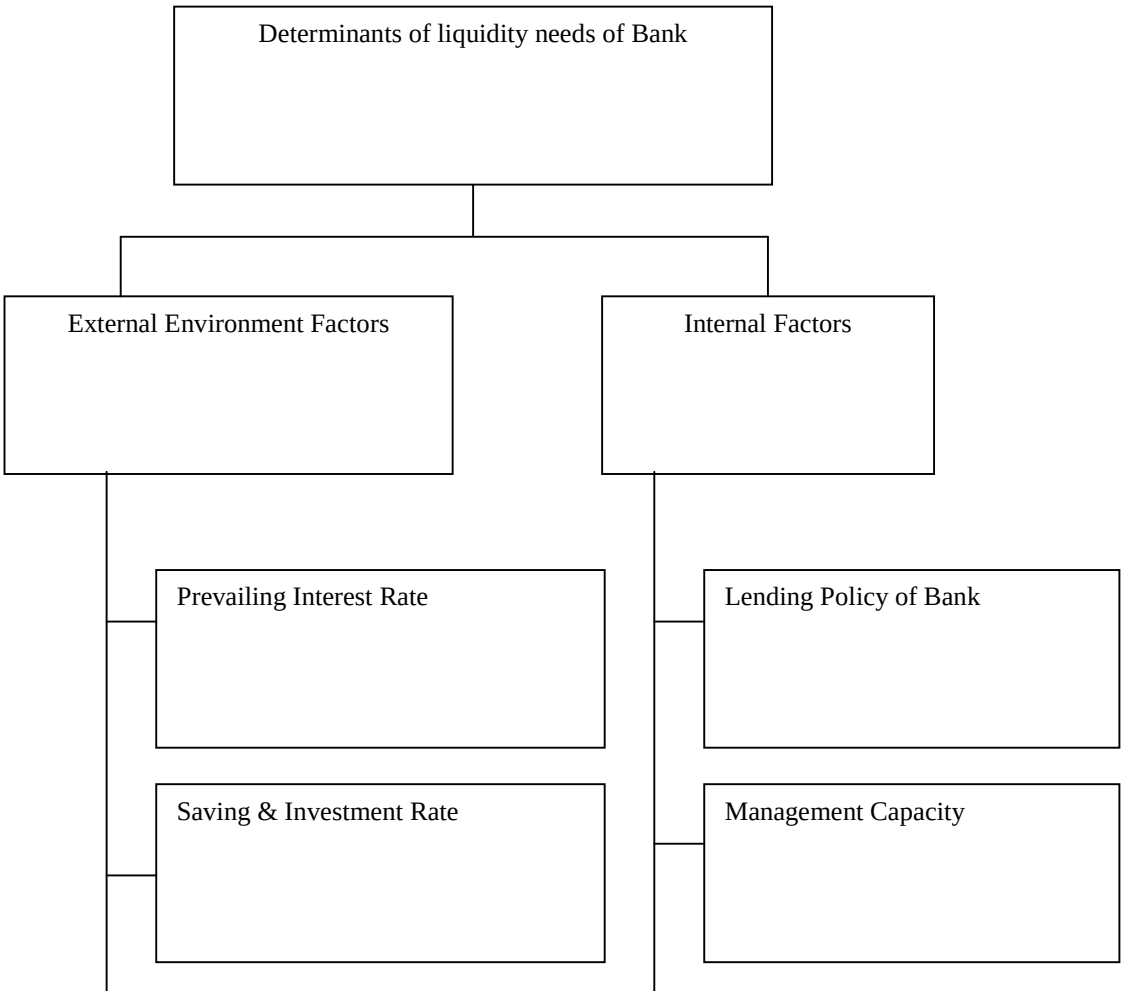
b) Internal Factors:

i) Lending policy of bank: Great quantity for long-term investment needs high liquidity. If short-term loan policy, low liquidity.

ii) Management capacity: If management is efficient & ready to bear risk, low liquidity is needed.

iii) Strategic planning & funds flow situation: Liquidity depends upon planning & strategy. Current A/C needs high liquidity & payment for fixed deposit needs low liquidity.

Figure 2.4 Determinants of Liquidity Needs of Bank



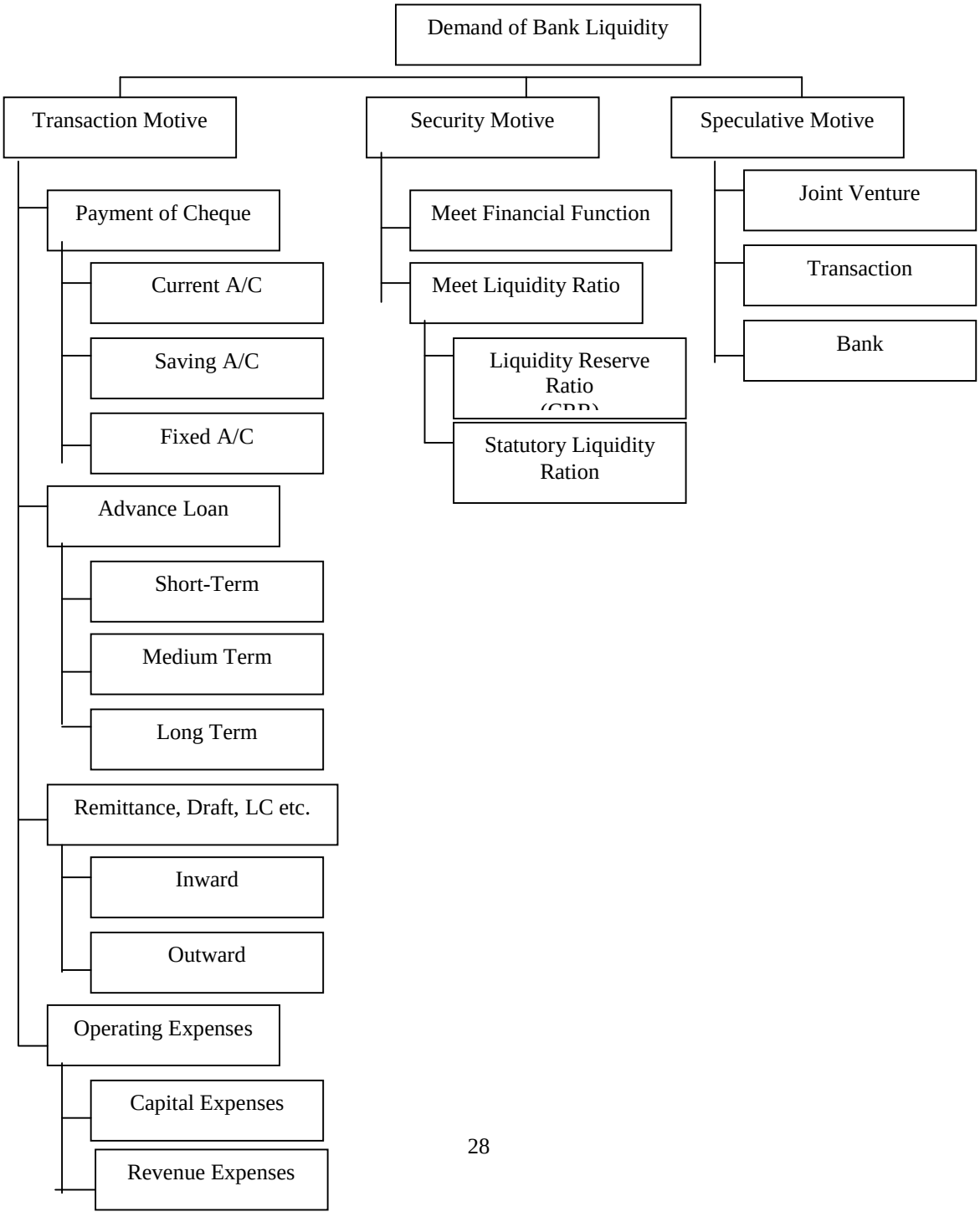
Demand & supply of Bank Liquidity: Liquidity at bank and investment, which can be changed into liquidity immediately, is liquidity is maintained at bank by current saving & fixed deposit collection, specially, to grant loan and to pay creditors & account holders demand. Generally, banks need liquidity for maintaining following goals.

i) Bank Liquidity for transaction motive

ii) Bank liquidity for security motive

iii) Speculative motive

Figure 2.5 Motives for bank's Liquidity Need



2.2 Review of Previous Studies

In this section past study on liquidity management have been reviewed.

2.2.1 Review of Books

In this section an attempt was made to review some of the books on financial management, which deals with the management of liquidity.

Weston, J.F. and Brigham, E.F. (2003), the book entitled, "*Managerial Finance"* have given some theoretical insight into the liquidity management after their various studies. The bond conceptual findings of their studies provide sound knowledge and guidance for the future studies in the field of management. They explain in the beginning, the motivates for holding liquidity flows, expending collection and cheque clearing, using float, cost of liquidity management determining the minimum liquidity balance, compensating balance overdraft system liquidity management, management of account receivable credit policy, evaluating changes in credit policy.

In the book entitled "*Financial Management*" written by M. Khan and P.K. Jain (1981), liquidity management is one of key areas of "working capital management". Apart from the fact that it is the most liquid current assets, which can be reduced because the other major liquid assets i.e., receivable and inventory get eventually converted in liquidity. This underlines the significances of liquidity management.

Pradhan R.S. (2004), Book entitled, "*Financial Management*" have given some theoretical insight into the liquidity management after the various studies on it. In his word "the liquidity management aims at reducing the amount of liquidity hold to the minimum necessary to conduct business". He has described the various aspect of liquidity management which are as follow; significance of liquidity management, motives for holding liquidity, function of liquidity management, advantage of adequate liquidity, liquidity forecasting and budgeting liquidity management techniques and the determinant of the optimum liquidity balance. He states that any firm hold the liquidity with transaction motive, precautionary motive and speculative motive and the liquidity management techniques generally consist is of speculative motive and the liquidity management techniques generally consist of accelerating collections, controlling disbursements and synchronizing liquidity flows. The technique that be used to speed up collection are (a) concentration banking and (b) lock box system. Liquidity management techniques are generally concerned with accelerating collection and slowing down disbursements. Firms can reduce their liquidity by holding marketable securities, which can be sold on short notice at close to their quote price.

In the book written by Pokharel Dr. B.B. & Gautam, U.R.J. (2010) entitled, "*Fundamentals of Financial Management*" have given some conceptual ingredients. An attempt should be made to accelerate collections and handle disbursement so that maximum liquidity is available. Collection liquidity is accelerated by means of concentration banking, a lock box system and other specific pick plans. A firm can reduce its liquidity balance by adopting quicker mechanism of transferring fund. The optimal level of liquidity depends upon the predictability of future liquidity flows, their volatility, fixed cost of security transaction and the carrying cost of holding liquidity; that is interest rate foregone and marketable securities.

2.2.2 Review of Articles (Journals)

In this section an attempt was made to review some book on financial management, which deals with the management of liquidity.

The well-known professors Weston and Brigham have given some theoretical insight into the liquidity management after their various studies. The bond conceptual findings of their studies provide sound knowledge and guidance for the future studies in the field of management. They explain in the beginning, the motivates for holding liquidity flows, expending collection and cheque clearing, using float, cost of liquidity management determining the minimum liquidity balance, compensating balance overdraft system liquidity management, management of account receivable credit policy, evaluating changes in credit policy.

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The well-known professor Dr. Radhe S. Pradhan has given some theoretical insight into the liquidity management after the various studies on it. In the word of Dr. Pradhan "the liquidity management aims at reducing the amount of liquidity hold to the minimum necessary to conduct business". He has described the various aspect of liquidity management which are as follow; significance of liquidity management, motives for holding liquidity, function of liquidity management, advantage of adequate liquidity, liquidity forecasting and budgeting liquidity management techniques and the

determinant of the optimum liquidity balance. He states that any firm hold the liquidity with transaction motive, precautionary motive and speculative motive and the liquidity management techniques generally consist is of speculative motive and the liquidity management techniques generally consist of accelerating collections, controlling disbursements and synchronizing liquidity flows. The technique that be used to speed up collection are (a) concentration banking and (b) lock box system. Liquidity management techniques are generally concerned with accelerating collection and slowing down disbursements. Firms can reduce their liquidity by holding marketable securities, which can be sold on short notice at close to their quote price.

For the liquidity management, Dr. Bihari Binod Pokharel and Mr. Ujwal Raj Gautam (2004) in their book"Fundamental of Financial Management have given some conceptual ingredients. An attempt should be made to accelerate collections and handle disbursement so that maximum liquidity is available. Collection liquidity is accelerated by means of concentration banking, a lock box system and other specific pick plans. A firm can reduce its liquidity balance by adopting quicker mechanism of transferring fund. The optimal level of liquidity depends upon the predictability of future liquidity flows, their volatility, fixed cost of security transaction and the carrying cost of holding liquidity; that is interest rate foregone and marketable securities.

Professor DR. Shrestha (2005) has published an article titled "Working Capital Management in Public Enterprises. He has studied the working capital management of ten selected public enterprises (PE's). He has especially focused on the liquidity, turnover and profitability position of those enterprises. In this analysis, it was found that four PE's had failed to maintain desirable liquidity position. On the otherr side, two PE's had negative working capital turnover, four had adequate turnover, and one had higher turnover on net working capital. He has also found that out of ten PE's six were operating in losses while only four were getting some percentage of profit. With the reference of his findings, he has brought certain policy issues such as lack of suitable financial planning, negligence of working capital management, deviation between liquidity and turnover of assets and liability to show the positive relationship between turnover and return on net working capital. At end, he had made some suggestive measures to overcome from the above policy issues i.e. identification of needed funds, regular check of accounts, development of management information system, positive attitude towards risk and profit and determination right of combination of short term and long term sources of funds to finance working capital.

Pradhan and Koirala (1998) jointly conducted a study on, "Working Capital Position of selected Corporations of Nepal". For the study they selected five manufacturing & six non-manufacturing enterprises. The study was concentrated on the size of investment, trend of investment; need to control the investment in current asset management. Published articles had used only primary data and distributed 200 questionnaires. The topic of the article was "Some reflection on working capital management in Nepalese corporation". The study has concluded that inventory management was of great significant in manufacturing corporations and the management of liquidity and receivables was of great significance in non-manufacturing corporations, both working in fixed capital was found to be difficult to manage in Manufacturing Corporation but in service organizations working capital was found to be more difficult to manage as compared to fixed capital and the major reason for holding inventory is to facilitate smooth operations of production and sales.

Investment in total assets had declined over a period in both In another articles, published by Dr. Acharya,(1985) had raised two major problems –operational problems and organizational problems regarding the working capital management in Nepalese PE's have been described the operational problems, According to Dr. Acharya, listed in the first part, are increased of current liability then current assets, not allowing the current ratio 2:1 and slow turnover of inventory. Similarly, change in working capital in relation to fixed capital had very low impact over the profitability, and then transmutation of capital employed to sales, absence of management information system, break even analysis, funds flow analysis and ratio analysis were either undone or ineffective for performance evaluation. Finally the study points monitoring or the proper functioning of working capital management has never been considered a managerial jobs. In the second part, Dr Acharya has listed the organizational problems in the PE's .In most of the PE's there is a lack of regular internal and external audit system as well as evaluation of financial results. Similarly, while a very few PE's have been able to present their capital requirements, functioning of finance department is known satisfactory and some PE's are even facing the underutilization of capacity .to make and efficient use of funds for minimizing the risks of loss and to attend profit objectives, he has made some suggestions. For example, PE's should avoid the system of crisis decision which prevailed frequently in the operations, avoid fictitious holding of assets, the finance staff should be acquainted with the modern scientific tools used for the presentation and analysis of the data .Dr Acharya has also suggested optimizing

level of investment at appoint in time. Neither over nor under investment in working capital desired by the management of an enterprises because of these situation will erode the efficiency of the concern.

Mr Acharya (2000) chartered accountant, has suggested utilizing NTC funds rather than accepting high interest bearing the loans for capital investment, since the rate of earning in liquid fund is less than the rate of interest it pays for loans. Mr Acharya in another articles has again suggested utilizing its internal resources. He writes, it has become possible to maximize profit utilizing internal resources with minimum cost in other hand, liquidation position of the corporations is accurate as it keeps capacity to pay off whole debt at once circumstances so required. Keeping in view, the increasing service, it can be expected that the further profitability trend will get improve further more in comparison to current trend provided the revenue structure from national and international service remain within a ascertain limit at unchanged tariff situation.

2.2.3 Review of Related Thesis

Various research works have been done by MBA and MBS students in different aspects of banking such as financial performance, working capital management etc. studies and reviews on working capital management of other organization and their conclusion are very relevant to my study. Some reviewed previous theses are as follows.

Kalpana Dhakal (2000) made "a comparative study on working capital management of Nepal Bangladesh Bank Ltd. and Everest Bank Ltd." considering the financial statement of both banks for the period of five years from fiscal year 1994/95 to 1999/2000. She used ratio analysis as financial tool and trend analysis, correlation coefficient and test of hypothesis as a statistical tool to analysis the significant relationship between the variables. She concluded that average liquidity & bank balance and government securities percentage are higher in EBL than NBBL. The networking capitals of banks are negative and both banks are unable to maintain adequate liquidity position to meet the short-term obligations. The current ratio of both banks below the normal standard 2:1, however, the liquidity position of EBL is slightly better than NBBL. The NBBL is utilizing its funds whereas EBL is utilizing more fixed deposits. The average profitability ration of NBBL is higher than that of EBL but due the lack of proper management, strong marketing and strategic development the profitability of NBBL is going to decrease rapidly. The research has suggested the management of both as follows:

Gadtaula (1993) Submitted a thesis "working capital of Nepal Tea Development Corporation (NTDC)" He analyzed the financial statement of the corporation for 10 years from 1982/83 to 1991/92 by using different financial and statistical tools. He used ratio analysis, trend analysis, fund flow analysis, standard deviations, coefficient of variations and regression analysis and test of hypothesis as the tools of analysis. The major findings of his study were.The company had higher percentage of current assets in total assets that denoted greater liquidity of the firm and lower risk of technical insolvency, current asset to sales ratio was not constant in every year, increasing position of sundry debtors indicated slack position of the sales with accumulation of inventories and the company had a significant positive correlation between working capital and total assets and working capital and net sales.

Based on the findings, he recommended that inventory should be well managed and inventory budgets should be fixed on the basis of actual requirement, inventory norms and its demand. Liquidity position should be maintained to lead the firm from minimum current liabilities to maximum sales. He also suggested the NTDC management for effective sales promotion (i.e., advertisement campaigns). Sound labor and personnel management and to determine its liquidity holding structure to the operational needs.

Sharma (1999) has done a research on "A study on working capital management of Nepal Battery Co. Ltd". He was concerned with working capital management of NBCL by analyzing various ration of the period of five years. He used secondary data of balance sheet and profit and loss a/c of the company from 1994 to 1998. The main objectives of his study are to analyze the liquidity composition of working capital. Assets utilization and profitability position of NBCL and to study the relationship between sales and different variables of working capital of NBCL. The researcher has concluded major component of working capital are liquidity and bank balance, account receivables, inventory and misc. current assets and inventory holds large portion of currents asset. The proportion of current asset of TA & FA is increasing. It indicates that investment in current asset is high with respect to its total assets and fixed assets, inventory to total asset ratio shows fluctuation trend and receivable to total assets position show increasing trend. The turnover position is in fluctuating trend and receivable conversion period and inventory conversion period is long which is unfavorable for the company and values of current and quick ratios are found nearly equal to standard. Inefficiency in operation can be seen through wide difference between gross profit margin and net profit margin and high level of operating ratio.

Study has suggested the company reduce the inventory level. He recommends about receivable conversion period, which is necessary to reduce with concerning sales volume

because reeducation of this period may effect on sales volume. Lastly, he mentions about operation cost, which must be reduce in proper way so that in and maximize is profitability and shareholders return.

Thapa (2004) has conducted his study on" Liquidity Management practices before and after financial sector reform program in Nepal Bank Ltd." The objective of the study was comparatively examined and analysis the liquidity position and liquidity management practices in Nepal Bank Ltd. before and after financial sector reform program on liquidity position of the bank. The study has made conclusion that average liquidity and bank balance and loan and advances percentages is higher in NBL before FSRP than after FSRP, fixed deposit to total deposit ratio of NBL before and after FSRP is always decreasing trend and the turnover ratios of NBL before FSRP have decreasing trend.

Rajendra Giri (2004) has conducted his study on "Working Capital Management A Case Study of Balaju Textile Industry Ltd" with the major objectives of to point out the need to control in liquidity type of liquidity over a period of time and to know the nature of financing liquidity or not and to check if there is the variability of inventory over the period of time. The major findings of the study were; there is extremely low utilization of plant capacity and lack of efficient management of the corporation, which has caused to bear losses for the company, there has operational inefficiency and very poor liquidity position decreasing year after year and all the findings indicate the poor performance of corporation.

Subedi, (2006) has conducted his study on" Cash Management of selected Nepalese Manufacturing company" with major objective of examining cash management practices of manufacturing company in Nepalese context. The study concluded that inventory holds the largest portion of the total assets followed by miscellaneous current assets, liquidity and bank balance and sundry debtors respectively, the liquidity position of the company is in increasing trend and satisfactory, there is not proper utilization of current assets but inventory turnover is in increasing trend and it looks better during the study period and the profitability position of the company is in continuously increasing trend. It is satisfactory. To conclude, he stated satisfactory working capital management.

Gautam (2005) one a comparative study entitled comparative study of "working management of Nepal Investment Bank Limited and Nabil Bank Ltd." with major objective of examining the working capital management practices in both company and comparing the result. the major findings of the study were; both banks have to increase the current assets to maintain the normal standard of current ratio, average liquidity and bank with respect to current asset and total assets is increasing year after year during his study period and liquidity

and bank balance holds largest amount of idle liquidity balance and large portion of long-term debt is used in current assets of both bank but relatively it is higher on NIBL than NABIL. Banks follow conservative working capital policy but NBL has more conservative working capital policy, risk of insolvency is lesser but cost of fund is higher on NIBL than NABIL.

Shrestha, (2008) has carried out his research on "A study of Cash management of joint venture bank" the main objective of study was to analyze the current assets and current liabilities and their impact and relationship to each other. The study concluded that liquidity & bank balance holds the part of current viz. liquidity and bank balance, inventories and receivables, there is increasing trend in liquidity and decreasing trend in current assets turnover of both banks, average liquidity and bank with respect to current asset and total assets is increasing year after year during his study period and liquidity and bank balance holds largest amount of idle liquidity balance of both bank, inventory to current assets ratios shows decreasing trend but it has improved later. Similarly, inventory to TAs ratio shows fluctuating trend. There is no consistency in inventory balance, liquidity position of the company shows increasing trend and excessive quick ratio indicates excessive investment in liquid quick assets of the company and due to lack of definite credit and collection policy, receivable has increased year after year.

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KC (2000) one a comparative study entitled comparative study of working capital management of Nepal Bank Limited and Nepal Arab Bank Ltd. the major findings of his study were: the major components of current assets in NBL and NABIL are liquidity, bank

balance, loan advances and government securities, out of the major three currents assets components, liquidity and bank balance holds the smallest portion in NBL. In the other hand, government securities hold the smallest portion in NABIL. The interest income of NBL was better than NABIL and the trend of quick ration, liquidity and bank balance to deposit ration, and liquidity and bank balance to current margin and other deposit ration of NBL and NABIL are decreasing. The liquidity position of NBL was always better than NABIL.

Based on his findings, he has recommended that NBL should reduce or replace its fixed deposits by collecting higher amount of short-term deposits. NBL as well as NABIL should give proper attention on collection of over-dated loan and advance and utilization of idle fund as loan and advances. NBL should reduce its cost through reducing high cost deposit, and operate in a proper way so that it can have least operation cost which further maximize its profitability and maximize shareholder return. Both banks should adopt the matching working capital management policy instead of adoption conservative working capital management policy instead of adoption conservative working capital policy.

Gadtaula (2009) submitted a thesis "Working Capital of Nepal Tea Development Corporation (NTDC)". He analyzed the financial statement of the corporation for 10 years from 1999/2000 to 2008/09 by using different financial and statistical tools. He used ratio analysis, trend analysis, fund flow analysis, standard deviations, coefficient of variations and regression analysis and test of hypothesis as the tools of analysis. The main objective of the study was to analyze financial ratios, sales turnover, and trend analysis of ratios and profit of the company. The study concluded that the company had higher percentage of current assets in total assets that denoted greater liquidity of the firm and lower risk of technical insolvency, current asset to sales ratio was not constant in every year, increasing position of sundry debtors indicated slack position of the sales with accumulation of inventories, the company had a significant positive correlation between working capital and total assets and working capital and net sales, the company inventory constituted the most important and largest elements of working capital and net working capital turnover ratio of the company was lower indicating the inefficient utilization of working capital.

Based on the findings, he recommended that inventory should be well managed and inventory budgets should be fixed on the basis of actual requirement, inventory norms and its demand. Liquidity position should be maintained to lead the firm from minimum current liabilities to maximum sales. He also suggested the NTDC management for effective sales promotion (i.e., advertisement campaigns). Sound labor and personnel management and to determine its liquidity holding structure to the operational needs.

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Maharjan (2011) has conducted thesis entitled "A Study on Financial Performance of NABIL" with major objective is to measure liquidity, leverage, activity, profitability, market ratios and ownership ratio of the Bank. The research concluded that the bank has average current ratio is 0.7897 times with average growth rate of 0.399%. Normally, current ratio 2:1 is suggested, but it differs with nature and scope of business organization. In case of bank it is require to be 1:1, bank has never reached this standard in study period and average ratio is below standard. But average positive growth rate suggests that it is moving toward to standard slowly, therefore, the conclusion has been drawn that bank's current ratio is in below standard but it is in progressive path, average cash and bank to current liabilities ratio is 0.0571 times and average growth rate is 16.6708%. It shows heavy fluctuate trend during study period; it means NABIL is unable to maintain constant rate of liquid assets with respect to current liabilities. We, therefore, considered it as not good performance of NABIL. The ratio has 16.6708% of which give light to draw conclusion that bank has is increasing liquidity over the five year period, average loans and advances to current assets ratio is 0.8296 and average growth rate is 1.4204%. Form these the conclusion has been drawn that the current asset NABIL has covers more than 4/5 in average by loans and advances and it is in increasing trend over the study period and average Fixed Deposit to total Deposit ratio is 0.0108 and the average growth rate is 25.5875%. It shows clear growth trend in five year period. The average fixed deposit to total deposit tells that NABIL is able to collect average

10.8% percentage of core deposit over the periods. Clear increasing trend and positive average growth rate of fixed deposit to total deposit ratio clearly tell that bank is able to increase the percentage of fixed deposit in total deposit composition. Higher fixed gives leverage in financial activities therefore, growth rate of ratio is considered as good performance.

Tamrakar (2011), in her Master's thesis titled, "Liquidity and Credit Management Practices of Commercial Banks in Nepal". The objective of the study was the comparative study of Nepal Investment Bank and NIC Bank. The specific objectives of the study were to analyze the trend of liquid assets maintained by the commercial banks, to evaluate the cash reserve ratio maintained by the selected banks, to analyze the credits and advances provided by the commercial banks and to find out strengths and weaknesses in credit administrations of the selected banks. This study made three major conclusions. Firstly, trend of liquid assets maintained by banks shows NIBL in a better position than NIC. The increasing regression equation of NIBL forecasts a steady increase in the volume of liquid assets maintained by the bank, while a decreasing trend equation of NIC forecasts the decrease in the liquid assets. The downhill projection of NIC may suggest its inability to generate sufficient cash to remain liquid and to maintain the yearly obligations. Secondly, the relationship between total credit and total deposit shows highly significant positive correlation. This indicates that total deposit has increased with the increase in the total credit provided by the commercial banks, thus, strengthening their credit and liquidity position. Finally, the relationship between total credit and total non-performing loans shows a negative and insignificant correlation coefficient. This negative correlation indicates that the two variables are moving in opposite directions. Their insignificance reflects that the volume of credit provided does not necessarily result in the increase in non-performing loans. The increase in non-performing loans may be related to the decrease in total credit provided. However, it may also be due to other factors.

Poudel (2012), in his Master's thesis titled, "Comparative Study of Liquidity Management of Commercial Banks". The main objective of his study was to analyze and examine the liquidity position of Kumari Bank Limited and NABIl Bank Limited i.e. management of individual current assets like cash and bank balance. The study concluded that it is found that liquidity management practices still in developing phase. Most of the banks have maintained liquid funds to fulfill the statutory provision only. Since, NRN has to threaten to commercial banks to maintain liquidity; it observed that the commercial banks are found less sincere to liquidity management. Commercial banks have maintained liquidity

measuring tools like liquidity profile analysis by force not willingly. From this condition, it is exposed that the commercial banks are not taking it easily but they feeling it as a saddle. It should be taken positively and implemented compulsorily by commercial banks for the betterment of liquidity management, banks credibility and safely for depositor's amount.

2.3 Research Gap

The objective of research work is quite different from the studies made by other. The researcher focuses in this study on effectiveness of liquidity management of Nepal Development Bank Ltd and Development Credit Bank Ltd. Financial tools and statistical tools are used in this study as ratios analysis, trend analysis, correlation coefficient and test of Hypothesis.

There are various research conducted on working capital management of commercial bank but no study has been yet conducted on the topic of liquidity management. Both banks are the major bank of the country having good market share and its liquidity and investment activities has significant impact on the national economy. Hence, this study will fulfill the prevailing research gap about in depth analysis of the liquidity management and also fruitful to these interested person, parties, scholars, professor, students, businessman and government for academically as well as policy perspective.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

Research is common parlance refers to a search for knowledge. The Webster International Dictionary gives a very inclusive definition of research as "a careful critical inquiry or examination in seeking facts and principles; diligent investigation in order to ascertain something. (Saravanavel, 1990)

Research Methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher, studying his research problem among with the logic behind them. This chapter looks into the research design, nature and sources of data, data collection procedure and tools & technique of analysis.

Research methodology helps us to find out accuracy, validity and suitability. The justification on the present study cannot be obtained without help of proper research methodology. For the purpose of achieving the objectives of study the applied methodology are used. The research methodology used in the present study is briefly mentioned below.

3.2 Research Design

A research design is the arrangement of condition for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Descriptive and exploratory research designs have been used to this study.

3.3 Population and Sample

There are altogether 30 commercial banks functioning all over the Republic of Nepal and most of their stocks are traded actively in the stock market. In this study, liquidity management of commercial banks has been analyzed.

From these populations NABIL and SCBNL have been selected by using judgment sampling

3.4 Variables

The research variables of the study are mainly related with the accounting statement of selected financial institution. Sales, expense, capacity utilization, profit and loss, manpower, capital expenditures and cash flows relating to long term and short-term period of financial institution, market growth of financial industry, security market return etc. are the main research variables of this study. Other variables are also used where it is necessary.

3.5 Sources of Data

There are two sources of data collection. The research is mostly based on secondary source of data but primary is data also taken to find fact with related sample. Adequate data are collected from secondary sources.

i) Primary Source

The primary data were collected from the concerned selected bank. The way of data collection is short discussion with officer level employees of the banks about the liquidity position of banks.

ii) Secondary Source

This refers to data that are already used and gathered by others. Secondary data are mostly used for this research purpose. So the major sources of secondary data are as follows

- Annual Report of select financial institution.
- Internet and webs.
- NRB directives.
- Economy survey of Government of Nepal and Ministry of finance.
- Newspaper, journals, articles and various magazines.
- Dissertation of Central Library of T. U.

3.6 Data Collection Procedure

Especially the Annual Report of NIBL and SCBNL and web site of selected institution are taken as main source of data collection for purpose of study. NRB publication such as economic report and bulletin, and banking and financial statistics are taken as source of data. Other main source is website of NRB and web site of Nepal share market. Most of the data and substance are obtain from above source.

3.7 Period Covered

Investment has two time dimensions, long-range and short range. Long range covered 5 years trends. Short-range period covered one. Long-range trends are taken FY 2007/08 to 2011/12 in NABIL and SCBNL. The actual details are taken the accounting record, annual progress report and other secondary sources.

3.8 Procedure

For the preparation of this research, seven steps are used. These steps are explained in below section.

Firstly, conception phase; for the appropriate topic, various interaction with friends, college library visit, net surfing was done. After making this effort the topic "Liquidity Management" was chosen.

Secondly, definition process; in the definition phase, certain vision to be carried out for research was developed, the description of the problems and the research topic were analyzed. After that, the aim of the research was listed out.

Thirdly, planning phase; planning is very important phase. In this phase, the methodology to gather information was developed, reference books and reports were collected and the overall work schedule was prepared. Appropriate bank for the topic was selected.

Fourthly, implementation phase; the real work started in this phase. The institution “NABIL and SCBNL" was visited and various types of liquidity sector were scrutinized. The effort made by the staff in liquidity section was observed. Finally, the annual financial reports of the institution were collected.

Finally, termination phase; the final assignment report was edited, printed and bended with a copy of collected information and then was submitted to the college.

As per above diagram, first of all the necessary data related with NABIL and SCBNL were collected from their own offices and official web sites. Collection of data consists of compiling useful information to quantify and analyze to ascertain the conclusion of the research. Then a thorough analysis of all the data collected was made. After that, necessary data were sorted and analyzed in a systematic manner.

Some financial and statistical tools have been applied to examine facts and descriptive analysis techniques have been adopted to evaluate effectiveness of credit policy of financial institution.

3.9 Tools Used For Data Analysis

Financial as well as the statistical tools were used to make the analysis more convenient, reliable and authentic. For data analysis, different items from the balance sheet and other statements were tabulated. Their ratios, percentages, mean, standard deviations and coefficient of variations were then calculated and presented in the tables. In order to ascertain financial position of a firm, various tools could be used. It is true that suitable appropriate tools, according to the nature of statement and data make the analysis more effective and significant. Collected data were managed, analyzed and presented in proper table and formats. These data were interpreted and explained whatever they are necessary. The following tools are used in this study:

3.9.1 Financial Tools

Financial ratios were used to ascertain the liquidity position of the firm. It established relationship between financial variables contained in the financial statement (i.e., balance sheet, profit and loss account and income statements). It helps the related parties to spot out the financial strength and weakness of the firm. There are several financial tools, which can be applied in order to analyze the liquidity position of banks. In this study the following financial tools are used.

3.9.1.1 Ratio Analysis

Ratio analysis is the most important financial tools available to analyze the liquidity position of banks. The ratios used in this study covered: Liquidity ratio, Activity Ratio and Profitability Ratio. Likewise, composition of working capital in terms of liquidity and bank balance percentage, loan and advances percentage, government securities percentage and miscellaneous current assets percentage were also used..

I) Liquidity Ratio

Liquidity ratio measures the firm’s ability to fulfill its short-term commitments. These ratios focus on current assets and current liabilities and used to ascertain the short-term solvency position of a firm.

In this context, liquidity is measured by the speed with a bank's assets that can be converted into liquidity to meet deposit withdrawals and current obligations. A bank is subject to have a minimum cash reserve requirement (CRR) imposed by Central Bank to ensure a minimum amount to total assets to meet unexpected withdrawals. The following ratios have been applied to find out liquidity position of the banks.

a. Liquidity Balance to Total Deposit Ratio

This ratio is calculated by dividing liquidity and bank balance by total deposits. Total deposits consist of current deposit, saving deposit, fixed deposit, money at call and short notice and other liabilities. This ratio shows the proportion of total deposits held as compared to the most liquid assets. High ratio shows the strong liquidity position of the bank but very high ratio is not favorable for the bank because it does not produce appropriate profit to bear the high interest.

$$\text{Liquidity and bank balance to total deposit ratio} = \frac{\text{Total Cash and Bank Balance}}{\text{Total Deposits}}$$

b. Current Ratio

Current ratio reflects the strength of current assets available with the company over its current liabilities into liquidity in one accounting year. This ratio indicated the current short-term solvency position of the bank. The current ratios are the ratios of total current assets to current liabilities. Higher current ratio indicates better liquidity position. In other words, current ratio represents a margin of safety. The higher the current ration, the greater the margin of safety, and the larger the amount of current assets in relation to current liabilities, the more the bank's ability to meet its current obligations, although there is no hard and fast rule, conventionally a current ratio of 2:1 (current assets twice of current liabilities) is considered satisfactory.

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

c. Quick Ratio

This ratio calculated by dividing quick assets by current liabilities. Here, quick assets include the total current assets except prepaid expenses and stock of inventory. A quick ratio of 1:1 (quick assets is equal to current liabilities) is considered satisfactory.

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

d. Liquidity and Bank Balance to Deposit Ratio (Excluding Fixed Deposit)

This ratio shows the ability of banks immediate funds to cover their (current margin, call and saving) deposits. It can be calculated by dividing liquidity and bank balance by deposits (excluding fixed deposits). The ratio can be expressed as:

$$\text{Balance to Deposit Ratio} = \frac{\text{Cash and Bank Balance}}{\text{Total Deposit (Excluding Fixed Deposit)}}$$

e. Fixed Deposit to Total Deposit Ratio

Fixed deposit is a long term and high interest charge bearing deposit. Although a high cost liability, increasing fixed deposit is subject to an additional advantage if utilized properly. Sufficient fixed deposits enable banks to grant long-term loan to their clients at higher interest rate. This ratio is calculated in order to find out the proportion of total deposit that has higher interest charge bearing. The higher the ratio, the more the interest bearing deposits as well as better liquidity and lower proportion of current or short-term deposit. It is computed by dividing the amount of fixed deposits by the total deposits amount, which is expressed as follows:

$$\text{Fixed Deposit to Total Deposits Ratio} = \frac{\text{Fixed Deposit}}{\text{Total Deposit}}$$

f. Liquidity and Bank Balance to Current Liabilities Ratio

This ratio is obtained dividing total liquidity and bank balance by total current liabilities. This ratio indicates how much liquidity is available to meet the current liabilities. Especially this ratio is useful to lenders.

$$\text{Liquidity and bank balance to current liabilities ratio} = \frac{\text{Total Cash and Bank Balance}}{\text{Current Liabilities}}$$

h. Liquidity and Bank Balance to Current Assets Ratio

This ratio is calculated dividing total liquidity and bank balance by current assets. Liquidity means the firm's holding of currency and demand deposits. It is most liquid assets because a firm disburses it immediately without any restriction.

$$\text{Liquidity and Bank balance to Current Assets Ratio} = \frac{\text{Total Cash and Bank balance}}{\text{Current Assets}}$$

g. NRB Balance to Total Deposit Ratio

This ratio is obtained dividing NRB balance by total deposits. Bank has to hold a balance of certain percentage of total deposits. The amount should be deposited in Nepal Rastra Bank in order to satisfy legal requirements.

$$\text{NRB balance to total deposit ratio} = \frac{\text{NRB Balance}}{\text{Total Deposit}}$$

II) Activities or Turnover Ratio (Utilization Ratio)

The fund of creditors and owners are invested in various assets to generate sales and profit. Activity ratios are used to evaluate the efficiency with which the firm manages and utilizes its assets. This ratio indicates how quickly certain current assets are converted into liquidity. From this ratio it can be known whether or not the business activities are efficient. These ratios are also called turnover ratio because they indicate speed with which assets are converted or turnover into profit generating assets. These ratios, moreover, help in measuring the banks' ability to utilize their available resources. Following ratio is used under the activity ratios.

a. Loan and Advances to Fixed Deposit Ratio

This ratio differs slightly from the former one because it includes the fixed deposits only. The ratio measures how many much amount is used in loan and advances in comparison to fixed deposits. Fixed deposits are interest bearing long-term obligations whereas loan and advances are the major sources of investment in generating income for selected banks. It is calculated as follows:

$$\text{Loan and Advances to Fixed Deposit Ratio} = \frac{\text{Loans and Advances}}{\text{Fixed Deposit}}$$

b. Loans and Advances to Total Deposit Ratio

The ratio assesses to what extent the bankers are able to utilize the depositor's fund to earn profit by providing loans and advances. In other words, how quickly total collected deposit are converted into loan and advances given to the client to earn income. It is computed by dividing the total amount of loan and advances to total deposit fund. Higher ratio indicates higher/proper utilization of funds and low ratio is the signal of inefficiency or remaining idle.

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

c. Investment to Total Deposits Ratio

This ratio is calculated dividing total investment by total deposits. Total investment includes government treasury bills, development bonds, company shares and other investments. This ratio presents how efficiently the resources of the banks have been mobilized. High ratio shows managerial efficiency regarding the utilization of deposits and vice-versa.

$$\text{Investment to total deposit ratio} = \frac{\text{Total Investment}}{\text{Total Deposit}}$$

III) Profitability Ratio

The profitability ratio, as the name suggests, measures the operating profitability in terms of profit margin return on equity and return on total investment, and reflects the overall efficiency and effectiveness of management, (Pradhan; 2000:53) Shareholders, bankers, government, tax collectors, employees are concerned with the profitability of the company; the shareholders and interested with their rate of return, employees in the future prospect of the company, government in companies,' tax payment capacity and bankers in the perspective of the company. A required level of profit is necessary for survival and growth of a firm in a competitive environment.

Profitability can be measured in terms of a relationship between net profit and assets. This ratio is also known as profit-to-assets ratio. It measures the profitability of investment.

Various ratios can be developed based upon the profit under different circumstances. These different ratios are called profitability ratios, which are required to support the purpose of study. The profitability ratios calculated in this study are:

a. Return on Total Assets Ratio (ROA)

This ratio is calculated by dividing net profit by total assets. This ratio represents the relationship between net profit and assets. Net profit is the profit after due interest and tax. Total asset means the assets that appear in assets side of balance sheet. The increasing ratio shows favorable situation of the banks. The higher ratio also shows that the bank could well manage their overall operations. But the lower ratio shows vice-versa.

$$\text{Return on Total Assets Ratio} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

b. Net Profit to Total Deposit Ratio

This ratio measures the percentage of profit earned from the utilization of the total deposit. Deposits are mobilized for investment, loan and advances to the public in generating revenue. Higher ration indicates the return from investment on loans and lower ration indicates that the funds are not properly mobilized.

$$\text{Net Profit to Total Assets Ratio} = \frac{\text{Net Profit}}{\text{Total Deposits}}$$

c. Return on Common Shareholders' Equity

This ratio is calculated by dividing net profit by common shareholders' equity. This ratio measures the return on shareholders' investment in the bank. The higher ratio of return on equity is better for shareholders. It builds trustworthiness to the customers as well as reputation of the bank.

$$\text{Return on common shareholders' equity} = \frac{\text{Net Profit}}{\text{Shareholders' Equity}}$$

d. Return on Working capital Fund

This ratio is calculated dividing net profit after tax by working capital. This ratio measures the proportion of net profit after tax and working capital. Working capital is obtained by subtracting current liabilities from current assets. The higher ratio is better which shows little working capitals utilized properly.

$$\text{Return on Working Capital} = \frac{\text{Net Profit}}{\text{Working Capital}}$$

I) Risk Ratios

Risk taking is the prime business of bank's investment management. It increases effectiveness and profitability of the bank. These, ratio indicate the amount of risk associated with the various banking operations, which ultimately influences the bank investment policy.

The following ratios are taken into account under this heading.

i) Liquidity Risk Ratio

The Liquidity risk ratio measures the level of risk associated with the liquid assets i.e. cash, bank balance that are kept in the bank for the purpose of satisfying the depositor's demand for cash. Higher the ratio, lower is the liquid risk. Dividing cash & bank balance calculate this ratio by total deposits. This can be mentioned as,

$$\text{Liquidity Risk Ratio} = \frac{Total\ Cash\ \&\ Bank\ Balcne}{Total\ Deposit}$$

ii) Capital Risk Ratio

The capital risk ratios of a bank indicate how much asset values may decline before the position of depositors and other creditors jeopardize. The capital risk is directly related to the return on equity (ROE). Higher the ratio, low is the capital risk. This ratio is computed by dividing capital (Paid up Capital + Reserves) by risk- weighted assets as computed under BASLE committee's formula.

This can be mentioned as,

$$\text{Capital Risk Ratio} = \frac{Capital\ (Paid\ up\ \Gamma\ \text{Re}\ serves)}{Risk\ Weighted\ Assets}$$

3.9.2 Statistical Tools

Various financial tools mentioned above were used to analyze the liquidity management of selected Banks. Similarly, the relationship between different variables related to the study topics were drowning out using statistical tools.

I) Mean or Average

The mean or average value is a single value within the range of the data that is used to represent all the value in the series. Since an average is somewhere within the range of the data, it is also called a measure of central value. Average value is obtained by adding together all the terms and dividing this total by the number of items. The formula is given below:

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

Where,

$\overline{X}$ = Arithmetic average,

X = Sum of value of all term and

N = Number of terms

II) Standard Deviation

The standard deviation is the measure that is most often used to describe variability in data distributions. It can be thought of as a rough measure of the average amount by which observations deviate on either side of the mean. Denoted by Greek letter σ (read as sigma), standard deviation is extremely useful for judging the representatives of the mean. Standard deviation is represented as:

$$s = \sqrt{\frac{\sum d^2}{n - 1}}$$

Where,

s = Standard deviation,

d^2 = Sum of the squares of the deviations measured from the arithmetic average, and,

n = Numbers of items

III) Coefficient of Variation

The coefficient of variation is the ratio of standard deviation to the mean for a given sample used to measure spread. It can also be thought of as the measure of relative risk. The larger the coefficient of variation, the greater the risk relative to the average. Mathematically,

$$V = \frac{s}{\overline{X}},$$

Where

V = Coefficient of variation,

s = Standard deviation, and,

= Arithmetic average

IV) Correlation Analysis

Correlation analysis is a statistical tool, which is used to describe the degree to which one variable is related to another. "The Correlation is a statistical tool which studies the relationship between two variables." Different methods and techniques are used in correlation analysis for measuring the extent of relationship between two variables. Karl Pearson's co-efficient of correlation is a commonly used to measure the linear association of two variables.

Karl Pearson's co-efficient of correlation is one of the most commonly used statistical tools in order to measure the nature of relationship between two variables. It is a useful statistical tool for measuring the strength of magnitude of linear relationship between two series. Karl Pearson's coefficient of correlation is a most common and useful tools to measure the relationship between two variables in the bank. The correlation coefficient (r) between two variables X and Y can be obtained by using the following formula.

$$r_{xy} = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2} \cdot \sqrt{n\sum y^2 - (\sum y)^2}}$$

Where,

n = number of observation in series x and y,

x = Sum of observation in series x,

y = Sum of observation in series y,

x^2 = Sum of square observation in series x,

y^2 = Sum of square observation in series y,

xy = Sum of the product of observation in series x and y.

Here,

r always lies between -1 and +1

r = +1 implies that two variables are perfectly positively correlated.

r = -1 implies that two variables are perfectly negatively correlated.

r = 0 implies that there is no correlation. Or it does not necessarily mean that the variables are independent. They may however be related in some other form such as quadratic, logarithm of exponential.

In this study, the simple correlations between the following variables are analyzed.

1. Liquidity and bank Balance and NRB Balance
2. Liquidity and bank Balance and Saving Deposit
3. Liquidity and bank Balance and Total Deposit
4. Liquidity and bank Balance and Net Profit
5. Liquidity and bank Balance and Loan and Advance
6. Loan and Advances and Total Deposit
7. Liquidity and bank Balance and Current Liabilities
8. Loan and Advances and Net Profit
9. Quick Assets and Current Liability
10. Working Capital and Total Assets
11. Working Capital and Total Debt
12. Total Debt and Total Deposit
13. Total Deposit and investment

Probable error of correlation coefficient

It is the measure of testing the reliability of the calculated value of r. If r were the calculated value of r from sample of n pair of observations, then P.E. is defined by:

$$\text{Probable Error (PE)} = 0.6745 \times \frac{1 Z r^2}{\sqrt{n}}$$

Here,

If r < P.E. It is not significant. So, perhaps there is no evidence of correlation.

If r > 6.P.E., it is significant.

In other cases, nothing can be concluded.

The problem error of correlation coefficient may be used to determine the limits within which population correlation coefficient lies. Limits for population correlation coefficient are ± PE.

Under the correlation analysis, the intensity of linear relation between the following variables has been measured.

- Total deposit and net profit
- Net worth and net profit
- Total deposit and investment
- Total deposit and loan and advance

Coefficient of Simple Determination (r^2)

The coefficient of determination is the measure of the degree of linear association or correlation between two variables, one of which happens to be independent and other being dependent variables. In other words, the square of the value of correlation coefficient is called coefficient of determination, which measures the percentage of total variation in dependent variable as explained by independent variables. It is used for interpretation of the value of correlation coefficient. It is the primary way to measure the extent, or strength of the association that exists between two variables X and Y. The coefficient of determination is denoted by r^2 and value lies between 0 and 1. Closer to one indicates greater the explanatory power. A values of one can occur only if the unexplained variation is zero, which simply means that all the data points in the scatter diagram fall exactly on the regression line. The r^2 is always a positive number. It can't tell whether the relationship between the two variables is positive or negative. If r^2 is equal to 0.81, which means that, 81% of total changed on dependent variables is due to the effect of independent variables and remaining 19% change in dependent variables is due to other factors. The r^2 is defined as the ratio of explained variation to the total variation.

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

V) Regression Analysis

The relationship between a known variable and an unknown variable to estimate the unknown one is known as regression analysis. Regression analysis shows how the variables are related but the correlation measures the degree of relationship between the variables.

Thus, regression is estimation of unknown values or prediction of one variable from known values of other variables. It is a mathematical measure of the average relationship between two or more variables in terms of the original units of the data.

For the analysis of regression we can use two-regression equation namely.

i. Regression equation of y on x.

ii. Regression equation of x on y.

Regression equation of y on x

In this equation, variable y is dependent and variable x is independent**.**

$Y = a+bX$. ……(1)

Where,

a= Y-Intercept

b= slope of the regression line(it measures the change in y per unit change in x)

For finding the value of 'a' and 'b' we can use following equation

$Y = Na + b \quad x$ ……(2)

$XY = a \quad X + b \quad X$……(3)

Then, putting the value of 'a' and 'b' in equation (1) we get the required estimated regression equation y on x.

The regression analysis can be classified as follows:

i) Simple Regression

The analysis used to describe the average relationship between two variables is called "simple regression analysis". It is considered as useful tool for determining the strength of relationship between two (variables in simple regression) or more variables in multiple regressions.

Specially, regression is used to estimate or predict the most probable value of dependent variables on the basis of one or more independent variables. The dependent variable is denoted by Y and the independent variable by X.

In this research study, the following simple regression has been analyzed.

a. Liquidity and bank balance on current liability

$Y = a+bX$ ……(1)

Where,

Y= liquidity and bank balance

A = regression constant

b = regression coefficient

X = current liability

This model has been constructed to examine the relationship between Liquidity and Bank Balance (dependent variable) and Current Liability (independent variable).

b. Working Capital on Total Assets

Y = a+bX ……(1)

Where,

Y = working capital

a = regression constant

b = regression coefficient

X = Total Assets

This model has been constructed to examine the relationship between working capital (dependent variable) and Total Assets (independent variable).

c. Loan and Advances on Total Deposits

Y = a+bX ……..(1)

Where,

Y= Loan and advances

a = regression constant

b = regression coefficient

X = Total Deposits

This model has been constructed to examine the relationship between Loan and advances (dependent variable) and Total Deposits (independent variable).

d. Working Capital on Total Debt

Y = a+bX ……..(1)

Where,

Y = Working Capital

a = regression constant

b = regression coefficient

X = Total Debt

This model has been constructed to examine the relationship between Working Capital (dependent variable) and Total Debt (independent variable).

e. Quick Ratio on Debt Ratio

$Y = a+bX$ ……..…(1)

Where,

Y= Quick Ratio

a = regression constant

b = regression coefficient

X = Debt Ratio

This model has been constructed to examine the relationship between Quick Ratio (dependent variable) and Debt Ratio (independent variable).

f. Liquidity and bank balance on Total Deposits

$Y = a+bX$ ……..…(1)

Where,

Y= liquidity and bank balance

a = regression constant

b = regression coefficient

X = Total deposits

This model has been constructed to examine the relationship between liquidity and bank balance (dependent variable) and Total deposits (Independent variable).

g. Quick Assets on Current Liabilities

$Y = a+bX$ ……..……(1)

Where,

Y= Quick Assets

a = regression constant

b = regression coefficient

X = Current Liabilities

This model has been constructed to examine the relationship between Quick Assets (dependent variable) and Current Liabilities (Independent variable).

ii) Multiple Regression Analysis

Multiple regression analysis represents a logical extension of two variables regression analysis. Instead of a single independent variable, two or more independent variables are used

to estimate the values of a dependent variable. However the fundamental concept in the analysis remains the same.

Multiple regressions is defined as statistical device which is used to estimate (or predicts) the most probable value of dependent variable on the basis of known value of two or more independent variables.

The multiple regression equation of dependent variables X1 on two independent variables x_2 & x_2 is:

$X_1 = a+b_1x_2+b_2x_3$

Where,

X_1 = Dependent variables

x_2 and x_3 = Independent variables

a = Value of X_1 when x_2 & x_3=0

b_1 = Partial regression coefficient of x_1 on x_2 by keeping x_3 constant.

Or

b_1 = It measures the amount of change in x_1 per unit change in x_2 when x_3 is kept constant.

b_2 = Partial regression coefficient of x_1 on x_3 by keeping x_2 constant.

The following multiple regression analysis have been analyzed.

Liquidity and bank balance (CB) on Total Deposit (TD) and Net Profit (NP)

Quick ratio (QR) on Saving Deposit Ratio (SDR) and Debt Ratio (DR).

a. Regression Constant (a)

The value of constant, which is the intercept of the model, indicated the average level of dependent variable when independent variable is zero. In another words, it is better to understand that 'a' (constant) indicates the mean or average effect on dependent variable of all the variables omitted from the model.

b. Regression Coefficient (b)

The regression coefficient of each independent variable indicates the marginal relationship between that variable and value of dependent variable, holding constant the effect of all other independent variables in the regression model. In other words, the

coefficient describes how changes in independent variables affect the value of dependent variables estimate.

c. Standard Error of Estimate (SEE)

With the help of regression equations perfect prediction is practically impossible. The standard error of the estimate measures the accuracy of the estimated figures. It also measures the dispersion about an average line. If standard error of estimate is zero, then the estimating equation to be 'perfect' estimator of the dependent variable. It indicates that the smaller value of SE of estimate the closer will be the dots to the regression line. Thus, with the help of standard error of estimate, it is possible for us to ascertain how good and representative the regression lime is as a description of the average relationship between two series. In this research work, standard error of estimate is calculated for the selected dependent and independent variables specified in the model.

VI) Test of Hypothesis

Hypothesis test is used to find the dependency of one variable to another variable. In other words, hypothesis test determines the validity of the assumption with a view to choose between two conflicting hypothesis about the value of population parameter. It helps to decide on the basis of a sample data, whether a hypothesis about the population is likely to be true or false. There are two criteria for good hypothesis statement one hypothetical statement is above the relation between variables. Second hypothesis carries a clear implication for testing the stated relation. These criteria mean hypothesis statement certain two or more variables that are measurable and they specify how the variables are related. For the study some ser of null hypothesis have been formulated and tested.

a) t-statistic

To test the validity of assumption if sample size is less than 30 t-test is used. For applying t-test in the context of small sample, the t-value is calculated at first and compared with the table value of 't' at a certain level of significance for given degree of freedom. If calculated t-value exceeds the table value (say 0.05) we infer that the difference is significant at 5 percent level. But if t-value is less than that of table value the difference is not treated as significant. In this research work, t-value is calculated between earning per share and dividend per share, net profit and dividend per share and market price per share.

The following are the steps to be used in this test:

Step-I Formulation of null hypothesis (H_0) & alternative hypothesis (H_1)

H_0: ϱ = 0 i.e the variables in the population are not related or uncorrelated or the value of correlation is in significant.

H_1: ϱ ≠ 0 i.e the variables in the population are related or the value of correlation is significant.

II. Level of significant: α = 5%

Test statistics, under H_0

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

Table value

(At 5% level of significance for 2 tail at d.f= n-2 is taken from table)

Decision:

If $t_{cal} < t_{tab}$… H_0 is accepted

If $t_{cal} > t_{tab}$ … H_1 is accepted

The hypothesis of this study is as follows:

First Hypothesis

Null Hypothesis (H_0):

H_0: ϱ =0 i.e the value of correlation between liquidity and bank balance and current liability is insignificant.

H_0: ϱ=0 i.e the value of correlation between Working Capital and Total Assets is insignificant.

H_0: ϱ=0 i.e the value of correlation between loan and advances and Total Deposits is insignificant.

H_0: ϱ=0 i.e the value of correlation between Working Capital and Total Debt is insignificant.

H_0: ϱ=0 i.e the value of correlation between Quick Ratio and al Debt Ratio is insignificant.

H_0: ϱ=0 i.e the value of correlation between liquidity & bank balance and Total Deposits is insignificant.

H_0: ϱ=0 i.e the value of correlation between Quick Assets and current liabilities is insignificant.

Alternative Hypothesis (H_1):

H_1: ϱ≠0 i.e the value of correlation between liquidity and bank balance and current liability is significant.

H_1: ϱ≠0 i.e the value of correlation between Working Capital and Total Assets is significant.

H_1: ϱ≠0 i.e the value of correlation between loan and advances and Total Deposits is significant.

H_1: ϱ≠0 i.e the value of correlation between Working Capital and Total Debt is significant.

H_1: ϱ≠0 i.e the value of correlation between Quick Ratio and Debt Ratio is significant.

H_1: ϱ≠0 i.e the value of correlation between liquidity & bank balance and Total Deposits is significant.

H_1: ϱ≠0 i.e the value of correlation between Quick Assets and current liabilities is significant.

b) Analysis of Variance (ANOVA)

An ANOVA is an analysis of the variation present in an experiment. It is a test of the hypothesis that the variation in an experiment is no greater than that due to normal variation of individuals' characteristics and error in their measurement.

The tests in an ANOVA are based on the F-ratio: the variation due to an experimental treatment or effect divided by the variation due to experimental error. The null hypothesis is this ratio equals 1.0, or the treatment effect is the same as the experimental error. This hypothesis is rejected if the F-ratio is significantly large enough that the possibility of it equaling 1.0 is smaller than some pre-assigned criteria such as 0.05 (one in twenty).

In order to test whether all the means of different sectors of samples have same common mean or not, analysis of variance is carried out. With this test one can make an inference whether the difference between the sample means is merely due to sample fluctuation or they are significantly different. The technique used in analysis of variance which compares among-sector variance to the within sector variance is F-ratio.

The following are the steps to be used in one-way ANOVA.

Step I Formulation of H0 & H1

H_0: μ1= μ2=…. μn i.e. there is no significance difference in the average value due to one factor.

H_1: μ1 =μ2 ….≠ μn i.e. there is significant difference in the average value due to one factor.

Step II. Level of significance: α = 5%

Step III. Test statistics

$$F=\frac{MSC}{MSE}$$

Where,

MSC= Mean sum of square due to column (samples)

MSE= Mean sum of square due to error

Step IV. Table value:

F_{tab} (at 5% for 2 tail at df_1= C-1, df_2= N-C) is taken from table

Where,

C = no. Of sample/ column

N = Total No. Of observation in the sample

Step V. Decision:

If $F_{cal} < F_{tab}$ … H_0 is accepted

If $F_{cal} > F_{tab}$ … $H_1$is accepted

1. First Hypothesis

Null Hypothesis:

H_0: There is no significant difference in the liquidity & bank balance to total deposit ratio between two selected banks.

i.e. H_0: μ1= μ2

Alternative Hypothesis:

H_1: There is significant difference in the liquidity & bank balance to total deposit ratio between two selected banks.

i.e. H_1: μ1 ≠ μ2

2. Second Hypothesis

Null Hypothesis:

H_0: There is no significant difference in the average current ratio between two selected banks.

i.e. H_0: μ1= μ2

Alternative Hypothesis

H1: There is significant difference in the average current ratio between two selected banks.

i.e. $H_1: \mu 1 \neq \mu 2$

3. Third Hypothesis

Null Hypothesis:

H_0: There is no significant difference in the average quick ratio between two selected banks.

i.e. $H_0: \mu 1 = \mu 2$

Alternative Hypothesis

H1: There is significant difference in the average quick ratio between two selected banks.

i.e. $H_1: \mu 1 \neq \mu 2$

4. Fourth Hypothesis

Null Hypothesis:

H_0: There is no significant difference in the average working capital between two selected banks.

i.e. $H_0: \mu 1 = \mu 2$

Alternative Hypothesis

H_1: There is significant difference in the average working capital between two selected banks.

i.e. $H_1: \mu 1 \neq \mu 2$

5. Fifth Hypothesis

Null Hypothesis:

H_0: There is no significant difference in the investment to total deposit ratio between two selected banks.

i.e. $H_0: \mu 1 = \mu 2$

Alternative Hypothesis

H_1: There is significant difference in the investment to total deposit ratio between two selected banks.

i.e. $H_1: \mu 1 \neq \mu 2$

CHAPTR IV

DATA PRESENTATION AND ANALYSIS

This is an analytical chapter, where an attempt has been made to analyze and evaluate major financial items, which have an impact on investment management and fund mobilization of NABIL, NIBL and SBI. Number of financial ratios crucial in evaluating the funds mobilization system of commercial banks have been calculated and analyzed in this chapter.

4.1 Financial Analysis

In this section different financial ratios have been used to examine the investment policy of selected sample.

4.1.1 Analysis of Liquidity Ratios

In this section of analysis the liquidity indicators such as current ratio, cash and bank to current liabilities ratio, loans and advances to current assets ratio and cash and bank to total deposit ratio are calculated and analyzed. This section analyzes the liquidity ratios to identify the liquidity performance of NABIL and SCBNL.

4.1.1.1 Current Ratio

Current assets consist of cash and bank balance, money at call or short-term notice, loan advances investment in government securities and other interest receivable and other miscellaneous current assets whereas current liabilities consist of deposits, loan and advances, bills payable, tax provision, Staff bonus, dividend payable and miscellaneous current liabilities.

Table 4.1.1.1

Current ratio (times)

	Fiscal Year							
Bank	2007/08	2008/09	2009/10	2010/11	2011/12	Mean	S.D	C.V
SCBNL	0.5015	0.5140	0.5308	0.6456	0.7474	0.5879	0.1060	18%
NABIL	0.7853	0.8132	0.7685	0.8315	0.8175	0.80316	0.02564	3%

Source: Appendix 1 'A'

The above table 4.1.1.1 shows that the current ratio of all three commercial banks. It is calculated as per total mean, Standard deviation and coefficient of variation.

In the case SCBNL and NABIL the current ratio are fluctuating trend. The SCBNL has current ratio of 0.5015 times in 2007/08 and NABIL has 0.7853 times in same year. In 2008/09 current of both banks have increased in this year SCBNL has 0.514 times and NABIL has 0.8132 times. In 2009/10 the current ratio of SCBNL has increased to 0.5308 and the ratio of NABIL has decreased to 0.7685 in same year. In 2010/11 and 2011/12 the ratios of SCBNL have increased to 0.6456 times and 0.7474 times respectively, ratio of NABIL increased to 0.8315 and decreased to 0.8175 in 2010/11 and 2011/12. In an average, Nabil has maintained higher current ratio than SCBNL, which states that liquidity position of Nabil is fair. The coefficient of variation between the current ratio of SCBN is 18%, which is comparatively higher than 3% of NABIL; it shows that current ratio of Nabil consistence than SCBNL.

4.1.1.2 Cash and Bank Balance to Total Deposit Ration (CRR Ratio)

The cash and bank balance to total deposit ratio can be obtained by dividing cash and bank balance by total deposit. It ratio shows the immediate cash availability against deposit. The ratio of 3 banks for five year period has been shown in following table.

Table No.4.1

Cash and bank balance to total deposit ratio

	Fiscal Year							
Bank	2007/08	2008/09	2009/10	2010/11	2011/12	Mean	S.D	C.V
SCBNL	0.0588	0.0887	0.0548	0.0783	0.1770	0.0915	0.0498	54%
NABIL	0.0837	0.0903	0.0302	0.0490	0.0777	0.0662	0.0255	39%

Source: Appendix 1 'B'

The table no 4.1.1.2 shows that the mean, standard deviation and coefficient of variation of cash and bank balance to total deposit ratio of both commercial banks.

Figure in the table shows that the ratio (CRR) of NABIL and SCBNL is fluctuating trend in the FY 2007/08 to 2011/2012.

Mean ratio of Nabil is 0.0662 which is less than ratio of SCBNL 0.0915 times. Standard deviation and C.V. ratio of Nabil are 0.0225 and 39% which is less than SCBNL (i.e. S.D

0.0498 and C.V 54%) From the above analysis it can be concluded that SCBNL has better maintenance of its liquidity than NABIL. But more liquidity indicates the inability of the bank.

4.1.1.3Cash and Bank Balance to Current Asset Ratio

Cash and bank balance represent total of local currency, foreign currencies, cheques in hand and various bank balances in local as well as foreign banks where as the current assets consists of cash and bank balance, money at call, short term notice, loan and advances, investment in government securities and other interest receivable and others miscellaneous current assets.

Table 4.2

Cash and bank balance to current asset ratio

	Fiscal Year							
Bank	2007/08	2008/09	2009/10	2010/11	2011/12	Mean	S.D	C.V
SCBNL	0.1131	0.1865	0.1079	0.1390	0.2454	0.1584	0.0577	36%
NABIL	0.0901	0.1054	0.0322	0.0517	0.1013	0.0762	0.0325	43%

Source: Appendix 1 'C'

Table no 4.1.1.3 shows the total mean, standard deviation and C.V. of cash and bank balance to current assets ratio of commercial banks. Current asset ratio of both banks is better as they show the ability to manage the deposit withdrawals from the customers.

The above table shows that cash and bank balance to Cash and bank balance to current asset ratio of NABIL bank has fluctuating trend. It has range from 0.0322 (in FY 2009/2010) to 0.1013 (in FY 2011/12). SCBNL bank has also fluctuating trend, it has range from 0.1079 (in FY 2009/10) to 0.2454 (in FY 2011/12).

Average ratios of study period are 0.1584 times and 0.0762 times of SCBNL and NABIL respectively. The S.D and C.V of SCBNL are 0.0577 and 36% respectively. The S.D and C.V of NABIL are 0.0325 and 43% respectively.

From the above analysis we can conclude that liquidity position (only cash and bank balance) of Nabil bank is lesser than SCBNL. But Nabil has lower consistency than SCBNL. The table also reveals that Nabil has utilized its funds more efficiently.

4.1.1.4Loan and Advances to Current Assets Ratio

To make a high profit mobilizing its fund in the best way, a commercial bank should not keep its all collected funds as cash and bank balance but they should be invested as loan and advances to the customers. In the present study loan & advances represent to local and foreign bills discounted and purchased and loans, cash credit and overdraft in local currency as well as inconvertible foreign currency.

Table 4.3

Loan & advances to current assets ratio

	Fiscal Year							
Bank	2007/08	2008/09	2009/10	2010/11	2011/12	Mean	S.D	C.V
SCBNL	0.8869	0.8135	0.8921	0.8610	0.7546	0.8416	0.0577	7%
NABIL	0.8221	0.8754	0.8772	0.8861	0.8908	0.8703	0.0277	3%

Source: Appendix 1 'D'

Table 4.1.1.4 shows the total mean, standard deviation and coefficient of variation of loan & advances to current assets ratio of commercial banks. Through this table loan & advances to current assets ratios of the sample CBS are analyzed.

In case of Nabil loans and advances to current asset ratios shows clear increasing trend i.e. i.e. it moves to 0.8754 from 0.8221 in 2007/08 to 2008/09. Thereafter it increases to 0.8772, 0.8861 and 0.8901 respectively in 2009/10, 2010 /11 and 2011/12 respectively. Ratios of SCBNL are also in fluctuating trend i.e. highest in the FY 2007/08 (0.8869) and 2011/12 (0.7546).

Mean ratio of Nabil bank 0.8703 times which is higher than SCBNL i.e. 0.8703 < 0.8416. But coefficient of variation is lesser than SBI i.e. Nabil 3 %< SCBNL 8%.

This analysis shows that Nabil use to provide high loan & advances in comparison of other two banks. Its trend of providing loan & advances is more consistency than SBI and Investment Bank.

4.1.1.5 Fixed Deposit to Total Deposit Ratio

Fixed deposit is a long term and high interest charge bearing deposit. Although a high cost liability, increasing fixed deposit is subject to an additional advantage if utilized properly. Sufficient fixed deposits enable banks to grant long-term loan to their clients at

higher interest rate. This ratio is calculated in order to find out the proportion of total deposit that has higher interest charge bearing. The higher is the ratio, the more the interest bearing deposits reflecting lower proportion of current or short-term deposit. It is computed by dividing the amount of fixed deposits by the total deposits amount by using following formula

$$\text{Fixed Deposit to Total Deposits Ratio} = \frac{\text{Fixed Deposit}}{\text{Total Deposit}}$$

Table 4.4

Fixed Deposit to Total Deposit Ratio

(Rs. In million)

Fiscal Year	Fixed Deposits		Total Deposits		Ratios (%)	
	SCBNL	NABIL	SCBNL	NABIL	SCBNL	NABIL
2007/08	25,895	31,325	29,744	31,915	87.06	98.15
2008/09	33,078	30,648	35,351	37,348	93.57	82.06
2009/10	30,451	33,968	35,183	46,341	86.55	73.3
2010/11	33,580	34,623	37,999	49,696	88.37	69.67
2011/12	28,481	32,629	35,966	55,024	79.19	59.3
Mean ($\overline{X}$)					86.95	76.5
Standard Deviation(s)					5.15	14.6
Coefficient of Variation (CV)					6	19

Source: Annual Reports of SCBNL & NABIL from FY 2007/08 to 20011/12.

The above table shows the Fixed Deposit to Total Deposits ratios of SCBNL. The ratios were as 87.06%, 93.57%, 86.55%, 88.37% and 79.19% in the respective years of study period. Similarly the ratios of NABIL were to be 98.15%, 82.06%, 73.3%, 69.67% and 59.3% in respective years of study period.

Mean of fixed deposit to total deposit of SCBNL was greater than that of NABIL i.e. 86.95>76.50. Likewise CV of NABIL was greater than SCBNL i.e. 19%>6%. It is indicates that SCBNL has more fluctuation compared to NABIL. The standard deviation of the same ratio of SCBNL was 5.15 and 14.6 for NABIL, which indicate NABIL has high risk involved than in SCBNL. The ratios of both banks revealed fluctuating trend over the period.

4.1.1.6 Cash and Bank Balance to Current liabilities (CL) Ratio

This ratio is obtained by dividing total cash and bank balance by total current liabilities. This ratio indicates how much cash is available to meet the current liabilities. Especially this ratio is useful to lenders.

$$\text{Cash and Bank Balance to CL Ratio} = \frac{\text{Total Cash and Bank Balance}}{\text{Current Liabilities}}$$

Table 4.5

Cash and Bank Balance to Current Liabilities Ratio

(Rs. In million)

Fiscal Year	**Cash and Bank Balance**		**Current Liabilities**		**Ratios (%)**	
	SCBNL	**NABIL**	**SCBNL**	**NABIL**	**SCBNL**	**NABIL**
2007/08	1750	2671	30843	33096	5.67	8.07
2008/09	3137	3373	36714	38756	8.54	8.70
2009/10	1929	1400	36844	47871	5.24	2.92
2010/11	2976	2437	39783	51624	7.48	4.72
2011/12	6366	4276	37555	57138	16.95	7.48
Mean ($\overline{X}$)					8.78	6.38
Standard Deviation(s)					4.8	2.5
Coefficient of Variation (CV)					54	39

Source: Annual Reports of SCBNL & NABIL from FY 2007/08 to 2011/12.

The ratios of both banks revealed fluctuating trend over the period.

The above table shows Cash and bank balance to current liabilities ratios of SCBNL. The ratios were 5.67%, 8.54%, 5.24%, 7.48% and 16.95% in the respective years of study period. Similarly the ratios of NABIL were 8.07%, 8.70% 2.92%, 4.72% and 7.4% 8in respective years of study period.

The above table shows the mean, standard deviation and CV of cash and bank balance to current liabilities of SCBNL. The calculated figures were 8.78%, 4.8% and 54%. Similarly the mean, standard deviation and CV of NABIL of same ratios came 6.38%, 2.5% and 39%. Average ratios of NABIL were lesser than that of SCBNL. NABIL had lesser percentage of cash balance to pay its current liabilities.

In other words NABIL was more successful in managing liquidity. CV of NABIL was also lower than that of SCBNL. The ratios of NABIL were more consistent than that of SCBNL during the study period.

The above ratio showed that both banks had not constant proportion of cash balance and current liabilities throughout the study period.

4.1.2 Asset Management Ratios (Activity Ratio)

Asset management ratio measures the efficiency of the bank to manage its asset in profitable and satisfactory manner. They indicate the speed with which assets are being converted. Thus these ratios are used to measure the banks ability to utilize their available resources.

Under this asset management ratio following ratios are studied.

4.1.2.1 Loan & Advances to Total Deposit Ratio

It shows the relationship between loans & advances to total deposit. The ratio measures the extent to which the banks are successful to mobilize their total deposit on loan & advances.

Loan & advances include loans, advances, cash credit, local and foreign bill purchased and discount. Total deposits include saving, fixed current call at short deposit and others.

Table 4.6

Loans And Advances to Total Deposit Ratio

	Fiscal Year							
Bank	2007/08	2008/09	2009/10	2010/11	2011/12	Mean	S.D	C.V
NIBL	0.4612	0.3870	0.4535	0.4849	0.5443	0.46619	0.05682	12%
NABIL	0.6694	0.7387	0.6963	0.7653	0.7561	0.72519	0.04091	6%

Source: Appendix 2 'A'

Table 4.1.2.1 shows the total mean, S.D. and C.V. of loan & advances to total deposit ratio of commercial banks. Contents of the table show the percentage of loan & advances to total deposit ratio position of NABIL and SCBNL.

The above table exhibits that the ratio of Nabil. The ratio shows fluctuating trend. The highest ratio is in FY 2010/11 (0.7635) and lowest ratio is in FY 2008/2009 (0.6694). The highest ratio of SCBNL is in 2011/12 (i.e. 0.5443) and lowest ratio is in 2008/09 (i.e. 0.3870). The mean value of Nabil is higher than SCBNL. Mean ratio of Nabil and SCBNL are 0.7251 & 0.46619 respectively. It shows that NIBL has success to maintain the highest ratios than SCBNL coefficient of variation of Nabil is lower than that of Investment & SBI i.e. 6% < 12%.

From the above table it shows that NIBL has strong position regarding the mobilization of total deposit on loans and advances and acquiring high profit in comparison. But from the point of view of liquidity higher ratio is not preferable; loans and advances are not as liquid as cash and bank balance. Similarly lower C.V of NIBL tells ratio is consistent than SCBNL.

4.1.2.2 Total Investment to Total Deposit Ratio

A commercial bank mobilizes its deposit by investing its fund in different securities issued by government and other financial or non-financial companies. This ratio measures the extent to which the banks are able to mobilize their deposit on investment in various securities.

Total investment consists investment on government securities, investment on debenture and bonds, share in subsidiary companies, shares in other companies and other investment.

Table 4.6

Total Investment to Total Deposit Ratio

	Fiscal Year							
Bank	2007/08	2008/09	2009/10	2010/11	2011/12	Mean	S.D	C.V
SCBNL	0.47	0.57	0.56	0.45	0.36	0.48	0.087	18%
NABIL	0.3114	0.2899	0.2935	0.2632	0.2555	0.28	0.023	8%

Source: Appendix 2 'B'

Table no 4.1.2.2 shows the total means, standard deviation & coefficient of variation of total investment to total deposit ratio of NABIL and SCBNL.

The above table exhibits that the ratio of Nabil. The ratio shows fluctuating trend. The highest ratio is in FY 2007/08 (0.3114) and lowest ratio is in FY 2011/12 (0.2555).NIBL and SBI both bank shows similar trend. The highest ratio of SCBNL is in 2007/08 (i.e. 0.57) and lowest ratio is in 2011/12 (i.e. 0.36).

The mean value of Nabil is lower than SCBNL bank (i.e. SCBNL=0.48>Nabil=0.28> SCBNL =0.1723. coefficient of variation of NABIL is lower than SBI and NIBL i.e. SCBNL= 18%> NABIL= 8%.

Form the analysis of above table it is clear that SCBNL has success to better utilization of deposit to investment than NAIBL. Nabil has higher consistency to investment in securities than SCBNL.

4.1.2.3 Loan and Advances to Total Working Fund Ratio

The commercial bank must be very careful in mobilizing its total asset as loan & advances in appropriate level to generate profit. This ratio reflects the extent to which the commercial banks are success in mobilizing their assets on loan & advances for the purpose of income generating. A high ratio indicates better in mobilization of funds as loan and advances and vice versa.

Total working fund consist current assets, net fixed assets, loan for development banks and other miscellaneous assets.

Table 4.7

Loan and advances to total working fund ratio (in times)

	Fiscal Year							
Bank	2007/08	2008/09	2009/10	2010/11	2011/12	Mean	S.D	C.V
SCBNL	0.43	0.35	0.40	0.43	0.48	0.42	0.05	11%
NABIL	0.58	0.64	0.63	0.67	0.67	0.64	0.04	6%

Source: Appendix 2 'C'

Table 4.1.2.3 shows the total mean, standard deviation and coefficient of variation of loan and advances to total working fund ratio of commercial banks.

The above table shows that the loan and advances to total working fund ratio of Nabil has fluctuating trend highest in FY 2011/12 (0.67) and lowest in FY 2007/08 (0.58). SCBNL has fluctuating trend i.e. highest in the FY 2011/12 (i.e. 0.48 times).

Mean value of NABIL is higher than SCBNL i.e. 0.64<0.42. Coefficient of variation of Nabil is also lower than SCBNL.

From the above analysis it can be conclude that NABIL has success to better mobilization of funds as loan & advances for the purpose of income generation.. NABIL has mobilizing its fund is higher and it has higher consistency than that of other two commercial banks.

4.1.2.4 Investment on Shares and Debenture to Total Working Fund Ratio

There has been two types of investment i.e., investment on government securities and investment on shares & debenture. Investment on shares and debentures to total working fund ratio reflects the extent on which the banks are successful to mobilize their total assets on

purchase of shares and debentures of other companies to generate incomes and utilize their excess fund.

Following table shows the Investment to total working fund ratio of selected banks.

Table 4.8
Investment on shares and Debentures to total working fund ratio

	Fiscal Year							
Bank	2007/08	2008/09	2009/10	2010/11	2011/12	Mean	S.D	C.V
SCBNL	0.1781	0.14063	0.12907	0.12817	0.16024	0.1472	0.0216	15%
NABIL	0.2721	0.2518	0.2658	0.2297	0.2280	0.2495	0.0202	8%

Source: Appendix 2 'E'

Table 4.1.2.4 shows the total mean, standard deviation and coefficient of variation of investment on shares and debentures to total working fund ratio.

The above table shows that the investment on shares and debentures to total working fund ratio of Nabil. It has decreased in 2008/09 from 2007/08 (i.e. 0.2721 to 0.2518) but it has increase in FY 2009/10 i.e. 0.2658, then thereafter it decline in 2010/11 and 2011/12. The ratio of SCBNL shows clear decreasing trend for first four year. In 2007/08 it is 0.1781 and it decrease other 3 year and reaches 0.12817 (lowest value of five year period). In 2011/12 it increases to 0.16024.

The mean value of Nabil and SCBNL are 0.2495 and 0.1472 respectively. The S.D. of Nabil, and SCBNL are 0.0202 and 0.0216 and C.V. 8% and 15% respectively.

The above analysis shows that Nabil has invested its funds in shares and a debenture in comparison of working fund is lesser than SCBNL. Its coefficient of variation of ratio is higher than SCBNL. We conclude that its investment in share and debentures seems of NABIL is to be less consistence than SCBNL.

4.1.3 Profitability Ratios

Profitability ratios are very helpful to measure the overall efficiency of operation of financial institutions. Here, profitability ratios are calculated and evaluated in terms of the relationship between net profit and assets. Higher the profit ratio shows that higher the efficiency of a bank.

The following profitability ratios are taken into account under this heading.

4.1.3.1 Return on Total Working Fund Ratio

This ratio measures the profit earning capacity by utilizing available resources i.e. total asset. Return will be higher if the banks working fund is well managed and efficiency utilized. Maximizing taxes within the legal options available will also improve the return.

Following table shows the Investment to total working fund ratio of selected banks.

Table no. 4.9

Return on total working fund ratio (in times)

(Rs. In million)

Fiscal Year	Net Profit		Total Working Capital Fund		Ratios in times	
	SCBNL	NABIL	SCBNL	NABIL	SCBNL	NABIL
2007/08	819	746	31686	36526.4	0.0258	0.0204
2008/09	1025	1031	39246	43002.7	0.0261	0.0240
2009/10	1086	1139	39522	51167.6	0.0275	0.0223
2010/11	1119	1338	43049	56939.5	0.0260	0.0235
2011/12	1169	1696	41096	61651.3	0.0284	0.0275
				Mean ($\overline{X}$)	0.0268	0.0235
				Standard Deviation(s)	0.0011	0.0026
				Coefficient of Variation (CV) in %	4	11

Source: Annual Report SCBNL and NABIL 2007/08 to 2011/12

The above table shows the total mean, standard deviation and coefficient of variation of return on total working fund ratio of all three commercial bank

In above table return on total working fund ratio of Nabil has increased in FY 2008/09 i.e. 0.024 form 0.0204 in 2007/08, then after it has decreased in 2009/10 to 0.0223. In 2010/11 and 2011/12 it increases to 0.0275, and 0.0235 respectively. In case of SCBNL it has fluctuating trend, it has range from 0.0258 (in FY 2008/09) to 0.0284 (in FY 2011/12).

Mean ratio of Nabil is lower than SCBNL i.e. 0.0235<00.0268. C.V. of Nabil is higher than SCBNL i.e. 11 %>4%%.

From the mean ratio analysis it is fund that SCBNL has success to maintain the higher ratio in return on total working fund. The coefficient of variation of SCBNL is lower than NABIL. It indicates the return on total working fund ratio of SCBNL is stable and consistence. It also reveals that SCBNL able to use funds efficiently.

4.1.3.2 Return on Equity (ROE)

Return on equity is calculated by dividing return available to shareholder by total shareholder equity. The five year ROE is shown by following table.

Table 4.10

Return on Equity

(Rs. In million)

Fiscal Year	Net Profit		Shareholders' Equity		Ratios	
	SCBNL	NABIL	SCBNL	NABIL	SCBNL	NABIL
2007/08	819	746	2493	2437	33%	31%
2008/09	1025	1031	3052	3130	34%	33%
2009/10	1086	1139	3370	3834	32%	30%
2010/11	1119	1338	3678	4567	30%	29%
2011/12	1169	1696	4122	5451	28%	31%
Mean ($\overline{X}$)					31%	31%
Standard Deviation(s)					2%	1%
Coefficient of Variation (CV) in %					7%	5%

Source: Annual Report SCBNL and NABIL 2007/08 to 2011/12

In above table return on total equity ratio of NABIL it has slightly fluctuating trend, it has range from 33% (in FY 2008/09) to 29% (in FY 2010/11). SCBNL has also slightly fluctuating trend, it has range from 28% (in FY 2011/12) to 34% (in FY 2008/09).

Mean ratio of Nabil is nearly equal with SCBNL i.e. 31%=31%. C.V. of Nabil is lower than NIBL and SBI i.e. 5 %< 7%.

From the mean ratio analysis it is found that both banks have equal return on total equity. The coefficient of variation of Nabil is lower than SCBNL. It indicates the return on equity ratio of Nabil is stable and consistence. It also reveals that equity of Nabil bank is efficient.

4.1.3.3 Return on Total Assets (ROA)

ROA can be calculated by dividing net profit by total assets. Following table shows the five year ROA with its standard deviation and C.V.

Table 4.11

Return on Total Assets

(Rs. In million)

Fiscal Year	Net Profit		Shareholders' Equity		Ratios	
	SCBNL	NABIL	SCBNL	NABIL	SCBNL	NABIL
2007/08	819	746	38873.3	37,133	2.11%	2.01%
2008/09	1025	1031	53010.8	43,867	1.93%	2.35%
2009/10	1086	1139	57305.4	52,080	1.89%	2.19%
2010/11	1119	1338	58356.8	58,141	1.92%	2.30%
2011/12	1169	1696	65756.2	63,200	1.78%	2.68%
Mean ($\overline{X}$)					1.93%	2.31%
Standard Deviation(s)					0.12%	0.25%
Coefficient of Variation (CV) in %					6.13%	10.77%

Source: Annual Report SCBNL and NABIL 2007/08 to 2011/12

In above table return on total of NABIL it has slightly fluctuating trend, it has range from 2.01% (in FY 2008/09) to 2.68% (in FY 2011/12). SCBNL has fluctuating trend, it has range from 1.78% (in FY 2011/12) to 2.11% (in FY 2007/08).

Mean ratio of Nabil is higher than SCBNL i.e. 2.31%>1.93 Similarly, C.V. of Nabil is higher than SCBNL 6.13 %< 11%.

From the mean ratio analysis it is found that Nabil bank has success to maintain the higher ratio in return on total assets. The coefficient of variation of Nabil is higher than SCBNL. It indicates the return on equity ratio of Nabil less consistence than SCBNL. It also reveals that total assets of Nabil bank are efficient.

4.1.4 Risk Ratio

The possibility of risk makes banks investment a challenging task. Bank has to take risk to get return on investment. It increases effectiveness and profitability of the bank. If a bank expects high return on its investment it has to accept the risk and manage it efficiently.

Through following ratios, effort has been made to measure the level of risk.

4.1.4.1Liquidity Risk Ratio

The liquidity risk ratio measures the level of risk associated with the liquid assets i.e. cash, bank balance that are kept in the bank for the purpose of satisfying the depositor's demand for cash. Higher the ratio, lower the liquidity risks.

Table 4.12

Liquidity risk Cash and bank balance to total deposit ratio

	Fiscal Year							
Bank	2007/08	2008/09	2009/10	2010/11	2011/12	Mean	S.D	C.V
SCBNL	0.0588	0.0887	0.0548	0.0783	0.1770	0.0915	0.0498	54%
NABIL	0.0837	0.0903	0.0302	0.0490	0.0777	0.0662	0.0255	39%

Source: Appendix 1 'B'

The table no 4.1.1.2 shows that the mean, standard deviation and coefficient of variation of cash and bank balance to total deposit ratio of both commercial banks.

Figure in the table shows that the ratio (CRR) of NABIL and SCBNL is fluctuating trend in the FY 2007/08 to 2011/2012.

Mean ratio of Nabil is 0.0662 which is less than ratio of SCBNL 0.0915 times. Standard deviation and C.V. ratio of Nabil are 0.0225 and 39% which is less than SCBNL (i.e. S.D 0.0498 and C.V 54%)

The mean ratios are observed Nabil has lesser than that of SBI & NIBL respectively, i.e. 0.0662<0.1216<0.1967. That indicates that liquidity risk of NABIL is higher than other two banks. But according to the coefficient of variation Nabil's ratio is higher than Investment but lower than SBI. It indicates that Nabil's liquidity is consistency than NIBL bank.

4.1.4.2 Capital Risk Ratio

Capital ratio measures bank ability to attract deposits and inter bank funds. It also determine the level of profit, a bank can earn if a bank chooses to take high capital risk. The capital risk is directly related to return on equity.

Table no.4.13

Capital risk ratio

Bank		Fiscal Year					Amount in Million		
		2007/08	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**Mean**	**S.D**	**C.V**
SCBNL	Capital	2,493	3,052	3,370	3,678	4,122			
	Risk Weighted Assets	13,719	13,680	15,957	18,427	19,576			
	Ratio (Times)	18%	22%	21%	20%	21%	21%	1.56%	8%
NABIL	Capital	2,437	3,130	3,834	4,567	5,451			
	Risk Weighted Assets	21,365	27,590	32,269	38,034	41,606			
	Ratio (Times)	11%	11%	12%	12%	13%	12%	0.71%	6%

Source: Annual Report SCBNL and NABIL 2007/08 to 2011/12

Above table shows the total mean, standard deviation & coefficient of variance of capital risk ratio of commercial banks.

In above table capital risk ratio of Nabil has decrease in FY 2008/09 from 2007/08 (i.e. 11.41% to 11.35%). Thereafter it shows increasing trend and reached 13.10% in 2011/12. SCBNL shows fluctuating trend it highest ratio is in 2008/09 (i.e. 22%) and lowest ratio is in 2007/08 (i.e. 18%).

The mean ratios are observed, NABIL's ratio is lower than Investment but lower SCBNL. Similarly, coefficient of variation is lower than that of other two banks i.e. 8% > 6%. It is concluded that the Nabil bank is more stable than SCBNL.

4.2 Statistical Tools

Some important statistical tools are used to achieve the objective of this study. In this study, statistical tools such as, trend analysis, co-efficient of correlation analysis between different variables, test of hypothesis are used.

4.2.1 Trend Analysis

Under this topic, analysis trend of loan & advances to total deposit ratio as well as trend of total investment to total deposit ratios of Nabil, Investment and SBI bank are calculated and forecasted for next five years. The forecast is based on the following assumptions.

The first assumption is that other things will remain unchanged.

The bank will run in present potion.

The economy will remain in the present stage

The forecast will be true only when the limitation of least square method is carried out

Nepal Rastra Bank will not change its guidelines to commercial banks.

4.2.1.1Trend analysis of Current Ratio

Calculate the trend values of current ratio of NABIL and SCBNL for 5 years from 2007/2008 to 2011/12 and forecast for 9 years from 2008 to 2016. The following table 3 shows the actual value and projected value of Current ratio of Nabil and SCBNL.

Table 4.14

Trend analysis Current Ratio

Ratio in %

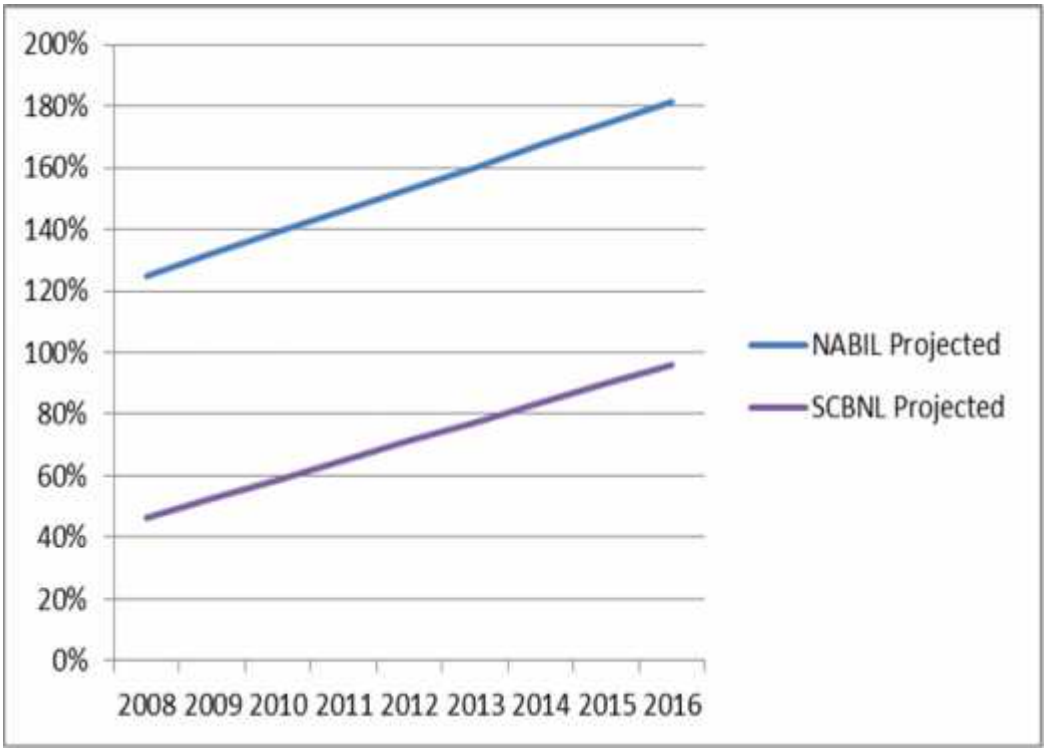
Year	SCBNL		NABIL	
	Actual	Projected	Actual	Projected
2008	50%	46%	79%	79%
2009	51%	53%	81%	79%
2010	53%	59%	77%	80%
2011	65%	65%	83%	81%
2012	75%	71%	82%	82%
2013		77%		83%
2014		84%		84%
2015		90%		84%
2016		96%		85%

Source: Appendix 3

The calculated and projected trend values of loan and advances of NABIL and SCBNL are fitted in the following trend line.

Figure 4.1

Projected trend of Current Ratio



From the above table 4.2.1.1 it has been shown that actual and projected ratio of loan & advances to total deposits of NABIL and SCBNL. Both shows straight increasing trend. If our assumption are applied the ratio of of Nabil in 2016 will be 85% which is the lower than project ratio of SCBNL.

From above trend analysis it is quite obvious that the trend of current ratio of SCBNL higher than NABIL. Competitively speaking, it has quit good increasing trend. Its slope is 0.06234that is highest than NABILI (i.e. 0.0623> 0.0180> - 0.006). These increasing trend means SCBNL will have strong liquidity position than NABIL in future.

4.2.1.2 Trend analysis of Cash and Bank Balance to Total Deposit Ratio

Calculate the trend values Cash and Bank Balance to Total Deposit Ratio of NABIL and SCBNL for 5 years from 2007/2008 to 2011/12 and forecast for 9 years from 2008 to 2016. The following table shows the actual value and projected value of ratio.

Table no. 4.14

Trend analysis of Cash and Bank Balance to Total Deposit Ratio

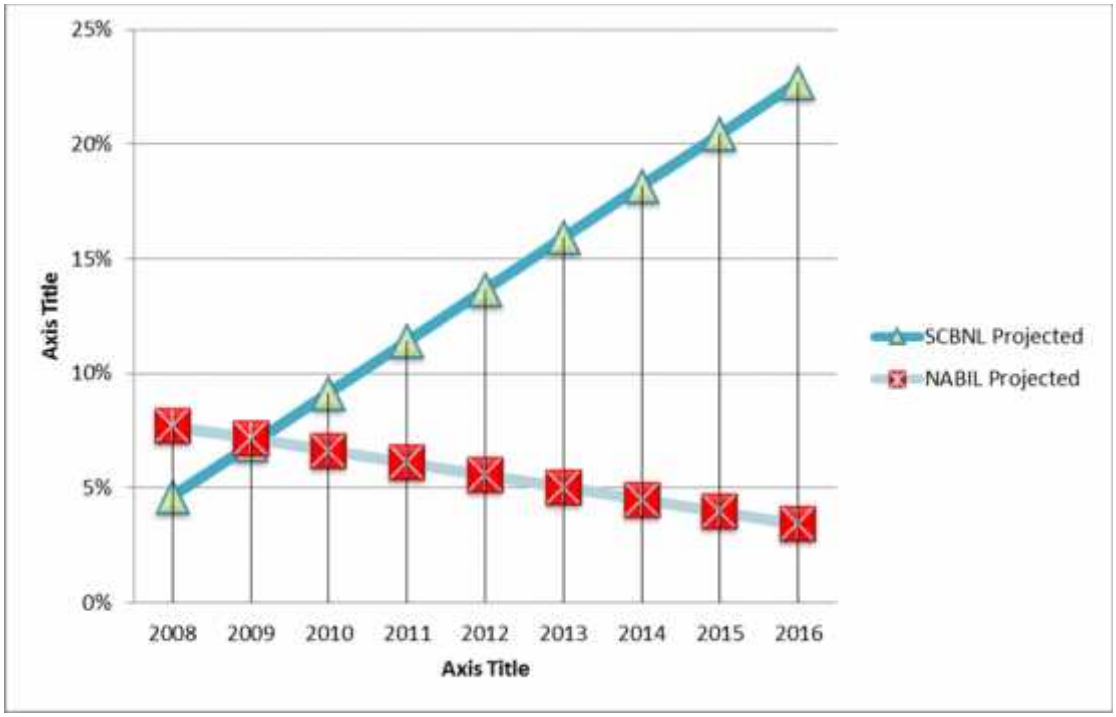
Year	SCBNL		NABIL	
	Actual	Projected	Actual	Projected
2008	6%	5%	8%	8%
2009	9%	7%	9%	7%
2010	5%	9%	3%	7%
2011	8%	11%	5%	6%
2012	18%	14%	8%	6%
2013		16%		5%
2014		18%		4%
2015		20%		4%
2016		23%		3%

Source: Appendix 4

The calculated and projected trend values of total investment to total deposits of Nabil, Investment and SBI are fitted in the following trend line.

Figure 4.2

Trend Projection of Cash and Bank Balance to Total Deposit Ratio



From the above table 4.2.1.2 shows that the ratio of total cash to total deposit ratio of Nabil is in decreasing trend. But the ratio of SCBNL shows clear increasing trend. If our assumption is applied the ratio of total investment to total deposit of Nabil in 2016 will be 3%, which is lower than the forecasted ratio of SCBNL. Forecasted ratio of SCBNL will be 235 in 2016.

From the above analysis it can be concluded that SCBNL slope of trend line is 0.0225 which is greater than NABIL, it means SCBNL may use relatively large portion of deposit than NIBL and small than SBIL towards maintain liquidity.

4.2.2 Coefficient of Correlation Analysis

Under this topic, Karl person's coefficient of correlation is used to find out the relationship between deposit and loan & advances, deposit and total investment, outside asset and net profit.

4.2.2.1 Correlation Coefficient of SCBNL

Following table shows the correlation coefficient of SCBNL. These coefficients have been calculated by using variables of five year.

Table 4.15

The analysis of correlation between different variables of SCBNL

S.N	Variables	R	Relation	(r^2)	P.E	6 P.E	Sig/insig
1	Cash and Bank Balance and NRB Bal.	-0.3169	Negative	0.1004	0.2714	1.6282	insing.
2	Cash and Bank Balance and Saving Dep.	0.3938	Positive	0.1551	0.1046	0.6276	Not con
3	Cash and Bank Balance and Total Dep.	-0.0833	Negative	0.0069	0.2996	1.7973	insing.
4	Cash and Bank Balance and Net Profit	-0.0274	Negative	0.0008	0.3014	1.8085	insing.
5	Cash and Bank Balance & Loan and Adv.	-0.3099	Negative	0.0960	0.2727	1.6360	insing.
6	Loan and Advances and Total Deposit	0.9422	Positive	0.8877	0.0339	0.2032	Sig
7	Cash and Bank Balance & Current Liab.	-0.1741	Negative	0.0303	0.2925	1.7550	insing.
8	Loan and Advances and Net Profit	0.1122	Positive	0.0126	0.2978	1.7871	insing.
9	Quick Assets and Current Liability	0.1354	Positive	0.0183	0.2961	1.7767	insing.
10	Working Capital and Total Assets	-0.8715	Negative	0.7595	0.0726	0.4353	insing.
11	Working Capital and Total Debt	-0.8717	Negative	0.7598	0.0725	0.4348	insing.
12	Total Debt and Total Deposit	0.9755	Positive	0.9516	0.0146	0.0877	Sig
13	Total Deposit and investment	0.9149	Positive	0.8370	0.0492	0.2949	Sig

Source: Appendix 6

The correlation between the cash and bank balance and NRB balance shows negative relation with low degree of association. The coefficient of determination is 0.1004, which indicates that nearly 10% of total changed in cash, and bank balance to the effect of NRB balance and remaining 90% change in cash and bank balance is due to other factor.

The correlation between cash and bank balance and NRB balance is less than probable error so the correlation is insignificant. The correlation of cash and bank balance with saving deposit is greater than P.E but less than 6P.E.so no comment can be made significance.

The correlation of cash and bank balance with total deposit, net profit and loan and advances are all negative and correlation of cash and bank balance with total deposit, net profit and loan and advances are insignificant.

The correlation coefficient of loan and advances and total deposits is positive with high degree of relationship. The coefficient of determination (r^2) is 0.8877 that means 88.77% of the change in loan and advances is due to the effect of total deposits and remaining 11.23% change in loan and advances is due to other related factors. The correlation is also greater than 6 times P.E. to the relation between loan and advances & total deposits is significant.

The relationship between cash and bank balance & current liabilities is negative and coefficient of determination is 0.0303 that means 3.03% change in cash and bank balance explained by current liabilities and remaining 96.97% change in cash and bank balance is due to other factors. It shows that there is low degree of inverse relationship. The association between cash and bank balance and current liabilities is insignificant because the value of r is less than P.E.

Similarly the correlation between loan and advances and net profit is 0.1122 that means there is low degree of positive relationship. The coefficient of determination is 0.0126 that means only 1.26% change in loan and advances is due to the effect of net profit. The correlation between loan and advances and net profit is insignificant because r is not greater than P.E.

The correlation of quick assets with current liability is 0.1354 during the study period. It means there is low degree of positive relationship between quick assets with current liability. The coefficient of determination of quick assets with current liability is 0.0183, which indicates that the quick asset is not deeply affected by current liability. In other words nearly 1.83% of total changed in quick assets is due to the effect of current liability and remaining 98.17% of total changed on quick assets is due to effect of other variables. The variable quick assets are uncorrelated with the variable current liabilities that mean the correlation of quick assets with current liability is insignificant because 'r' is less than P.E.

The correlation between working capital with total assets shows the high degree of inverse relationship. The value of correlation between working capital and total assets is insignificant because 'r' is less than P.E. during the study period; the coefficient of determination of working capital and total assets is 0.7595 that means nearly 75.95% variations in working capital is explained by variation in total assets.

The correlation of working capital and total debt is insignificant because r<P.E. The correlation of working capital with total debt is –0.8717. The coefficient of determination of working capital and total debt is 0.7598 that means nearly 75.98% variation in working capital is explained by variation in total debt.

The correlation of total debt with total deposits shows the high degree of positive relationship. The coefficient of determination of total debt with total deposit is 0.9516. It shows that the variation in total deposit highly affected the total debt. The relationship of total debt and total deposit is significant because ‘r’ is greater than 6 P.E.

The correlation of total deposit with investment shows the high degree of positive relationship. The coefficient of determination of total deposit with investment is 0.8370. It shows that the variation in total deposit highly affected by investment. The relationship of total deposit and investment is significant because ‘r’ is greater than 6 P.E.

4.2.2.2 Correlation Coefficient of NABIL

Following table shows the correlation coefficient of SCBNL. These coefficients have been calculated by using variables of five year.

Table 4.16

The simple correlation analysis of NABIL between different variables

S. N	Variables	R	Relation	(r^2)	P.E	6 P.E	Sig/insig
1	Cash and Bank Balance and NRB Balance	0.7961	Positive	0.6337	0.4275	2.5647	Not con.
2	Cash and Bank Balance and Saving Dep.	0.9117	Positive	0.8313	0.0509	0.3054	Sig
3	Cash and Bank Balance and Total Dep.	0.9357	Positive	0.8755	0.0376	0.2254	Sig
4	Cash and Bank Balance and Net Profit	0.7161	Positive	0.5129	0.1469	0.8816	Not con.
5	Cash and Bank Balance & Loan and Adv.	0.9200	Positive	0.8464	0.0463	0.2780	Sig
6	Loan and Advances and Total Deposit	0.9919	Positive	0.9838	0.0049	0.0293	Sig
7	Cash and Bank Balance and Current Liab.	0.9232	Positive	0.8523	0.0445	0.2673	Sig
8	Loan and Advances and Net Profit	0.7850	Positive	0.6163	0.1158	0.6945	Sig
9	Quick Assets and Current Liability	0.9527	Positive	0.9077	0.0278	0.1670	Sig
10	Working Capital and Total Assets	-0.9925	Negative	0.9851	0.0045	0.0270	insing.
11	Working Capital and Total Debt	-0.9895	Negative	0.9792	0.0063	0.0377	insing.
12	Total Debt and Total Deposit	0.9955	Positive	0.9910	0.0027	0.0164	Sig
13	Total Deposit and investment	-0.6715	Negative	0.4510	0.1656	0.9937	insing.

Source: Appendix 5

During the study period, the correlation of cash and bank balance with NRB balance, saving deposit and total deposit is 0.7961, 0.9117 and 0.9357 respectively. The coefficient of determination is also 0.6337,0.8313 and 0.8755, which indicates that nearly 63%, 83% and 87% variation in cash and bank balance is explained by variation in NRB balance, saving deposit and total deposit respectively. Since it can be concluded that cash and bank balance of NABIL during the study period is affected by NRB balance, saving deposit and total deposit. The correlation of cash and bank balance with NRB balance is difficult to conclude because the coefficient is greater than P.E but less than of 6 P.E. similarly, correlation of cash and bank balance with saving deposit and total deposit is significant because 'r' is greater than 6 P.E.

Similarly the association of cash and bank and net profit and loan and advance is found 0.7161 and 0.9200 respectively which shows that there is moderate and high degree of positive relationship. The coefficient of determination is 0.5129 and 0.8464 which indicates that nearly 51%, and 85% change of total change in cash and bank balance is due to the effect

of net profit and loan & advances respectively. The relationship between cash and bank balance and loan & advances is significant because the correlation 'r' is greater than 6 P.E i.e. 0.92>0.2780. Similarly, it is difficult to conclude the conflation of cash and bank balance with net profit because coefficient of net profit is greater than P.E but less than of 6 P.E.

During the study period, loan and advances and total deposit as well as cash and bank balance and current liabilities is positively correlated. The coefficient of determination between loan & advances and total deposit is 0.9838 which means 98.38% variation in loan & advances is explained by variation in total deposit. The relationship is also significant because the value of 'r' is more than 6 times of P.E. similarly, the coefficient of determination between cash and bank balance and current liabilities is 0.8523 which means 85.23% variation in cash and bank balance is explained by variation in current liability. The relationship is also significant because the value of 'r' is more than 6 times of P.E.

The correlation between loan & advances with net profit is higher degree of positive relationship and the coefficient of determination is 0.6163, which shows that the higher portion of total change on loan & advances is due to the net profit. The relationship between loan & advances and net profit is significant during the study period.

During this study period the quick assets and current liability is positively correlated. The coefficient of determination is 0.9077 which means 90.77% variation in quick assets is explained by variation in current liability. The relationship is also significant because the value of 'r' is more than 6 times of P.E.

The correlation between working capital and total assets and total debt is –0.9925 and –0.9895 which is high degree of inverse relationship. The coefficient of determination is 0.9851 and 0.9792 that means 98.51% and 97.92% respectively of total change on working capital is due to the change in total assets and total debt.

The correlation of total debt and total deposit is 0.9955, which means that there is high degree of positive relationship. The coefficient of determination is 0.9910, which indicates that nearly 99% of total change in total debt is due to the effect of total deposit. The relationship between total debt and total deposit is significant because r> 6 P.E i.e. 0.0164<0.9955.

During the study period, the correlation of total deposit with investment is –0.6715. This shows that moderate degree of negative relationship. The coefficient of determination is 0.4510 which indicates that nearly 45% variation is total deposit is explained by variation in investment. The correlation of total deposit with investment is insignificant because 'r' is less than P.E.

4.2.3 Regression Analysis

4.2.3.1 Simple Regression Analysis

The analysis used to describe the average relationship between two variables is called "simple regression analysis". It is considered as useful tool for determining the strength of relationship between two (variables in simple regression) or more variables in multiple regressions.

Specially, regression is used to estimate or predict the most probable value of dependent variables on the basis of one or more independent variables. The dependent variable denoted by Y and the independent variable is denoted by X.

In this research study, the following simple regression has been analyzed.

Criteria: $t_{cal} > t_{tab} = H_1$ accept

$t_{cal} < t_{tab} = H_0$ accept

4.2.3.1.1 Cash and Bank balance (CB) on Current Liabilities (CL)

Table 4.17

CB on CL

Bank	Regression Constant (a)	Regression coefficient (b)	S.E	r^2	t_{cal}	t_{tab} (at α= 5% and d.f.= 3)	sig/insig
SCBNL	555.936	-0.095	0.309	0.03	-0.306	3.182	Insig.
NABIL	59.545	0.218	0.052	0.852	4.161	3.182	Sig.

Source: Calculated in Spreadsheet Model (Appendix-7)

The above table shows the simple regression analysis between CB on CL of the selected Development banks of Nepal.

The regression coefficient of SCBNL is negative. It means that the correlation between CB and CL of the bank is negative. The correlation of CB and CL of NABIL is positive. The regression coefficient of SCBNL and NABIL is -0.095 and 0.218 respectively. It indicates that holding other variable constant one-rupee increase in CL leads to an average of about Re. 0.095 decrease in CB or balance in case of SCBNL. And an average of Re. 0.218 increases in CB due to CL in NABIL. The standard error of estimate during the study period is 0.309 and 0.052 of SCBNL and NABIL respectively.

The coefficient of multiple determinations of SCBNL and NABIL are 0.03 and 0.852 respectively, which indicates that 3% and 8.52% variation in CB of these banks are explained by the change in CL of the respective banks. The value of constant (a) is 555.936 and 59.545 of the SCBNL and NABIL respectively. It indicated that CB was affected by other several factors besides CL. The result of the regression is statistically insignificant or not related because the $t_{cal} < t_{tab}$ at 5% level of significance and at 3% degree of freedom Similarly, The result of the regression of NABIL is statistically significant or related because the $t_{cal} > t_{tab}$ at 5% level of significance and at 3% degree of freedom.

It indicates that the CB of SCBNL didn't depend on CL of SCBNL and the CB of SCBNL affected by other related various factors besides CL. Similarly the CB of NABIL depends on CL of NABIL.

4.2.3.1.2 Working Capital (WC) on Total Assets (TA)

Table 4.18

WC on TA

Bank	Regression Constant (a)	Regression coefficient (b)	S.E	r^2	t_{cal}	t_{tab} (at α= 5% and d.f.= 3)	sig/insig
SCBNL	-43.257	-0.653	0.212	0.759	-3.078	3.182	Insig.
NABIL	71.489	-0.668	0.047	0.985	-14.071	3.182	Sig.

Source: Calculated in Spreadsheet Model (Appendix-7)

The above table shows the simple regression of WC on TA of two banks during the 5 years study period .The regression analysis of WC and TA is negative among the selected banks. The WC of SCBNL and NABIL would decrease by -0.653 and -0.668 respectively with an increase in TA by Rs. 1 assuming that the other variables are constant.

The regression constant of the SCBNL is negative whereas regression constant of the NABIL is positive which indicates that average level of dependent variable or average effect on dependent variable if all variables are omitted from the model.

The regression constant shows that the WC of banks is highly affected by other factor besides the TA. The S.E. of estimate shows the dispersion in regression line. It also measures the accuracy of the estimated figures. The S.E. of SCBNL and NABIL are 0.212 and 0.047 respectively. It indicates that there is variation in regression line and correlation.

The coefficient of determination (r^2) of SCBNL and NABIL are 0.759 and 0.985 respectively. The r^2 of SCBNL is lower than that of NABIL. It indicates that TA explains only 7.59% variation in WC. Similarly 9.85% variation in WC is explained due to change in TA.

The tabulated 't' value (t_{tab}) at 5% level of significant on 3% d.f. is 3.182 and calculated t-value (t_{cal}) is -3.078 and -14.071 of SCBNL and NABIL respectively.

The regression coefficient of SCBNL is insignificant because the $t_{cal} < t_{tab}$ but the correlation coefficient between WC and TA of NABIL is significant because $t_{cal} > t_{tab}$ i.e. 14.071>3.182. It means that the WC of NABIL is positively related with TA and dependent on TA.

4.2.3.1.3 Loan on Total Deposit (TD)

Table 4.19

Loan on TD

Bank	Regression Constant (a)	Regression coefficient (b)	S.E	r^2	t_{cal}	t_{tab} (at α= 5% and d.f.= 3)	sig/insig
SCBNL	-2777.019	2.179	0.447	0.888	4.87	3.182	Sig.
NABIL	-119.336	0.963	0.071	0.984	13.502	3.182	Sig.

Source: Calculated in Spreadsheet Model (Appendix-7)

In above table the simple regression of loan on TD is shown from the above-tabulated data we can analyze the actual condition and movement of loan and TD.

The regression constant of SCBNL and NABIL are -2777.019 and -119.336 respectively. These data shows TA does not affect the loan of respective banks. The regression coefficient of SCBNL and NABIL is 2.179 and 0.963.

The regression relation between loan and TD of SCBNL and NABIL indicates that Rs. 1 increase in TD will increase the loan by Rs. 2.179 and Rs. 0.963 respectively. Assuming other variables remaining constants, The S.E. is estimate 0.447 and 0.071 of SCBNL and NABIL respectively.

The coefficient of determination (r^2) is 0.888 and 0.984 of SCBNL and NABIL respectively. It indicates that 88.8% and 98.4% variation in loan of SCBNL and NABIL are explained due to the change in TD.

The correlation coefficient of SCBNL and NABIL is significant at 5% level of significance at 3 degree of freedom because $t_{cal} > t_{tab}$.

4.2.3.1.4 Working Capital (WC) on Total debt (Td)

Table 4.20

WC on Td

Bank	Regression Constant (a)	Regression coefficient (b)	S.E	r^2	t_{cal}	t_{tab} (at α= 5% and d.f.= 3)	sig/insig
SCBNL	606.004	-0.984	0.319	0.76	-3.08	3.182	Insig
NABIL	25.334	-0.732	0.062	0.979	-11.877	3.182	Sig.

Source: Calculated in Spreadsheet Model (Appendix-7)

The above table shows the both two selected banks have negative regression relation between WC and Td. The regression co-efficient of SCBNL and NABIL is -0.984 and -0.732 respectively. It indicates that an increase of 1% in Td, the WC will decline by 0.984 and 0.732 respectively of SCBNL and NABIL assuming other variables are constant.

The S.E. of the estimated regression equation or line of WC on Td is 0.319 and 0.062 of SCBNL and NABIL respectively.

The coefficient of determination (r^2) of SCBNL and NABIL are 0.76 and 0.979 respectively. It indicates that 76% and 97.9% variation on WC of SCBNL and NABIL respectively are explained due to the changed in Td.

The value of t-calculated which is used for the significance test of correlation coefficient of SCBNL is smaller than t-tabulated at 5% level of significant at 3 degree of freedom whereas NABIL have greater t-calculated than t-tabulated. So the correlation between WC and Td of SCBNL is insignificant and NABIL is significant. The correlation between WC and Td of NABIL is significant and negatively correlated that means while Td increases then WC will decreases.

4.2.3.1.5 Quick Ratio (QR) on Debt Ratio (DR)

Table 4.21

QR on DR

Bank	Regression Constant (a)	Regression coefficient (b)	S.E	r^2	t_{cal}	t_{tab} (at α= 5% and d.f.= 3)	sig/insig
SCBNL	0.234	0.001	0.005	0.006	0.129	3.182	Sig.
NABIL	0.156	0	0	0.468	1.626	3.182	insig.

Source: Calculated in Spreadsheet Model (Appendix-7)

The above table shows the simple regression of QR on DR of the selected two banks. The regression coefficient of SCBNL is 0.001 whereas regression coefficient of NABIL is 0. It indicates that the 1% increase in DR leads to 0.001% and 0% increase in QR respectively of SCBNL and NABIL, assuming other related variables are constant.

The regression constant of SCBNL is 0.234 and that of NABIL 0.156. It indicates that QR of SCBNL and NABIL affected by other factor besides the DR. The S.E. of SCBNL and NABIL are 0.005 and 0 respectively. The coefficient of determination (R^2) of SCBNL and NABIL are 0.006 and 0.468 respectively. It means QR of SCBNL is less dependent on DR and QR of NABIL is highly dependent on DR. In other words, the DR determines the rise on fall in QR of NABIL highly. The t-calculated value of correlation between QR and DR is smaller than the tabulated value t at 5% level of significance. .The correlation of QR and DR of those banks are insignificant.

4.2.3.1.6 Cash and Bank balance (CB) on Total Deposit (TD)

Table 4.22

CB on TD

Bank	Regression Constant (a)	Regression coefficient (b)	S.E	r^2	t_{cal}	t_{tab} (at α= 5% and d.f.= 3)	sig/insig
SCBNL	477.556	-0.057	0.393	0.007	-0.145	3.182	Insig.
NABIL	36.123	0.248	0.054	0.875	4.592	3.182	Sig.

Source: Calculated in Spreadsheet Model (Appendix-7)

The above table shows the simple regression of CB on TD of the selected banks during the 5-year study period. The regression constant of SCBNL and NABIL is -0.057 and 0.248 respectively. It indicates the average value of CB will decrease by Rs. -0.057 with change in TD by Rs. 1 of SCBNL. Similarly Rs. 1 increase in TD leads Rs. 0.248 increase in CB of NABIL.

The regression constant of SCBNL is 477.556 and that of NABIL is 36.123.. It indicates that the CB of those banks affected by other factors besides the TD of respective banks.

The S.E. of SCBNL and NABIL are 0.393 and 0.054 respectively. The SCBNL has lower coefficient of regression and NABIL has higher, which are 0.007 and 0.875 respectively. It means that only 7% variation in CB leads to change in TD in case of SCBNL and 87.5% variation in CB leads to change in TD in case of NABIL. It indicates that the CB of NABIL highly dependent oin TD and the CB of SCBNL is less depended on TD.

The t-calculated value of correlation between CB and TD is smaller than the tabulated value t at 5% level of significance. The correlation of CB and TD of those banks is insignificant. Similarly the value of calculated' is greater than tabulated 't' in case of NABIL. So the correlation of CB and TD of that bank is significant. It means the value of CB is not related with the value of TD in SCBNL whereas the CB of NABIL is related with TD.

4.2.3.1.7 Quick Assets (QA) on Current Liabilities (CL)

Table 4.23

QA on CL

Bank	Regression Constant (a)	Regression coefficient (b)	S.E	r^2	t_{cal}	t_{tab} (at α= 5% and d.f.= 3)	sig/insig
SCBNL	401.27	0.089	0.377	0.018	0.237	3.182	Insig.
NABIL	623.199	-0.034	0.187	0.011	-0.181	3.182	Insig..

Source: Calculated in Spreadsheet Model (Appendix-7)

This table shows the simple regression of QA on CL during the study period. The regression coefficient of SCBNL is positive whereas the regression coefficient of NABIL is negative. It means that the correlation between QA and CL is inverse in case of NABIL whereas the QA is positively correlated with CL in case of SCBNL.

The S.E. of SCBNL and NABIL are 0.377 and 0.187 respectively. The coefficient of determination of SCBNL and NABIL are 0.018 and 0.011 respectively

The value of calculated't' of SCBNL and NABIL are 0.237 and -0.181 respectively. These values of t_{cal} are all smaller than the t_{tab} at 5% level of significance i.e. 3.182. So the correlation and regression of QA with CL is insignificant in case of two selected banks.

4.2.3.2 Multiple Regression Analysis

Multiple regression analysis represents a logical extension of two variables regression analysis. Instead of a single independent variable, two or more independent variables are used to estimate the values of a dependent variable. However the fundamental concept in the analysis remains the same.

Multiple regressions is defined as statistical device which is used to estimate (or predicts) the most probable value of dependent variable on the basis of known value of two or more independent variables.

In this research study the following multiple regressions was used.

4.2.3.2.1 Cash and Bank Balance on Total Deposit, and Net Profit

Table 4.24

CB on TD and NP

Bank	Regression Constant (a)	Regression Coefficient (b 1)	Regression Coefficient (b 2)	S.E $_1$	S.E $_2$	Multiple Correlation (r)	r^2
SCBNL	474.274	-0.018	-0.056	0.592	0.483	0.86	0.007
NABIL	37.166	0.259	0.242	3.752	0.10	0.936	0.876

Source: Calculated in Spreadsheet Model (Appendix-8)

Regression equation:

$CB = a + b_1TD+b_2NP$

Where, CB is dependent and NP and TD are independent variables.

The above table shows the result of multiple regression analysis of the selected development banks that CB depends on NP and TD. The beta coefficient (b_1) of TD and (b2) have NP respectively are –0.018 and –0.056of SCBNL and –0.259 and 0.242 of NABIL.

The regression coefficient of Td and NP are positive for NABIL that means increase in these variable results also increase CB. But as regression coefficient of TD and NP are negative for SCBNL CB will decrease when TD and NP increases.

During the study period, the constant 'a' in multiple regressions that CB depends on TD and NP for SCBNL and NABIL are 474.274 and 37.166 respectively. The multiple correlations of SCBNL and NABIL are 0.086 and 0.936 respectively. These all indicates that there exists a positive and highly positive relationship exists in SCBNL and NABIL respectively. The coefficient of multiple determinations of SCBNL and NABIL are also 0.007 and 0.876, which indicates variation in CB is due to combined change in TD and NP.

4.2.3.2.2 Quick Ratio on Saving Deposit Ratio and Debt Ratio

Table 4.25

QR on SDR and DR

Bank	Regression Constant (a)	Regression Coefficient (b 1)	Regression Coefficient (b 2)	S.E $_1$	S.E $_2$	Multiple Correlation (r)	r^2
SCBNL	0.315	-0.004	0	0.009	0	0.678	0.460
NABIL	0.090	-0.001	0	0.001	0	0.866	0.750

Source: Calculated in Spreadsheet Model (Appendix-8)

Regression equation:

$QR = a + b_1SDR+b_2 DR$

Where, QR is dependent and SDR and DR are independent variables.

The above table shows the result of multiple regression analysis of the selected development banks that QR depends on SDR and DR. The beta coefficient (b_1) of SDR and (b_2) have DR are –0.004 and 0 of SCBNL and –0.001, and 0 of NABIL respectively.

The negative regression coefficient of SDR means increase in these ratios results decrease in QR whereas zero regression coefficient of DR means increase in these ratios did not affect QR.

The constant 'a' in multiple regressions indicates that QR depends on SDR. DR ratios for SCBNL and NABIL are 0.315 and 0.090 respectively. The multiple correlations of SCBNL and NABIL are 0.6780 and 0.866, which indicates that there exit positive relationship.

4.2.4 Test of Hypothesis

Hypothesis test is used to find the dependency of one variable on another variable. In other words, hypothesis test determines the validity of the assumption with a view to choose between two conflicting hypothesis about the value of population parameter. It helps to decide on the basis of a sample data, whether a hypothesis about the population is likely to be true or false. There are two criteria for good hypothesis statement. One hypothetical statement is above the relation between variables. Second hypothesis carries a clear implication for testing the stated relation.

4.2.4.1 One Way ANOVA Analysis

The following tests were done under the one-way ANOVA analysis.

1. To test whether the average value of cash & bank balance to total deposit ratio between two selected banks are significantly differ or not.

The following are the steps to be used in one-way ANOVA.

I. Formulation of H_0 & H_1

H_0: $\mu 1 = \mu 2$ i.e. There is no significant difference in the average value of cash & bank balance to total deposit ratio between two selected banks.

H_1: $\mu 1 \neq \mu 2$ i.e. there is significant difference in the average value of cash & bank balance to total deposit ratio between two selected banks.

II. Level of significance: α =5%

III. Test statistics

$$F = \frac{MSC}{MSE}$$

Where,

MSC= Mean sum of square due to column (sample)

MSE= Mean sum of square due to error

Table 4.26

Calculation in one-way ANOVA

Source of variations	**Sum of Squares (ss)**	**Degree of freedom (d.f)**	**Mean sum Of square (MSS)**	**F-Ratio**
Due to column or samples	SSC=14.46325653	C-1=2-1=1	MSC=14.46325653	$F=\frac{MSC}{MSE}$ = 0.0443
Due to error	SSE=2611.601515	N-C=10-2=8	MSE=326.4501894	
Total	SST=2626.064772	1+8=9	……..	

Source Appendix –IV

IV. Table value:

F_{tab} (at 5% for 2 tail at d.f 1=C-1=1&d.f2=N-C=8)=5.32

V. Decision:

$F_{cal} < F_{tab}$ i.e. H_0 is accepted. It means that there is no significant difference in the average value of cash & bank balance to total deposit ratio between two selected banks.

2. To test whether the average value of Current Ratio between two selected banks are significantly differ or not.

The following are the steps to be used in one-way ANOVA.

I. Formulation of H_0 & H_1

H_0: $\mu 1 = \mu 2$ i.e. There is no significant difference in the average value of Current ratio between two selected banks.

H_1: $\mu 1 \neq \mu 2$ i.e. there is significant difference in the average value of Current ratio between two selected banks.

II. Level of significance: α =5%

III. Test statistics

$$F=\frac{MSC}{MSE}$$

Table 4.27

Calculation in one-way ANOVA

Source of variations	Sum of Squares (ss)	Degree of freedom (d.f)	Mean sum of Square (MSS)	F-Ratio
Due to column or samples	SSC=0.0052091	C-1=2-1=1	MSC=0.0052091	F= $\frac{MSC}{MSE}$ =1.1563
Due to error	SSE=0.036039222	N-C=10-2=8	MSE=0.004504903	
Total	SST=0.041248322	1+8=9	……..	

Source: Calculated in Spreadsheet Model (Appendix-9)

IV. Table value:

F_{tab} (at 5% for 2 tail at d.f 1=C-1=1&d.f2=N-C=8)=5.32

V. Decision:

$F_{cal} < F_{tab}$ i.e. H_0 is accepted. It means that there is no significantly difference in the average value of Current ratio between two selected banks.

3. To test whether the average Quick Ratio between two selected banks are significantly differ or not.

The following are the steps to be used in one-way ANOVA.

I. Formulation of H_0 & H_1

H_0: $\mu 1 = \mu 2$ i.e. There is no significant difference in the average value of Quick ratio between two selected banks.

H_1: $\mu 1 \neq \mu 2$ i.e. there is significant difference in the average value of Quick ratio between two selected banks.

II. Level of significance: α =5%

III. Test statistics

F= $\frac{MSC}{MSE}$

Table 4.28

Calculation in one-way ANOVA

Source of variations	Sum of Squares (ss)	Degree of freedom (d.f)	Mean sum of Square (MSS)	F-Ratio
Due to column or samples	SSC=0.001564297	C-1=2-1=1	MSC=0.001564297	F= $\frac{MSC}{MSE}$ =0.367861
Due to error	SSE=0.034019256	N-C=10-2=8	MSE=0.00425240	
Total	SST=0.035583553	1+8=9	……..	

Source: Calculated in Spreadsheet Model (Appendix-9)

IV. Table value:

F_{tab} (at 5% for 2 tail at d.f 1=C-1=1&d.f2=N-C=8)=5.32

V. Decision:

$F_{cal} < F_{tab}$ i.e $H_0$is accepted. It means that there is no significant difference in the average value of Quick ratio between two selected banks.

4. To test whether the average Working Capital between two selected banks are significantly differ or not.

The following are the steps to be used in one-way ANOVA.

I. Formulation of H_0 & H_1

H_0: $\mu 1 = \mu 2$ i.e. There is no significant difference in the average value of Working Capital between two selected banks.

H_1: $\mu 1 \neq \mu 2$ i.e. there is significant difference in the average value of Working Capital between two selected banks.

II. Level of significance: α =5%

III. Test statistics

F= $\frac{MSC}{MSE}$

Table 4.29

Calculation in one-way ANOVA

Source of variations	Sum of Squares (ss)	Degree of freedom (d.f)	Mean sum of Square (MSS)	F-Ratio

Due to column or samples	SSC=85827.25449	C-1=2-1=1	MSC=85827.25449	$F=\frac{MSC}{MSE}$ =0.76819
Due to error	SSE=893811.599	N-C=10-2=8	MSE=11176.449	
Total	SST=979638.85	1+8=9	……..	

Source: Calculated in Spreadsheet Model (Appendix-9)

IV. Table value:

F_{tab} (at 5% for 2 tail at d.f 1=C-1=1&d.f2=N-C=8)=5.32

V. Decision:

$F_{cal} < F_{tab}$ i.e H_0 is accepted. It means that there is no significant difference in the average value of Working Capital between two selected banks.

5. To test whether the average investment to total deposit ratio between two selected banks are significantly differ or not.

The following are the steps to be used in one-way ANOVA.

I. Formulation of H_0 & H_1

H_0: $\mu 1 = \mu 2$ i.e. There is no significant difference in the average value of investment to total deposit ratio between two selected banks.

H_1: $\mu 1 \neq \mu 2$ i.e. there is significant difference in the average value of investment to total deposit ratio between two selected banks.

II. Level of significance: α =5%

III. Test statistics

$$F=\frac{MSC}{MSE}$$

Table 4.30

Calculation in one-way ANOVA

Source of variations	Sum of Squares (ss)	Degree of freedom (d.f)	Mean sum of Square (MSS)	F-Ratio
Due to column or samples	SSC=59.12225647	C-1=2-1=1	MSC=59.12225647	$F=\frac{MSC}{MSE}$ =6.07814067

Due to error	SSE=77.81623974	N-C=10-2=8	MSE=9.727029967	
Total	SST=136.9384962	1+8=9	……..	

Source: Calculated in Spreadsheet Model (Appendix-9)

IV. Table value:

F_{tab} (at 5% for 2 tail at d.f 1=C-1=1&d.f2=N-C=8)=5.32

V. Decision:

$F_{cal} > F_{tab}$ i.e H_1 is accepted. It means that there is significant difference in the average value of investment to total deposit ratio between two selected banks.

4.3 Major Findings of the Study

The main findings of the study are derived on the analysis of financial date of Nabil, Investment and SBI is given below.

4.3.1 Liquidity ratio

The liquidity position of Nabil and SCBNLI reveals that:

- The mean ratio of cash and bank balance to total deposits of Nabil is lower than SCBNL. It states that the liquidity position of Nabil is not better than SCBNL. NABIL bank has better to maintain of its liquidity position.
- The mean ratio of cash and bank balance to current assets ratio of Nabil is lesser than SCBNL and Nabil has less consistency than SCBNL. It states that the Nabil has lower liquidity position.
- From the analysis of current ratio, it is found that the mean ratio of Nabil is higher than SCBNL i.e. Nabil have an average ratio of 0.80316 times, it means Nabil has maintained higher current ratio in compared to SCBNL. The ratio of Nabil is more variable than SCBNL.
- The mean ratio of loan & advances to current assets ratio of Nabil is higher SCBNL. But it has more consistency SCNBL. It reveals that the higher part of NABIL current assets is covered by bills purchase and loan advances in comparison of SCBNL.

- The mean fixed deposit to total deposit of SCBNL is higher than NABIL and the ratio is more consistence than NABIL. It indicate that SCBNL has able to maintain larger part of deposit with fixed deposit, fixed deposit mature in certain time that help to maintain effective liquidity management.

- Cash and bank to current liabilities ratio of SCBNL has higher than NABIL. But ratio of NABIL is found more consistent than SCBNL. It indicates in average SCBNL liquidity strength is greater than NABIL but consistency of this strength is lower.

The above result shows that the liquidity position of Nabil is comparatively lower SCBNL. It has the lower cash and bank balance to total deposit, cash and bank balance to current assets ratio and loan & advances to current assets but it has average consistency. It has the highest investment on government securities to current assets ratio.

4.3.2 Asset management ratio

The assets management ratio of NABIL and SCBNL;

- The mean ratio of total investment to total deposit of Nabil is lower than SCBNL. It can be concluded that SCBNL is success to better utilization of deposit to investment than NABIL.

- The mean ratio of loan & advances to working fund ratio of Nabil higher than SCBNL. It can be concluded that Nabil has mobilizing its fund is higher with more consistency than SCBNL.

- The mean ratio of loan & advances to total deposit of Nabil is higher than SCBNL. Nabil has less C.V than SCBNL. These indicate that loans and advances of Nabil is stable and consistent than SCBNL.

- The mean ratio of investment on shares and debentures to total working fund of Nabil is higher than SCBNL. But NABIL's investment in shares and debentures seems to be consistent SCBNL.

From the above analysis, it can be conclude that Nabil has highest investment policy towards investment to total deposits and government securities to total working fund but lower into shares and debentures to total working funds. And Nabil has stable and consistent than SCBNL.

4.3.3 Profitability ratio

From the analysis of profitability ratios of NABIL and SCBNL show that;

- The mean ratio of NABILS's return and loan & advances is comparatively higher SCBNL. The variability of the ratio of Nabil is higher and it is also consistency in return than SCBNL.
- The mean ratio of NABILS's ROE is equal with SCBNL and it is more consistent than return of SCBNL.
- The mean ratio of NABILS's ROA is comparatively higher SCBNL bit it shows less consistency in return than SCBNL.
- The mean ratio of return on total working fund ratio of Nabil is lower than SCBNL and it is less consistent. It can be conclude the SCBNL has success to maintain the high ratio in return on total working fund.

From the above findings, it can be said that there is no vast difference in tow banks. But speaking specifically, Nabil is average profitable in SCBNL. To earn high profit in future the bank must maintain its high profit margin.

4.3.4 Risk Ratio

The risk ratios of NABIL and SCBNL reveal that;

- SCBNL has maintained higher mean ratio of capital risk than NABIL but this ratio is less consistence than NABIL's ratio.
- The mean ratio of liquidity risk of Nabil is lower than SCBNL. The ratio of Nabil is more consistent than SCBNL.

From the above findings, it can be concluded that Nabil has average risk ratio. The bank maintains risk against credit fund to earn high profit.

4.3.6 Findings form Statistical Analysis

The statistical analysis of NABIL and SCBNL reveals that;

- The trend analysis of current ratio of SCBNL and NABIL bank show increasing trend but. Nabil's slope of trend line is 0.06234, which is highest than SCBNL increasing

trend ratio of 0.008266739. The increasing trend and higher slope of Nabil's ravels that it will be better position in future.

- The trend analysis of Trend of cash and bank balance to total deposit ratio of NABIL has decreasing trend. Nabil's slope of trend line is -0.00532433, which is lesser slope than slope of SCBNL of 0.022589869. The decreasing trend ratio of Nabil's revels that it has bad condition for cash and bank balance to total deposit ratio.
- In case of NABIL cash and bank balance is positively correlated with NRB balance, saving deposit, total deposit, net profit, loan and advances and current liabilities. The correlations of cash and bank balance with NRB balance and net profit are not concluded and remaining is significant. The correlation of loan and advances with total deposit and net profit are positive. Similarly the correlation of quick assets with current liability is positive however the correlation of working capital with total assets and total debt is negative.
- The simple regression analysis of CB on CL shows that SCBNL has negative coefficient whereas NABIL has positive coefficient. It indicates that CB of SCBNL is negatively correlated with CL; whereas CB of NABIL is positively correlated with CL. The r^2 shows that CB of NABIL highly affected by CL whereas CB of SCBNL lightly affected by CL.
- The simple regression analysis of WC on TA shows that regression coefficient (b) is negative for both bank SCBNL and NABIL. S.E of SCBNL is higher than that of NABIL. The r^2 of SCBNL is 0.985 whereas NABIL is 0.985. It indicates that WC of NABIL is greatly affected by TA than of SCBNL. The value of correlation between WC and TA of SCBNL is insignificant or not related with each other but the correlation with TA is significant in NABIL.
- The regression coefficient (b) of loan on TD for all sample banks are positive that means the loan of all sample banks is positively correlated with TD of respective banks. The S.E of SCBNL than that of NABIL. The Loan of NABIL is highly depended in its TD than SCBNL, which is measured by r^2.
- The simple regression coefficients of WC on Td for both banks are negative that shows the negative correlation between WC and Td. The WC of NABIL highly depends upon Td than SCBNL measured by r^2. The correlation between WC and Td of SCBNL is insignificant whereas N correlation of the same ratios of NABIL is significant.

- The simple regression coefficient (b) of QR on DR is positive for SCBNL. The S.E of NABIL is higher than that of SCBNL. The relationship between QR and DR of both banks are insignificant.
- The simple regression coefficient (b) of CB on TD is negative for SCBNL and positive for NABIL. The CB of SCBNL lightly depends upon TD whereas CB of NABIL highly depends upon TD measured by r^2.
- The regression coefficient of QA on CL for SCBNL is positive but negative for NABIL. The values of correlation between QA and CL for both banks are insignificant. The QA on CL of SCBNL shows that the QA is more dependent with CL comparing with NABIL.
- The multiple regression analysis of CB on TD and NP ratios shows that the regression coefficient (b) in SCBNL is negative. Similarly the multiple regression analysis of CB on TD and NP ratios shows that the regression coefficient (b) in NABIL positive. The multiple coefficient of determination of both banks are 0.007 and 0.876 which shows the CB of both banks positively depends on TD and NP.
- The multiple regression analysis of QR on SDR and DR ratios shows that the regression coefficient (b) in SCBNL as well as NABIL is negative and null. Multiple coefficient of determination of both banks is 0.46 and 0.75, which shows the QR of both banks positively depends on SDR and DR.
- In hypothesis under F test considering the one-way ANOVA result, the average value of cash & bank balance to total deposit ratio between two selected banks have no significance difference. Similarly there is no significantly difference in the average value of Current ratio, Quick ratio, Working Capital between two selected banks. But there is significant difference in the average value of investment to total deposit ratio between two selected banks.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

In the last chapter of this study is summary, conclusion and recommendation have discussed and explored the facts and matters required for various parts of the study. Through the analytical chapter by using some important financial as well as statistical tools, makes a comparative analysis of various aspects of the liquidity of concern commercial banks.

Having completed the basic analysis required for the study, the researcher must point out the mistakes and error and also correct them by giving suitable suggestions for further improvement. Therefore, this summarized and recommended tasks of the researcher of the study would be meaningful to the top management of the bank to initiate the action and achieve the desired result.

5.1 Summary

The economic development of a country depends upon the development of commerce and industry. And, there is no any doubt; banking promotes the development of commerce because banking itself is the part of commerce. The process of economic development depends upon various factors, however economists are now convinced that capital formation and its proper utilization plays a paramount role for rapid economic development.

The economic growth was very slow in earlier year; it has caught its full selling with the restoration democracy in the country. At present, overall economic growth rate still decline year by year. Reasons behind this decline are insecure situation faced by industry, decrease in the tourist arrival, drop in the production and export of carpet, garment and pashmina industry and political situation and activities of Maoists.

The evolution of the organized financial system in Nepal has more recent history than in other countries of the world. In Nepalese context, the history of banking is not more than six decade. The announcement of liberal and free market economic policy, Nepalese banks and financial sectors are having greater network and access to national and international markets. Commercial banks plays a vital role which deals with other people’s money and stimulate saving by mobilized idle resources to those sectors where have investment opportunities. Modern bank provides various services to their customer in view of facilitating their economic and social life.

The objective of the commercial banks is always to earn profit by investing or granting loan and advances into profitable, secured and marketable sector. But commercial bank should be careful while performing the credit creation function and liquidity management function; the banks should never invest its funds in credit areas with large magnetite of risk and make sufficient level of liquidity to maintain daily operation and grab profitable investment opportunities. Commercial banks must follow the rules and regulations as well as different directions issued by central banks and ministry of finance while mobilization the funds and liquidity provision.

There has been number of commercial bank established, the research has taken into consideration.

'**Nabil Bank Ltd'** – Nabil bank limited was the first join venture commercial banks incorporated in 1984 by joint investment of Dubai bank limited and Nepali promoters. This bank is awarded by "Bank of year 2004".

'**SCBNL'** – Standard Chartered Bank Nepal Limited, formerly known as Nepal Grindlays Bank Limited has its head office in Kathmandu and has been operation since 1987. It is a joint venture operation, registered in Nepal, with 50 percent of the shares held by Standard Chartered Grindlays Bank, 33 percent by Nepal Bank Limited, the country's oldest and largest financial institution and 17 percent by Nepalese public.

The study mainly dealt with the comparative analysis of the liquidity position and cash management practices of SCBNL and NABIL. This study aimed to find out liquidity management position of selected banks in relation to ratio analysis and statistical analysis. Its main objective was to find out the liquidity position of selected bank and evaluate its major significance. It also gave priority to make comparative study of profitability position of SCBNL and NABIL

As mentioned earlier, this study concentrated on the comparative analysis of Liquidity management practices of bank SCBNL and NABIL. From the perspective of the researcher the development banks of Nepal were chosen for the study mainly because of no earlier research was done on aforementioned topic of development banks.

To fulfill the objectives, an appropriate research methodology was developed, which includes financial tools and statistical tools. In the ratio analysis, four different categories were tested with their sub-division. The ratios tested were liquidity ratio, profitability ratio, and leverage ratio, utilization ratio.

Liquidity ratio measures the firm's ability to fulfill its short-term commitments. These ratios focus on current assets and current liabilities and are used to ascertain the short-term solvency position of a firm.

5.2 Conclusion

The above-mentioned major findings led this study to the following conclusions

- Nabil is comparatively lower SCBNL. It has the lower cash and bank balance to total deposit, cash and bank balance to current assets ratio and loan & advances to current assets but it has average consistency. It has the highest investment on government securities to current assets ratio.

- Through the assets management ratio, , it can be conclude that Nabil has highest investment policy towards investment to total deposits and government securities to total working fund but lower into shares and debentures to total working funds. And Nabil has stable and consistent than SCBNL.

- In analysis of profitability, return on total working fund, ROE, ROA and return on loan & advances, it is found that ROE of both banks are 31%. But other profitability ratios of NABIL are found to be higher than SCBNL. From this, it can be concluded that there is no vast difference in two banks. But speaking specifically, Nabil is average profitable than SCBNL. To earn high profit in future the bank must maintain its high profit margin. NABIL investment policy has positive impact in major profitability sector and has competitively better utilization of fund to earn profit.

- From the viewpoint of risk ratio, liquidity risk ratio is lower than SCBNL. This indicates that NABIL has risker position SCBNL. Capital risk of Nabil is higher than SCBNL. Form this conclusion can be drawn that NABIL invest more liquid fund to earn more profit and taking high liquidity risk than SCBNL.

- In case of SCBNL cash and bank balance is negatively correlated with NRB balance, total deposit, net profit, loan & advances and current liabilities while it has positive correlation with its saving deposit.

- In case of NABIL cash and bank balance is positively correlated with NRB balance, saving deposit, total deposit, net profit, loan and advances and current liabilities.
- The simple regression analysis of CB on CL shows that SCBNL has negative coefficient whereas NABIL has positive coefficient.

- The simple regression coefficient (b) of QR on DR is positive for SCBNL. The S.E of NABIL is higher than that of SCBNL. The relationship between QR and DR of both banks are insignificant.

- The multiple regression analysis of CB on TD and NP ratios shows that the regression coefficient (b) in SCBNL is negative whereas the same ratio is positive for NABIL.

- In hypothesis under F test considering the one-way ANOVA result, the average value of cash & bank balance to total deposit ratio between two selected banks have no significance difference. Similarly there is no significantly difference in the average value of Current ratio, Quick ratio, Working Capital between two selected banks. But there is significant difference in the average value of investment to total deposit ratio between two selected banks.

5.3 Recommendations

On the basis of above analysis and conclusion, following recommendations are made.

- Both banks have very low liquidity position because the both current and quick ratios are below the standard. Both banks cannot pay short-term liability at the time of its creditor's demand. It may create difficult situation in future. So, both banks should keep sufficient level of current and quick assets to maintain its liquidity position.
- Profitability is the main indicator of the financial performance of cash and every business organization. In this study, profitability ratio is good from the angle of return but it is seen that Nabil able to earn higher return than SCBNL. So SCBNL is recommended to increase its interest earned in outside assets and working fund by investing more & more funds in loan & advances and different types of securities. Because higher interest earning capacity of the bank implies better performance of the bank.

- A commercial bank must maintain its satisfactory liquidity position to meet the credit need of the community; however, external as well as internal factors affect the liquidity position of banks. As Nabil's has maintained the ratio of cash and bank balance to total deposits and current assts considerably lower than SCBNL, Nabil is recommended to increase cash and bank balance to make the immediate payment to the depositor and to meet the demand of loan & advances.

- If a bank expects high return on its investment it has to accept the risk, it increases effectiveness and profitability of the bank. The risk taken by Nabil, from the angle of capital risk is an average whereas liquidity risk and is higher than SCBNL and its consistency are highly volatile which may result higher loss. The NABIL should maintain level of risk, Nabil should carefully analyze in above risk to achieve higher returns.

- Co-efficient of correlation analysis interprets the relationship between the two or more variables, co-efficient of correlation between outside assets and net profit of Nabil is negative, it shows that there is negative relationship between these two variables. It reveals that Nabil is not capable to earn net profit by mobilizing its total outside assets. So, Nabil should innovate new strategy and changing its current policy for more and more utilizing its outside assets to earn more profit.

- In the light of growing competition in the banking sector, the business of the bank should be customer oriented. The bank is recommended to adopt new technology and services such as financial switch system (SWIFT), automatic teller machine (ATM) cards, visa electron debit card, international credit card, locker services, lending against goal and silver services, parking service, 24 hour services etc. The bank should involve in different kind of social and community development activities. The bank has been able to provide more personalized services and a better environment for its customer, it is an effective tool to attract and retain the customers.

- To get success in competitive banking environment, depositor's money must be utilized as loan and advances. The largest item of the bank in the asset side is loan and advances. If it is neglected, then it could be the main cause of liquidity crisis in the bank. SCBNL's loan & advances to total deposit ratio and loan & advances to total working fund ratio is lower than NABIL. To overcome this situation SCBNL is

strongly recommended to follow liberal lending policy and invest more and more percentage of total deposit and total working fund in loan & advances.

- In order to collection much funds, both banks are suggested not to be surrounded and limited only big clients i.e. multinational companies, large industries, manufacturer companies, NGO's and INGO's etc, it should be give emphasis to the lower level people also. Through different kind of scheme such as ezee saving scheme, cumulative deposit scheme, house building deposit scheme, deposit linked life insurance scheme, recurring deposit scheme and many other the bank can collect a large fund from lower level people of the kingdom.

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Appendix – 1

Liquidity Ratio

A. Current Ratio

Calculation of Current Ratio of NABIL and SCBNL

Amount in NPR Million

		Fiscal Year				
Bank	Details	2007/08	2008/09	2009/10	2010/11	2011/12
SCBNL	Current Assets	15,469	16,817	17,886	21,403	25,942
	Current Liabilities	30,843	36,714	36,844	39,783	37,555
	Current Ratio	0.5015	0.5140	0.5308	0.6456	0.7474
NABIL	Current Assets	25,989	31,515	36,787	42,923	46,708
	Current Liabilities	33,096	38,756	47,871	51,624	57,138
	Current Ratio	0.7853	0.8132	0.7685	0.8315	0.8175

B. Cash and Bank Balance to Total Deposit Ratio

Calculation of Cash and Bank Balance to Total Deposit Ratio of NABIL & SCBNL

Amount in NPR Million

		Fiscal Year				
Bank	Details	2007/08	2008/09	2009/10	2010/11	2011/12
SCBNL	Cash	1,750	3,137	1,929	2,976	6,366
	Deposit	29,744	35,351	35,183	37,999	35,966
	Ratio	0.0588	0.0887	0.0548	0.0783	0.1770
NABIL	Cash	2,671	3,373	1,400	2,437	4,276
	Deposit	31,915	37,348	46,341	49,696	55,024
	Ratio	0.0837	0.0903	0.0302	0.0490	0.0777

C. Cash and Bank Balance to Current Assets Ratio

Calculation of Cash and Bank Balance to Current Assets Ratio of NABIL & SCBNL

Amount in NPR Million

		Fiscal Year				
Bank	Details	2007/08	2008/09	2009/10	2010/11	2011/12
SCBNL	Cash and Bank Balance	1,750	3,137	1,929	2,976	6,366
	Current Assets	15,469	16,817	17,886	21,403	25,942
	Ratio	0.1131	0.1865	0.1079	0.1390	0.2454
NABIL	Cash and Bank Balance	2,671	3,373	1,400	2,437	4,276
	Current Assets	25,989	31,515	36,787	42,923	46,708
	Ratio	0.0901	0.1054	0.0322	0.0517	0.1013

D. Loan & Advances to Current Assets Ratio

Calculation of Loan & Advances to Current Assets Ratio of NABIL & SCBNL

		Fiscal Year				
Bank	Particular	2007/08	2008/09	2009/10	2010/11	2011/12
SCBNL	Loans and Advances	13,719	13,680	15,957	18,427	19,576
	Current assets	29,744	31,515	36,787	42,923	46,708
	Ratio	0.8869	0.8135	0.8921	0.8610	0.7546
NABIL	Loans and Advances	21,365	27,590	32,269	38,034	41,606
	Current assets	31,915	37,348	46,341	49,696	55,024
	Ratio	0.8221	0.8754	0.8772	0.8861	0.8908

Appendix – 2

Asset Management Ratio (Activity Ratio)

A. Loan & Advances to Total Deposit Ratio

Calculation of Loan & Advances to Current Assets Ratio of NABIL & SCBNL

		Fiscal Year				
Bank	Particular	2007/08	2008/09	2009/10	2010/11	2011/12
SCBNL	Loans and Advances	13718.60	13679.76	15956.96	18427.27	19575.97
	Total Deposit	29744.00	35350.82	35182.72	37999.24	35965.63
	Ratio	0.4612	0.3870	0.4535	0.4849	0.5443
NABIL	Loans and Advances	21365.05	27589.93	32268.87	38034.10	41605.68
	Total Deposit	31915.05	37348.26	46340.70	49696.11	55023.70
	Ratio	0.67	0.74	0.70	0.77	0.76

B. Total Investment to Total Deposit Ratio

Calculation of Total Investment to Current Assets Ratio of NABIL & SCBNL

		Fiscal Year				
Bank	Particular	2007/08	2008/09	2009/10	2010/11	2011/12
SCBNL	Total Investment	13902.82	20236.12	19847.51	17258.68	12938.22
	Total Deposit	29,744	35,351	35,183	37,999	35,966
	Ratio	0.47	0.57	0.56	0.45	0.36
NABIL	Total Investment	9939.77	10826.38	13600.92	13081.21	14055.85
	Total Deposit	31915.05	37348.26	46340.70	49696.11	55023.70
	Ratio	0.31	0.29	0.29	0.26	0.26

C. Loan & Advances to Working Fund Ratio

Calculation of Loan & Advances to Working Fund Ratio of NABIL & SCBNL

		Fiscal Year				
Bank	Particular	2007/08	2008/09	2009/10	2010/11	2011/12
SCBNL	Loans and Advances	13719	13680	15957	18427	19576
	Total Working Fund	31686	39246	39522	43049	41096
	Ratio	0.43	0.35	0.40	0.43	0.48
NABIL	Loans and Advances	21365.05	27589.93	32268.87	38034.10	41605.68
	Total Working Fund	36526	43003	51168	56939	61651
	Ratio	0.58	0.64	0.63	0.67	0.67

D. Investment to Working Fund Ratio

Calculation of Investment to Working Fund Ratio of NABIL & SCBNL

		Fiscal Year				
Bank	Particular	2007/08	2008/09	2009/10	2010/11	2011/12
NIBL	Loans and Advances	26997	36241	40318	41096	41637
	Total Working Fund	38595.7	52619.8	66906.0	57917.4	65141.0
	Ratio	0.1781	0.14063	0.12907	0.12817	0.16024
NABIL	Loans and Advances	21365	27590	32269	38034	41606
	Total Working Fund	36526	43003	51168	56939	61651
	Ratio	0.2721	0.2518	0.2658	0.2297	0.2280

Appendix -3

Trend analysis of Current ratio NABIL & SCBNL

A. Trend Projection of Current Ratio NABIL

S.N	Year (X)	Current Ratio (Y)	XY	X 2
1	2008	79%	1344.2	4032064.0
2	2009	81%	1484.1	4036081.0
3	2010	77%	1399.6	4040100.0
4	2011	83%	1539.1	4044121.0
5	2012	82%	1521.4	4048144.0
Total	10050	3.626	7288.4	20200510.0

number of Period (n) = 5

List square equation is:

$Y = a + b X$

Normal Equation

$\sum Y = n a + b \sum X$

……..…….i

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

2…….ii

Putting Calculated Value in normal Equations

3.915 = 5 a + 10050 b ……(iii)

5 x 7288.4= 10050 a + 20200510.0 b

…….(iv)

By solving the Normal Equation

a = -15.8129

b = 0.00827

$Y = - 15.8129 + 0.008 X$

Projected Ratio

S.N	Year	Projected Y = Y = - 15.8129 + 0.008 X
1	2008	79%
2	2009	79%
3	2010	80%
4	2011	81%
5	2012	82%
6	2013	83%
7	2014	84%
8	2015	84%
9	2016	85%

In the same way trend projection of SCBNL has been calculated

Appendix - 4

A. Trend Projection of total cash balance to total Deposit of SCBNL

S.N	Year (X)	Total Investment to total Deposit (Y)	XY	X 2
1	2008	6%	400.6	4032064.0
2	2009	9%	318.3	4036081.0
3	2010	5%	346.5	4040100.0
4	2011	8%	297.7	4044121.0
5	2012	18%	368.4	4048144.0
Total	10050	0.46	1731.6	20200510.0

number of Period (n)
= 5
List square equation is:
Y = a + b X

Normal Equation
$\sum Y = n a + b \sum X$
$n\sum XY = a \sum X + b \sum X 2$

Putting Calculated Value in normal Equations
0.862= 5 a + 10050 b …….(iii)
5 x 1731.6 = 10050 a + 20200510.0 b …….(iv)

By solving the Normal Equation
a = -45.314
b = 0.0226

Y = -45.314 + 0.0226X

Projected Ratio

S.N	Year	Projected Y = -45.314 + 0.0226X
1	2008	80%
2	6%	5%
3	9%	7%
4	5%	9%
5	8%	11%
6	18%	14%
7		16%
8		18%
9		20%

In the same way trend projection of NABIL has been calculated

Appendix – 5

Calculation of Co-efficient of Correlation between Deposits and Loan & Advance of NABIL Bank

Year	Deposit (X)	Loans and Advances (Y)	X = (X-μX)	Y= (Y-μY)	$(X-\mu X)^2$	$(Y-\mu Y)^2$	(X-μX) X (Y-μY)
2008	34,451.73	26,996.65	(13,227)	(10,261)	174,951,660	105,289,840	135722630
2009	46,698.10	36,241.21	(981)	(1,017)	961,489	1,033,332	996764
2010	50,094.73	40,318.31	2,416	3,061	5,837,394	9,367,101	7394556
2011	50,138.12	41,095.51	2,459	3,838	6,048,976	14,728,544	9438888
2012	57,010.60	41,637.00	9,332	4,379	87,085,258	19,177,942	40867054
Total	238,393.28	186,288.68	(0.00)	0.00	274,884,777.66	149,596,759.79	194,419,891.87

Now,

$$\text{Co-efficient of Correlation (r)} = \frac{xy}{\sqrt{(X-\mu X)^2}\sqrt{(Y-\mu Y)^2}}$$

$$= \frac{194,419,891.87}{\sqrt{5 \mid 274,884,777.66}\sqrt{5 \mid 149,596,759.79}}$$

$$= -0.6715$$

$$r^2 = 0.4510$$

$$\text{Probable Error (P.F.r)} = 0.6745 \frac{1Zy^2}{n}$$

$$= 0.6745 \frac{1Z0.67}{5}$$

$$= 0.9937$$

Coefficients of correlation of other variables of NABIL have been calculated accordingly following table present coefficient of regression

The simple correlation analysis of NABIL between different variables

S.N	Variables	r	Relation	(r2)	P.E	6 P.E	Sig/insig
1	Cash & bank Balance and NRB Balance	0.7961	Positive	0.6337	0.4275	2.5647	Not con.
2	Cash and bank Balance and Saving Dep.	0.9117	Positive	0.8313	0.0509	0.3054	Sig
3	Cash and bank Balance and Total Dep.	0.9357	Positive	0.8755	0.0376	0.2254	Sig
4	Cash and bank Balance and Net Profit	0.7161	Positive	0.5129	0.1469	0.8816	Not con.
5	Cash and bank Balance & Loan and Adv.	0.9200	Positive	0.8464	0.0463	0.2780	Sig
6	Loan and Advances and Total Deposit	0.9919	Positive	0.9838	0.0049	0.0293	Sig
7	Cash and bank Balance and Current Liab.	0.9232	Positive	0.8523	0.0445	0.2673	Sig
8	Loan and Advances and Net Profit	0.7850	Positive	0.6163	0.1158	0.6945	Sig
9	Quick Assets and Current Liability	0.9527	Positive	0.9077	0.0278	0.1670	Sig
10	Working Capital and Total Assets	-0.9925	Negative	0.9851	0.0045	0.0270	insing.
11	Working Capital and Total Debt	-0.9895	Negative	0.9792	0.0063	0.0377	insing.
12	Total Debt and Total Deposit	0.9955	Positive	0.9910	0.0027	0.0164	Sig
13	Total Deposit and investment	-0.6715	Negative	0.4510	0.1656	0.9937	insing.

Year	Deposit (X)	Investment (Y)	(X-μX)	(Y-μY)	$(X-\mu X)^2$	$(Y-\mu Y)^2$	(X-μX) X (Y-μY)
2008	34,451.73	6,874.02	(13,227)	(1,280)	174,951,660	1,638,831	16932694
2009	46,698.10	7,399.81	(981)	(754)	961,489	569,089	739712
2010	50,094.73	8,635.53	2,416	481	5,837,394	231,687	1162947
2011	50,138.12	7,423.11	2,459	(731)	6,048,976	534,486	-1798080
2012	57,010.60	10,438.49	9,332	2,284	87,085,258	5,218,005	21316925
Total	238,393.28	40,770.96	0	0	274,884,777.66	8,192,097.24	38,354,198.38

Appendix – 6

Calculation of Co-efficient of Correlation between deposit and total investment SCBNL Bank

Now,

$$\text{Co-efficient of Correlation (r)} = \frac{xy}{\sqrt{(X-\mu X)^2}\sqrt{(Y-\mu Y)^2}}$$

$$= \frac{138,354,198.38}{\sqrt{274,884,777.66}\sqrt{149,596,759.79}}$$

$= 0.9149$

$r^2 = 0.8370$

$$\text{Probable Error (P.F.r)} = 0.6745\ \frac{1Zy^2}{n}$$

$$= 0.6745\ \frac{1Z0.83}{5}$$

$= \quad 0.2949$

Coefficients of correlation of other variables of SCBNL have been calculated accordingly following table present coefficient of regression

The simple correlation analysis of SCBNL between different variables

S.N	Variables	r	Relation	(r^2)	P.E	6 P.E	Sig/insig
1	Cash and bank Balance and NRB Bal.	-0.3169	Negative	0.1004	0.2714	1.6282	insing.
2	Cash and bank Balance and Saving Dep.	0.3938	Positive	0.1551	0.1046	0.6276	Not con
3	Cash and bank Balance and Total Dep.	-0.0833	Negative	0.0069	0.2996	1.7973	insing.
4	Cash and bank Balance and Net Profit	-0.0274	Negative	0.0008	0.3014	1.8085	insing.
5	Cash and bank Balance & Loan and Adv.	-0.3099	Negative	0.0960	0.2727	1.6360	insing.
6	Loan and Advances and Total Deposit	0.9422	Positive	0.8877	0.0339	0.2032	Sig
7	Cash and bank Balance and Current Liab.	-0.1741	Negative	0.0303	0.2925	1.7550	insing.
8	Loan and Advances and Net Profit	0.1122	Positive	0.0126	0.2978	1.7871	insing.
9	Quick Assets and Current Liability	0.1354	Positive	0.0183	0.2961	1.7767	insing.
10	Working Capital and Total Assets	-0.8715	Negative	0.7595	0.0726	0.4353	insing.
11	Working Capital and Total Debt	-0.8717	Negative	0.7598	0.0725	0.4348	insing.
12	Total Debt and Total Deposit	0.9755	Positive	0.9516	0.0146	0.0877	Sig
13	Total Deposit and investment	0.9149	Positive	0.8370	0.0492	0.2949	Sig

APPENDIX-7

Simple Regression Analysis

I. Cash and Bank Balance (CB) on Current Liability (CL) of SCBNL

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	CL[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: CB

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.174[a]	.030	-.293	146.69833

a. Predictors: (Constant), CL

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2018.651	1	2018.651	.094	.779[a]
	Residual	64561.198	3	21520.399		
	Total	66579.849	4			

a. Predictors: (Constant), CL

b. Dependent Variable: CB

I. Cash and Bank Balance (CB) on Current Liability (CL) of NABIL

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	CL[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: CB

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923[a]	.852	.803	50.18495

a. Predictors: (Constant), CL

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43605.790	1	43605.790	17.314	.025[a]
	Residual	7555.588	3	2518.529		
	Total	51161.378	4			

a. Predictors: (Constant), CL

b. Dependent Variable: CB

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	59.545	83.384		.714	.527
	CL	.218	.052	.923	4.161	.025

a. Dependent Variable: CB

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	555.936	590.293		.942	.416
	CL	-.095	.309	-.174	-.306	.779

a. Dependent Variable: CB

Note: the simple regression coefficient of the different variables are calculated using SPSS 12 program, and other calculation are done accordingly

APPENDIX-8

Multiple Regression Analysis

I. Cash and Bank Balance (CB) on Total Deposit (TD) and Net Profit (NP) of SCBNL

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TD, NP[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: CB

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.086[a]	.007	-.985	181.78016

a. Predictors: (Constant), TD, NP

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	491.794	2	245.897	.007	.993[a]
	Residual	66088.055	2	33044.027		
	Total	66579.849	4			

a. Predictors: (Constant), TD, NP

b. Dependent Variable: CB

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	474.274	867.662		.547	.639
	NP	-.018	.592	-.021	-.030	.979
	TD	-.056	.483	-.082	-.116	.919

a. Dependent Variable: CB

I. Cash and Bank Balance (CB) on Total Deposit (TD) and Net Profit (NP) of NABIL

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TD, NP[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: CB

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936[a]	.876	.752	56.37655

a. Predictors: (Constant), TD, NP

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44804.747	2	22402.374	7.049	.124[a]
	Residual	6356.631	2	3178.315		
	Total	51161.378	4			

a. Predictors: (Constant), TD, NP

b. Dependent Variable: CB

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	37.166	99.689		.373	.745
	NP	.259	3.752	.026	.069	.951
	TD	.242	.100	.916	2.417	.137

a. Dependent Variable: CB

Model

Mode	R	R	Adjuste R	Std. Error the
1	1.000[a]	1.000	1.000	.

a. Predictors: (Constant), TD, INV, NP,

Note: The multiple regression coefficients of the different variables are calculated using SPSS 12 program and other calculation are done accordingly.

APPENDIX -9

Hypothesis Test

a. T-test: Test of significance of correlation coefficient between two variables has been done in simple correlation analysis by using SPSS 12 statistical software.
b. F-test: in this test one-way ANOVA table are used.

One-way ANOVA Test

Test of Average value of cash & bank balance to total deposit ratio between two selected banks.

SCBNL (c_1)	**NABIL (c_2)**	**c_1^2**	**c_2^2**
13.69485825	23.81765948	187.5491426	567.280903
26.54493816	32.23905016	704.633742	1039.356355
15.82714711	27.40722929	250.4985858	751.1562174
18.11349439	27.49633215	328.0986792	756.048282
74.18043792	25.37427676	5502.737371	643.8539212
$\sum c_1 = 148.3609$	**$\sum c_2 = 136.3345$**	**$\sum c_1^2 = 6973.5175$**	**$\sum c_2^2 = 3757.6957$**

I. Calculation of sum of individual items:

$\sum T = \sum c_1 + \sum c_2$

$= 148.3609 + 136.3345$

$= 284.6954237$

ii. Calculation of correction factor (c.f)

$$c.f = \frac{(\sum T)^2}{n}$$

$= 284.6954237/10$

$= 8105.148427$

iii. Calculation of sum of square due to total (SST):

$SST = \sum c_1^2 + \sum c_2^2 - c.f$

$= 6973.51752 + 3757.695679 - 8105.148427$

$= 2626.064772$

iv. Calculation of sum of square due to column (SSC)

$$SSC = \frac{(\sum c_1)^2 + (\sum c_2)^2}{n}$$

$$= \frac{(148.3608758)^2 + (136.3345478)^2}{5} - 8105.148 = 14.46$$

V. Calculation of sum of square due to Error (SSE)

$SSE = SST - SSC$

$= 2626.064 - 14.4632 = 2611.601515$

vi. Calculation of Mean sum of square due to column (MSC)

$$MSC = \frac{SSE}{d.f} = \frac{SSE}{C-1} = \frac{14.4632}{2-1} = 14.4632$$

vii. Calculation of Mean sum of square due to Error (MSE)

$$MSE = \frac{SSE}{d.f} = \frac{SSE}{N-C} = \frac{2611.6015}{10-2} = 326.45018$$

viii. $$F = \frac{MSC}{MSE} = \frac{14.4632}{326.45018} = 0.044304635$$