CHAPTER – I

INTRODUCTION

1.1 Background of the study

Financial institution can be considered as the catalyst of the economic growth of the country. The development process of a country involves the mobilization and development of resources. There is range of banking institutions performing different functions. Among the banks, Development Banks play vital role for the development of the country.

Nepal's economy is in the earlier stage of economic development where financial (Banking) sector need to play crucial role in order to accelerate this pace as these sector can accumulate scattered saving for capita formulation. Developing country such as Nepal aspires for a rapid economic growth, which required additional capita formation with the sufficient amount of investment. No one can deny the fact that a country requires favorable economic environment to achieve economic development. Financial institution plays vital role to support the country's economic development.

Banking system has evolved itself as an integral part of trade, commerce and industry. At present, no banker can survive for long run without appropriate footing of economy and no economy can operate without proper application of banking system in state. Although the business of banking is as old as authentic history, banking institutions have few simple operations up to the satisfaction of individual wants.

This is to be developed by complicated mechanism of modern banking to the satisfaction of the whole community with secure speedy application of capital with slow seeking employment. Thus it provides the very lifeblood of commerce.

To provide capital and technical assistance for the development of basic infrastructure of the country is the objective of Development Banks. In Nepal, Development Banks are established under the provision of Development Bank Act, 2052 and Company Act for the investment and development of particular sector of country.

Development bank creates the proper environment in the country for the development of rural, industrial and agricultural sectors of the country. Development banks provides short-term and long-term loan to the industries and they provide capital, technical assistance, managerial and administrative suggestions to the development of industrial, agricultural and rural sector of the country.

Proper financial decision-making is extremely important in banking transaction for efficiency and profitability. Most of the financial decisions of the bank are concerned with current assets and current liabilities.

Ratio analysis is useful tools for evaluating the liquidity and solvency position of the enterprises. They point out the liquidity position of an organization. They point out the liquidity position of organization to meet short-term and long-term obligations.

In financial analysis a ratio is used as a benchmark for evaluating the financial position and performance of a firm. The absolute accounting figures reported in the financial statement do not provide a meaningful understanding of the financial position of a firm. Ratio helps to summarize the large quantities of financial data and to make qualitative judgments about the firms' financial performance.

1.2 Focus of the Study

The concept of financial institutions in Nepal was introduces when first commercial bank, the Nepal Bank Limited (NBL) was established in 30th kartik, 1994 B.S as a semi-government organization. Development Banks are the heart for development of rural, industrial and agricultural sector of the country.

Bank is a business organization where monetary transaction occurs. It creates fund from its clients saving and lends the same to needy person of business companies in term of loans, advances and investment .so proper financial decision making is more important in banking transaction for its efficiency and profitability.

Most of the financial decisions of a bank are concerned with current assets and current liabilities, so this study is a reference regarding the cash and liquidity position of Nepal Development Bank Ltd. (NDBL) and Development Credit Bank (DCBL).

1.3 Introduction of the company under the study

1.3.1 Introduction to NDBL

Nepal Development Bank Limited (NDBL) is the first national level development bank in private sector. It has been established under the Development Bank Act 2052, (1996) and Company Act in 2055 BS. NDBL has been actively participating to cater the demand of medium and long-term finance for the industrial, commercial, agricultural, tourism, infrastructure sectors and other services by offering various banking facilities.

NDBL has been playing a crucial role as the financial catalyst of industrial development. NDBL is still the clear market leader for industrial term lending in terms of its contributions in the financial sector. It provides loans to assists industries with long gestation period through out their project development cycle, right from formulation or conceptual stage to the stages of nurturing and project establishment till they are well established and capable of self sustaining in their operation which is in fact, very costly financing but equally important for real industrial development in the country.

The capital Structure of NDBL is as follows.

Authorized Capital	NRs. 320 million
Issued Capital	NRs. 160million
Paid Up Capital	NRs. 160 million

The share holding pattern is illustrated as follows:

1. Private Sector Promoters   31%

2. Institutional Promoters   29%

         Nepal Rastra Bank (NRB)

         Employees Provident Fund (EPF)

         Rastriya Beema Sansthan (RBS)

         Nepal Co-operative Society Ltd. (NCSL)

3. Industrial Development Bank of India (IDBI)   10%

4. General Public   30%

         Total   **100%**

1.3.2 Introduction to DCBL

Development Credit Bank Limited (DCBL) was established in the year 2001 AD under the provision of Company Act, 1997 and Development Bank Act, 1996. It is the first National level private development bank without having any direct involvement of Government of Nepal and/or Nepal Rastra Bank in the equity and/or management of this bank.

DCBL is the first and only financial institutions of Nepal to acquire the ISO 9001:2000 certification, which reflects the commitment of the management towards effective quality management within the organization.

DCBL has a history of six years of successful banking and has stood the test of time by growing steadily, offering vast, varied and versatile services with a personal touch. It is the first and only national level development bank to distribute cash dividends to its shareholders for these consecutive years.

The capital structure of DCBL is as follows.

Authorized Capital	NRs. 320 million
Issued Capital	NRs. 240million
Paid Up Capital	NRs. 240 million

The share holding pattern is illustrated as follows:

1. Private Sector Promoters	51%	
2. Institutional Promoters	19%	
Pan World International P. Ltd.		.5%
Pan World Holding P. Ltd		.5%
3. General Public	30%	
Total	**100**%	

1.4 Statement of the problem

The management of cash and liquidity is synonymous to the management of working capital. It has been regarded as one of conditioning factor in the decision-making issues. It is very essential to analyze and find out problems and its solutions to make efficient use of funds for minimizing the risks to attain profit objectives.

This study is concentrated to compare various accounting ratios of NDBL and DCBL. Cash is the most important current assets for the operation of the business firm, which includes coins, currency and cheques, held by the firm. The adequate level of cash is the secret of success of the every business organization.

It is told that Development Banks are not performing well in our country. They have bad-loan flow and banks are going to be bankruptcy. They are not expanding their operation all over the country.

So, this research paper is expected to seek the answer of following questions.

1. Whether the bank allocates the cash 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?
6. How they are operating in rural areas?

1.5 Objective of the study

The prime objective of this study is to comparatively examine and analysis the liquidity position and cash management practices of NDBL and DCBL i.e. management of individual current assets like cash and bank balance. However to drag out finding regarding the objective, this study specifically aimed as follows.

1. To examine and critically analyze the cash management practices of NDBL and DCBL.
2. To know the various ratios of NDBL and DCBL
3. To evaluate its major significance from findings of the study.
4. To make comparative study of profitability position of NDBL and DCBL.
5. To make recommendations from the finding of the study.

1.6 Significance of the study

This study entitled **"Cash and Liquidity Management of Development Banks in Nepal"** is focused on the liquidity management in general and cash management in particular. This study aimed to find out the financial position of selected banks in relation to ratio analysis. So the study might be helpful for the management of the concerned bank as well as it might be valuable for the researcher, scholars, employees, stakeholder and student who want to study into the liquidity management of NDBL and DCBL

The study has multidimensional significance, which can be divided into four boarder headings.

1.Its significance to shareholders

The study might be helpful to aware the shareholders regarding its liquidity profitability of their banks. The comparison will help them to identify the productivity of their funds in each of these two banks.

2.Its significance to the management

The study might be helpful to go deep into the matter as to why the liquidity management of their banks is better than their outsiders.

3. Its significance to the outsiders

Among outsiders, mainly the customers, financing agencies, stock exchange, students and stock trader are interested in the performance of the banks and customers can identify to which bank they should go.

4. Its significance to the policy makers

Policy makers here refer to government and Nepal Rastra Bank. The study is helpful   to them while formulating the policy regarding development banks.

1.7 Limitation of the study

The study has been conducted with certain limitations and constrains. The main limitations are as follows.

1)   This study has focused only two banks NDBL and DCBL

2)   The study is mainly based on secondary data. It is done mostly on the basis of the published financial document, like balance sheet, profit and loss account and other related journals, magazines and books etc.

3)   The study follows with specific tools such as ratio analysis, mean, correlation, hypothesis etc.

4)   The study has covered only 5 years data from FY 2058/059 to 2062/063.

5)   The ratios were analyzed based on previous year's financial statement of the selected banks.

1.8 Organization of the study

Considering the objectives in mind, the study has been organized into the following five chapters.

Chapter 1: Introduction

This chapter includes background information on the subject matter, focus of the study, profile of sample banks, statement of the problems, objectives of the study, significance of the study, limitation of the study and organization of the study.

Chapter 2: Review of Literature

This chapter includes the relevant previous writing and studies to find the existing gap; review of textbook, dissertation thesis has been included in this chapter.

Chapter 3: Research Methodology

This chapter contains research design, population and sample size, data collection procedure and tools used for analysis.

Chapter 4: Data Presentation and Analysis

This chapter consists of systematic presentation and analysis of financial statement employing financial and statistical tools. It also includes major findings.

Chapter 5: Summary, Conclusion and Recommendations

This chapter includes the summary, conclusion and recommendations of the study.

CHAPTER – II

REVIEW OF LITERATURE

2.1 Theoretical Review

Review of literature is a stock of available literature in the field of research. Review of literature is an essential part of the study. It is a way to discover what previous researches have done and what is still need to be done. It refers to the reviewing of the past studies in the concerned field, such studies could be thesis that are written earlier, books, articles, journals or any sort of publications concerning the subject matter, which were written priory. While conducting the research study, previous studies cannot be ignored, as those instructions would help to check up the chances of duplication in the present study. Thus one can find what research studies have been conducted and what remains to go with.

2.1.1 Conceptual Framework

One of the major responsibilities of management is to plan; control and safe guard the resources of the enterprises. Two kind of resources flow from any business they are cash and non-cash assets. This chapter focuses on the cash planning and control; cash inflows (i.e. cash received) and cash outflows (i.e. payment of cash). The planning and controlling of cash inflows, cash outflows and the related financing decision is important in all enterprises. The cash budgeting is an effective way to plan and control the cash flows and effectively use excess cash.

"For the Development bank, sufficient liquid assets should be maintained to meet day to day needs of customers as well as overcome the withdrawal vulnerability of large deposits in the form of cash. At the same time, there are statutory reserve requirements of control bank compelling the development bank to maintain cash in their vaults and account in order to protect them from liquidity brunch. Development bank has to maintain an appropriate cash balance to meet banking transactions and make payment for purchase taxes, operating expressing, dividends,

interests etc. in usual course of business, hence the bank manages must be cash conscious".[1]

A primary objective is to plan the liquidity position of the company as a basis for determining future borrowing and future investments. For example, excess cash if not invested, incurs an opportunity cost that is loss of the interest that could be earned. The timing of cash flows can be controlled in many ways by management, such as increasing the effectiveness of credit and collection activities, making payment by time draft rater than cheque, and the last day of discount period batching payments and giving discount on cash sale. Many lending agencies require cash flows projections before granting loan. Cash management is important in all enterprises, whether large or small.

The focus of cash planning, time horizons in cash planning and central approach used to develop a cash budget, financial accounting approach to compute cash flows, central of the cash position, and technique for improving cash flows, planning and controlling cash in a non-manufacturing company.

2.1.2 Cash Management

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

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

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

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[1] Dr. Manohar Krishna Shrestha, "Finanacial Market & Institution", Kathmandu, Asmita Books Publishers & Distributors (2004) p.257

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

Therefore, for its smooth running and maximum profitability, proper and effective cash 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 cash has been regarding one of the important factors in the decision-making. Cash management is a professional highly refined activity.

2.1.3   Motive for Holding Cash

The firm holds cash for various motives, they are:

1.   Transaction Motives

The principal motive for holding cash is to conduct day-to-day operations. A cash 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, cash are generated from sales of goods or services, return on outside investment etc.

2.   Precautionary Motives

Cash held in reserve for random, unforeseen fluctuation in cash inflow and outflow. For example: 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 cash balance that is held to enable the firm to purchase that might arise. For example: purchasing of raw material at a reduced price on payment of immediate cash falls, purchasing at favorable price.

4.   Compensating Balance/Compensative Motives

The cash balance that a firm must have to maintain with a bank, to compensate that 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 bank provides various services to the firm like; payment of check information of credit, loan etc.

2.1.4 Different Techniques of Cash Management

1) Cash Budget

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

2) Cash Planning

Cash panning can help anticipate future cash flows and needs of the firm and reduces the possibility of idle cash. Cash planning is a technique to plan and control the use of cash. The forecasts may be based on the present operation or anticipated future operation. Cash plan are very crucial in developing the overall operation plans of the firms. Cash planning may be done on daily, weekly or monthly basis. It depends upon the size of the firm and philosophy of management.2

3) Long-term Cash Forecasting

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

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[2] I.M Pandey, "Finanacial Management" New Delhi, Vikash Publishing House. (1992) p.843

uses of long-term cash 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 cash forecasting not only reflects more accuracy the impact of any recent acquisitions but also foreshadow financing problems; these new additional may past for the company.

4) Short-term Cash Forecasting

There are two common methods of short-term cash 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 cash items of income and expenses involve flow of cash: this method is favored to keep a close control over cash.

b) Adjusted Net Income Method

This method of cash 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 cash at some future data and to show whether the company can generate this money internally or not, how much give will either borrow or rise in the capital market.

2.1.5 Determining the Optimum Cash Balance

Out of total requirement how much to maintain in cash and how much in marketable securities is the crucial question, which needs the careful analysis of the behavior of cash inflows and outflows. Since the cash inflows and outflow may not synchronize all the time, the cash 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 cash and liquidity portion of a bank. S/he should also be foresighted and able predict future demand and supply of liquidity. Though the cash is most liquid assets, it is not thought good to hold large quantity of cash, because cash involves high cost. If firm maintains less cash balance more than it needs, the firm may loose many opportunities. But it is difficult to know how much cash should organization hold. However, any organization makes holding policy and exercise to keep cash as less as it can. The financial manger should determine the appropriate amounts of cash balance, a trade-off balance, and if not, its liquidity position becomes weak and it suffers from shortage of cash to make payment. But investing released funds in some profitable opportunities can attain a higher profitability. If the firm maintains a high level of cash balance it will have a sound liquidity position but forego the opportunity to earn interests. Thus, the firm should maintain an optimum cash balance. To find out the optimum cash 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 cash balance and ways to transfer fund from cash to marketable securities when the balance exceeds the requirement and from marketable securities to cash when the balance slides down below the minimum need. The models are:

2.1.5.1Optimum Cash Balance Under Certainty; Baumol's Model

In view of minimizing the opportunity cost of holding cash and maximizing the return on the available funds, the cash 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 cash needs with certainty.
2) The firm's cash payment occurs uniformly over a period of firm.

3) The opportunity cost of holding cash is known and it does not change over time.

4) The firm will incur the same transaction cost whenever it converts securities to cash.

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

Where,

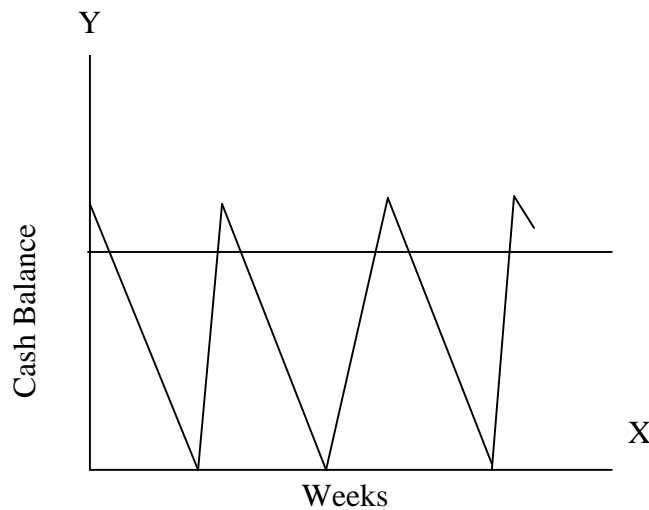b=Fixed transaction cost per transaction

T=total cash need over the period

I=opportunity cost period

C*=Optimal cash conversion size

Figure 2.1 Baumol's Model for Cash Balance

Given its assumption, the model prescribes an optimal size of cash 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 cash balance and various costs associated with cash maintenance.

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Figure – 2.2 Relationship Between Average size of cash balance & cash maintenance

Optimum Cash Balance
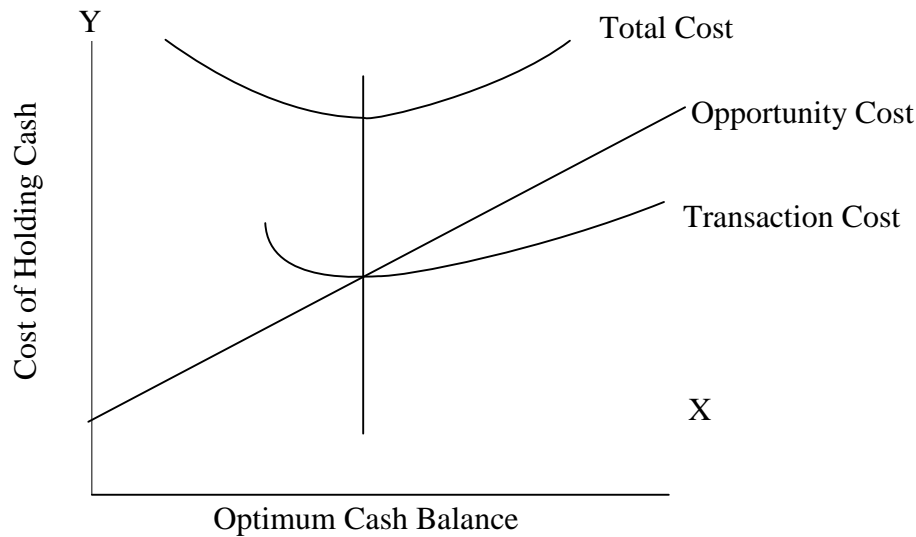
2.1.5.2 Optimum Cash Balance Under Uncertainty; The Miller – Orr Model

The limitation of the Baumol model is that it does not allow the cash flows to fluctuate. Firms in practice do not use their cash balance uniformly nor are they able to predict daily cash inflows and outflow. The Miller-Orr Model cash flow variation[3]. It assumes that net cash 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 cash flows fluctuate randomly and hit the upper limit, then it buys sufficient marketable securities to come back to a normal level of cash balance (the return point). Similarly, when the firm's cash flows wander and hit the lower limit, it sells sufficient marketable securities to bring the cash balance back to the normal level (the return point).

Under this model return point (Z) = $3\sqrt{\dfrac{3b\dagger^2}{4i}}$

> Where,
>
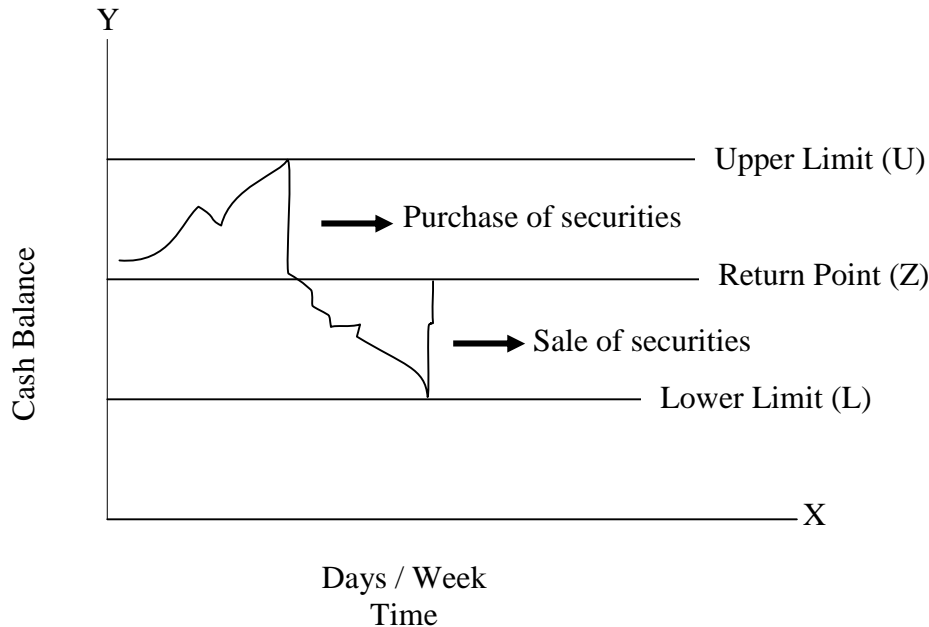> b=Fixed transaction cost per transaction
>
> σ=Variance of daily weakly cash flow
>
> I=Dally/weakly interest rate on marketable securities

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[3] Miller,M.H and Orr, D.,A model for the Demand for money by firms, Quarterly journal of econimics, no.80, August 1966,p.p. 413-435

Z=Collection return point

L=Minimum cash balance

Figure – 2.3 Miller-Orr model

Days / Week
Time

2.1.6 Liquidity Management

The Managing the optimum level of liquidity to operate smoothly with sound health in present as well as future is known as Liquidity Management. The term liquid asset is used to describe money and assets that are readily convertible into money. Different assets may be said to exhibit different degrees of liquidity. Money itself is, by definition, the most liquid assets; other assets have varying degree of liquidity, depending upon which they can be turned into cash.[4]

Cash balance is perfectly liquid asset. To hold it in large quantity is not thought good. High cash balance increases the cost. Therefore, any organization doesn't want to hold cash more than it needs. But it is difficult to know what proportion of cash the organization should hold. However, any organization makes cash holding policy and exercises to keep cash as less as it can.

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[4] James C. Van Horne, "Financial Management and Policy", New Delhi, Prentice Hall of India (2000) p.359

2.1.7 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
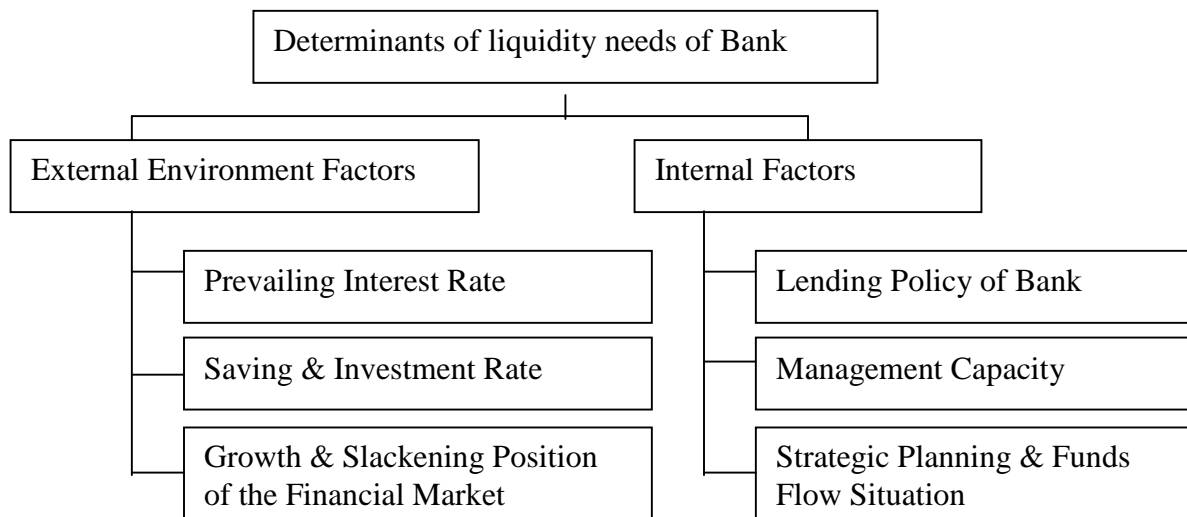
Demand & supply of Bank Liquidity: Cash at bank and investment, which can be changed into cash immediately, is liquidity is maintained at bank by current saving

& 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 banks' Liquidity Need
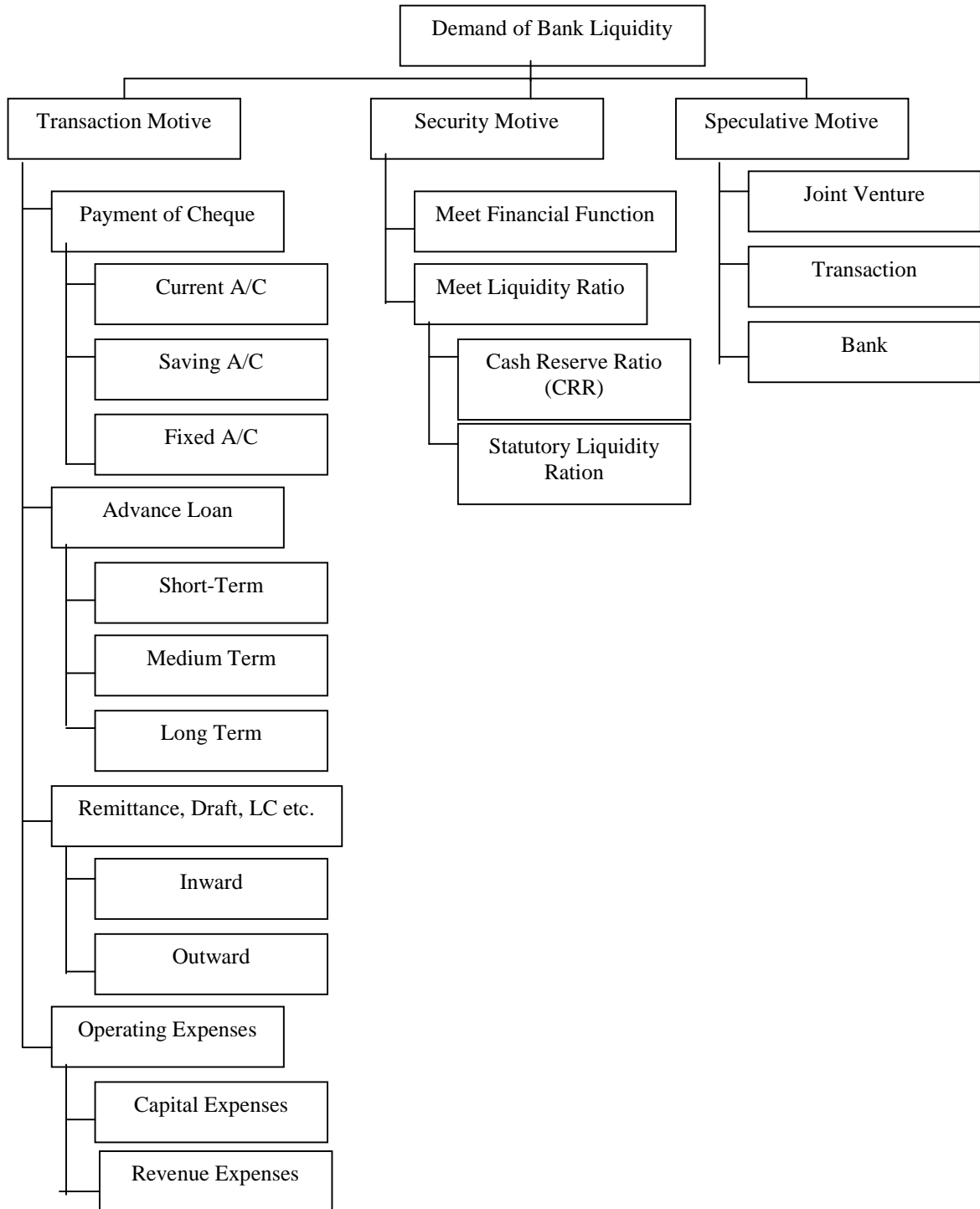
2.2   Review of Previous Studies

2.2.1 Review of Articles (Journals)

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

The well-known professor Weston and Brigham has given some theoretical insight into the cash 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 cash flows, expending collection and cheque clearing, using float, cost of cash management determining the minimum cash balance, compensating balance overdraft system cash management, management of account receivable credit policy, evaluating changes in credit policy.

From the book entitled 'financial management' written by M. Khan and P.K. Jain, cash management is one of key areas of "working capital management". Apart from the fact that it is the most liquid current assets, can be reduced because the other major liquid assets i.e., receivable and inventory get eventually converted in cash. This underlines the significances of cash management.

The well know professor Dr. Radhe S. Pradhan has given some theoretical insight into the cash management after the various studies on it. In the word of Dr. Pradhan "the cash management aims at reducing the amount of cash hold to the minimum necessary to conduit business". He has described the various aspect of cash management which are as follow; significance of cash management, motives for holding cash, function of cash management, advantage of adequate cash, cash forecasting and budgeting cash management techniques and the determinant of the optimum cash balance. He told that any firm hold the cash with transaction motive, precautionary motive and speculative motive and the cash management techniques generally consist is of speculative motive and the cash management techniques generally consist is of accelerating collections, controlling disbursements and synchronizing cash flows. The technique that be used to speed up collection sere (a)

concentration banking and (b) lock box system. Cash management techniques are generally concerned with accelerating collection and slowing down disbursements. Firms can reduce their cash by holding marketable securities, which can be sold on short notice at close to their quote price.[5]

For the cash management, Dr. Bihari Binod Pokharel and Mr. Ujwal Raj Gautam, in their book fundamental of financial management have given some conceptual ingredients. In the words we should attempt to accelerate collections and handle disbursement so that maximum cash is available. Collection cash is accelerated by means of concentration banking, a lock box system and other specific pick plans. A firm can reduce its cash balance by adopting quicker mechanism of transferring fund. The optimal level of cash depends upon the predictability of future cash flows, their volatility, fixed cost of security transaction and the carrying cost of holding cash; that is interest rate foregone and marketable securities.[6]

Professor Manohar K. Shrestha 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 turnover 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

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[5] Dr. Radhe S. Pradhan, "Financial Management", Kathmandu, Buddha Academic Publishers (2004), p.310
[6] Dr. Bihari Binod Pokharel & Ujwal Raj Gautam,"Fundamentals of Financial Management", Kathmandu, M.K. Publishers & Distributors (2061) p.256

determination right, combination of short termed and long term sources of funds to finance working capital.[7]

Radhe Shyam Pradhan and Kundan Dutta Koirala 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".

Major findings of the study were:

- Inventory management was of great significant in manufacturing corporations and the management of cash 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.

- 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 manufacturing and non-manufacturing corporations. However the manufacturing corporations have consistently more investment in cash and receivables as compared to non-manufacturing corporations.

- The management of cash involves more problems as compared to the management of account receivables and inventory. However inventory management more problematic to manufacturing corporations and rhe management of cash and receivables is more problematic to non Manufacturing Corporation.

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[7] Dr. Manohar Krishna Shrestha,"Working Capital Management in PEs, A Study on Financial Results and Constraints", ISDOC, Kathmandu, Vol-8, No 1 (4 July 82- June 83)

- To provide a research for routine net outflows of cash is the major motive for holding cash in Nepalese organizations.
- The major factors affecting the larger investment in receivables found to be the liberal the credit policy followed by Nepalese corporations. The late paying practice of customers is also responsible for larger investment in receivables. However corporations are reluctant to take inefficient collections of trade credit as one of the major factors affecting the receivables.

In another articles, published by Dr. K. Acharya, 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 lock 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 know satisfactory and some PE's are even facing the under utilization 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 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.[8]

Mr Buddhi pd. Acharya, an NTC 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 quite 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.[9]

2.2.2 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.

1. Kalpana Dhakal[10] in her study on a comparative study on working capital management of Nepal Bangladesh Bank Ltd. and Everest Bank Ltd. is considering the financial statement of both banks for the period of five years from fiscal year 2055/56 to 2059/60. 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 cash & bank balance and government securities

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[8] Dr. K. Acharya, Problems and Implements in Management of Working Capital in Nepalese enterprises, ISDOC Volume 10, (1985).

[9] B.P.Acharya, Doorsanchaar ko Bartaman Abastha ra Nirakaran, Sanchaar Telecommucation Corporation, Silver Jubilee Special Issue, Kathmandu, NTC (2000)

[10] Kalpana Dhakal,"A comparative study on working capital management of NB Bank Ltd. & Everest Bank Ltd," Unpublished Master Degree Thesis, T.U. (2002)

percentage are higher on EBL than NBBL. The net working 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 where as 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:

- Both banks should adjust its policy of investment on loan and advances with collected fund and increase their proportion in total current assets.
- Both banks have to increase the current assets to maintain the normal standard of current ratio.
- Both banks should give proper attention on collection of over data loan and advances and utilization of idle fund as loan & advance.
- To eradicate the negative working capital both banks should have to formulate and implemented suitable working capital policy rather than conservative working capital. For this, both banks should have to keep optimum size of investment in current assets and current liabilities and regular check of working capital.
- Reduce its cost by reducing high interest cost carrying deposits and operation in proper & efficient way.

2. Keshav Gadtaula[11] In his study on working capital of Nepal Tea Development Corporation (NTDC) 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.

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[11] Keshav Prasad Gadtula," Working Capital Management of Nepal Tea Development Corporation", Unpublished Master's Degree Thesis, T.U. (2051 B.S.)

- The company had higher percentage of current assets in total assents that denoted greater liquidity of the firm and lower risk of technical insolvency.
- Current asset to sales ration 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.
- Net working capital turnover ration 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 cash holding structure to the operational needs.

3. Niraj KC[12], in 2000, had done 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 cash, bank balance, loan advances and government securities.
- Out of the major three currents assets components, cash 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.

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[12] Niraj K.C.,"Comparative Study of Working Capital Management of NBL and NABIL", Unpublished Master's Degree Thesis, Shankar Dev Campus, Kathmandu (2000 A.D.)

- The trend of quick ration, cash and bank balance to deposit ration, and cash 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.

- Fixed deposit to total deposit ratio of NBL, were always higher than same of NABIL for the study period.

- The turnover position of NBL is in fluctuating trend but turnover position of NABIL is decreasing in first three years then increasing in last two years of study period. NABIL has the better utilization of deposit in income generation than NBL. Also the NABIL has better investment efficiency on loan advance.

- Large portion of long-term debt is used in current assets of both bank but relatively it is higher on NBL 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 NBL than NABIL.

- The profitability position of NABIL is far better although NBL earned higher interest 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 share holder 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.

4. Dependra Raj Sharma[13] has done a research on "A study on cash 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

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[13] Dipendra Raj Sharma,"A Study of Cash Management of Nepal Battery Co.Ltd." Unpublished Master's Degree Thesis, T.U. (1999)

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 as follows:

- To analyze the liquidity composition of working capital. Assets utilization and profitability position of NBCL.
- To study the relationship between sales and different variables of working capital of NBCL.

Main point of his study were,

- Major component of working capital are cash 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.
- 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 affect 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.

5. Jivan Nath Sapkota[14] has done a research on "A study of working capital management of Himal Cement Company Limited". He used ratio analysis using financial statement

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[14] Jivan Nath Sapkota,"A Study on Working Capital Management of Himal Cement Co. Ltd.", Unpublished Master's Degree Dissertation, T.U. (1994)

of the company for five years from 2044/45 to 2048/49. The main objectives of this study are.

- To examine the current assets and current liabilities position of HCCL.
- To reveal the specific performance in working capital management of HCCL.
- To understand the accuracy of working capital depending upon the nature of financing by CAs or not.
- To give the main ideas about the importance of working capital management for the enterprise's progress and recommend measure for improvement.

His findings were,

- Major part of current assets is occupied by inventory.
- Inventory turnover ratio, cash conversion cycle a receivable conversion period is found at satisfactory level.
- Poor liquidity position.
- Poor profitability position of the firm i.e. profit making capacity is low due to low utilization of plant capacity, inefficiency in sales and operations activities and lack of efficient management of the company.
- High operation inefficiency due to high production cost.
- Management of receivable seems to be far better than other aspects.

He has suggested to determine certain rate of return on investment and to set certain sales target. He also recommended that suitable working capital should be formulated and implemented to keep optimum size of investment in each component of current assets proper attention should be given to employee planning.

6. Prem kumar Shrestha[15] has carried out his research on "A study of working capital management in Bhrikuti Paper Mills limited". His main objective was to analyze the current assets and current liabilities and their impact and relationship to each other.

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[15] Prem Kumar Shrestha,"A Study of Working Capital Management in Bhrikuti Paper Mill Ltd.", Unpublished Master's Degree Thesis, Shankar Dev Campus, T.U. (2002)

His major finding were as follows,

- Cash & bank balance holds the part of current viz. cash and bank balance, inventories and receivables.
- There is increasing trend in liquidity and decreasing trend in current assets turnover.
- Average cash and bank with respect to current asset and total assets is increasing year after year during his study period and cash and bank balance holds largest amount of idle cash balance.
- 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.
- Due to lack of definite credit and collection policy, receivable has increased year after year.

7. Uttam Bahadur Thapa[16] has conducted his study on" Cash and Liquidity Management practices before and after financial sector reform programme in Nepal Bank Ltd." The objective of the study was comparatively examined and analysis the liquidity position and cash management practices in Nepal Bank Ltd. Before and after financial sector reform programme on liquidity position of the bank.

Major findings of the study are:

- Average cash 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.
- The turnover ratios of NBL before FSRP have decreasing trend.

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[16]Uttam Bahadur Thapa,"Cash and Liquidity Management: Practice before and after financial reform programme in Nepal Bank Ltd.", Unpublished Master's Degree Thesis, T.U. (2004)

8. Rajendra Giri[17] has conducted his study on "Working capital management a case study of Balaju textile industry ltd".

Objectives
- To point out the need to control in cash type of cash over a period of time and to know the nature of financing cash or not.
- To check if there is the variability of inventory over the period of time.

Major findings
- 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.
- All the findings indicate the poor performance of corporation.

9. Dhruba Nath Yogi[18] has conducted his study on "A study on Working capital Management of Nepal Lever Ltd". The main objectives of the study were to analyze the liquidity, composition of working capital, assets utilization and profitability position and to examine the relationship between liquidity and profitability of NLL.

Major findings of the study are,
- Inventory holds the largest portion of the total assets followed by miscellaneous current assets, cash 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.
- The profitability position of the company is in continuously increasing trend. It is satisfactory. To conclude, he stated satisfactory working capital management of NLL.

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[17]Rajendra Giri,"Working Capital Management: A Case Study of Balaju Textile Industry Ltd.", Unpublished Maser's Degree Thesis, T.U. (1986)
[18] Dhruba Nath Yogi,"A Study on Working Capital Management of Nepal Liver Limited", Unpublished Master's Degree Thesis, T.U. (1999)

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

Research Methodology is the way to solve problems systematically. Research methodology refers to the various sequential steps to be adopted by a researcher. It describes the methods and process applied in the entire aspect of the study. It is a way to systematically solve the research problem. It may study the various steps that are generally adopted by a researcher in studying his/her research problem along with the logic behind them.[19] This chapter deals with the research design, nature of data, data gathering procedure, population and samples and data processing procedures.

3.2 Research Design

Research design refers to the conceptual structure within which the research is conducted. A well-set research design is necessary in order to make any types of research, which fulfills the objectives of the study. This research design is basically the cash and liquidity management of NDBL and DCBL. Analytical and descriptive approaches were used to evaluate the cash and liquidity position of these banks. The points were discussed basically on the basis of secondary data and financial statement of past five years taken from the banks.

This research is a historical research design because is concerns with the past phenomenon. It is a process of collecting, evaluating and verifying the past evidence systematically to reach in conclusion. So, this study is the analysis of accounting ratios of selected development banks on the basis of historical data and records of the banks.

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[19] C.R. Kothari, "Quantitative Techniques", New Delhi: Vikash Publishing Pvt. Ltd. (1984) p.10

3.3 Populations and Sample

Since the study was related with cash and liquidity management of Development Banks. In this study, the whole development banks could not be analyzed. So, the whole population was constrained by the taking sample. Out of 9 development banks established till 2062 Charta, only two development banks were taken as sample to meet the requirement of at least 10% out of population. The names of sample development banks were as follows:

1)   Nepal Development Bank Ltd. (NDBL)
2)   Development Credit Bank Ltd. (DCBL)

3.4 Data Collection Procedure

Data collection procedure is the method, technique and process of gathering the necessary information for the study. The necessary information may already recorded or to be collected or both. The data's were collected by applying following procedure:

3.4.1 Primary Data

Primary data were gathered to ascertain the views of executives and employee of sample banks about the liquidity position of the banks. For this purpose some questionnaires were developed and sent them to acquire the necessary information. In this study primary data will used if necessary.

3.4.2 Secondary Data

These data were related to quantitative nature that they might be Balance Sheet, Income Statement and other information, which were necessary for the study. Data were acquired from annual reports, web page publications of sample banks and different newspapers. In order to process the data, financial statement and other available information were reviewed. These data were grouped in different tables and charts according to their nature. Most of the data have been complied in one form and processed and interpreted as required.

3.5 Tools of Data Analysis

Financial as well as the statistical tools are used to make the analysis more convenient, reliable and authentic. For data analysis, different items from the balance sheet and other

statements are tabulated. Their ratios, percentages, mean, standard deviations and coefficient of variations are 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 of 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:

3.5.1 Financial Tools

Financial ratios are calculated to ascertain the liquidity position of the firm. It is the 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 development banks. In this study following financial tools are used.

3.5.1.1 Ratio Analysis

Ratio analysis is the most important financial to analyzed the liquidity position of banks. The ratios used in this study are as follows: Liquidity ratio, Activity Ratio and Profitability Ratio. Likewise, composition of working capital in terms of cash and bank balance percentage, loan and advances percentage, government securities percentage and miscellaneous current assets percentage are also calculated.

3.5.1.1.1 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 cash 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. Cash and Bank Balance to Total Deposit Ratio

This ratio is calculated by dividing cash 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.

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

b. Current Ratio

Current ratio reflects the strength of current assets available with the company over its current liabilities into cash 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. Cash 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 cash 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. Saving Deposit to Total Deposit Ratio

Saving deposit is an interest bearing short-term deposit. The ratio is developed in order to find out proportion of saving deposit, which is interest bearing and short term in nature. It is calculated by dividing the total amount of saving deposits by the amount of total deposits, which can be expressed as follows:

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

g. Cash and Bank Balance to Current Liabilities Ratio

This ratio is obtained 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.

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

h. Cash and Bank Balance to Current Assets Ratio

This ratio is calculated dividing total cash and bank balance by current assets. Cash means the firm's holding of currency and demand deposits. It is most liquid assets because a firm disburses it immediately with out any restriction.

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

i. 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.

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

3.5.1.1.2 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 cash. 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 Saving Deposit Ratio

This ratio is also employed for the purpose of measuring utilization of saving deposits in generating revenue by giving loan and advances to the client i.e. to determine to what extent collected saving deposit amount is being deployed in providing loan and advances to generate income. Saving deposits are interest-bearing obligation for short-term purpose

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whereas loan and advances are the short investment for revenue income. This ratio indicates how much short-term interest bearing deposits are utilized for income generating purpose. The formula for this ratio is as follows:

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

b. 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 where as loan and advances are the major sources of investment in generating income for Development banks. It is calculated as follows:

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

c. 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.

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

d. 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.

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

3.5.1.1.3 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.[20] 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 dividing net profit by total assets. This ratio represents the relationship between net profit and assets. Net profit indicates the profit after deduction on interest and tax. Total asset means the assets that appear in assets side of balance sheet. The increasing ratio shows favorable situation for the banks. The higher ratio also shows that the bank could well manage their overall operations. But the lower ratio shows vice-versa.

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

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[20] Surendra Pradhan "Basic of Financial Management," Kathmandu: Education Enterprise. (2000) p.53

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

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.

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

3.5.1.1.4 Leverage Ratio

Leverage ratio is also known as capital structure ratio, which shows long-term solvency of banks. Generally capital refers to the composition of debt and equity component on overall capital of a firm. These rations are calculated to judge the long-term financial position of the banks. Under this group the following ratios has calculated the following ratios to obtain the stated objectives of the study.

a. Total Debt to Equity Ratio

This ratio is calculated dividing total debts by total shareholders' equity. Total debts refer to sum of long-term debt, current liabilities and debentures. This ratio shows the relationship between debt capital and equity capital. High debt-equity ratio indicates greater financing by debt holders than those of equity holders. From the creditor's viewpoint, high debt to equity ratio of the bank is more risky to them. It means the bank fail to satisfy creditors.

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debts}}{\text{Shareholders' Equity}}$$

b. Total Debt to Total Assets Ratio

This ratio is calculated by dividing total debts by total assets. This ratio shows the relationship between total debt and total assets of the banks. The higher ratio indicates the greater portion of outsider's fund investment in term of the banks' assets.

$$\text{Debt to Total Assets Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

c. Interest Coverage Ratio

This ratio is computed dividing earning before interest and tax (EBIT) by interest charges. This ratio evaluates the debt serving capacity of the banks. The higher ratio shows that bank can pay the interest easily.

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest Charges}}$$

d. Long-term Debt to Net Worth Ratio

This ratio is calculated dividing long term debts by net worth. This ratio measures the proportion of long-term debt and net worth employed in the capital structure. The higher ratio indicates proportion of outsiders claim in capital structure.

$$\text{Long term debt to net worth ratio} = \frac{\text{Long Term Debts}}{\text{Net Worth}}$$

3.5.2 Statistical Tools

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

3.5.2.1 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,

$\sum X$ = Sum of value of all term and

N   = Number of terms

3.5.2.2 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   (read as sigma), standard deviation is extremely useful for judging the representatives of the mean. Standard deviation is represented as:

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

Where,

s = Standard deviation,

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

n = Numbers of items

3.5.2.3 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,

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

Where

CV = Coefficient of variation,

s = Standard deviation, and,

$\overline{X}$ = Arithmetic average

3.5.2.4 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."[21] 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.

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

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[21] Gupta, S.C. (1995) "Fundamental of Statistics", New Delhi, Himalaya Publishing House, p.51

Where,

n = number of observation in series x and y,

$\sum x$ = Sum of observation in series x,

$\sum y$ = Sum of observation in series y,

$\sum x^2$ = Sum of square observation in series x,

$\sum y^2$ = Sum of square observation in series y,

$\sum xy$ = 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. Cash and bank Balance and NRB Balance
2. Cash and bank Balance and Saving Deposit
3. Cash and bank Balance and Total Deposit
4. Cash and bank Balance and Net Profit
5. Cash and bank Balance and Loan and Advance
6. Loan and Advances and Total Deposit
7. Cash 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:

Probable Error (PE) = 0.6745 x $\dfrac{1-r^2}{\sqrt{n}}$

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

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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.

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

3.5.2.5 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

$$\sum Y = Na + b \sum x \qquad\qquad\qquad (2)$$

$$\sum XY = a \sum X + b \sum X \qquad\qquad\qquad (3)$$

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:

3.5.2.5.1 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. Cash and bank balance on current liability

$Y = a+bX$ ....(1)

Where,

Y= cash and bank balance

a=regression constant

b= regression coefficient

X = current liability

This model has been constructed to examine the relationship between Cash 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. Cash and bank balance on Total Deposits

$Y = a+bX$ ………(1)

Where,

Y= cash and bank balance

a=regression constant

b= regression coefficient

X = Total deposits

This model has been constructed to examine the relationship between cash 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).

3.5.2.5.2 Multiple regressions 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:

$X_1 = a + b_1 x_2 + b_2 x_3$

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.

I. Cash and bank balance (CB) on Total Deposit (TD) and Net Profit (NP)
II. 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.

3.5.2.6 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.

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

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

II.   Level of significant: = 5%

III.   Test statistics, under H_0

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

IV.   Table value

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

V.   Decision:

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

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

The hypothesis of this study is as follows:

1.   First Hypothesis

Null Hypothesis (H_0):

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

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

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

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

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

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

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

Alternative Hypothesis (H_1):

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

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

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

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

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

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

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

3.5.2.6.2 Analysis of Variance (ANOVA)

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: $\mu 1 = \mu 2 = \dots \mu n$ i.e. there is no significance difference in the average value due to one factor.

H_1: $\mu 1 = \mu 2 \dots$ μn i.e. there is significant difference in the average value due to one factor.

II. Level of significance: = 5%

III. Test statistics

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

Where,

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

MSE= Mean sum of square due to error

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

V. Decision:

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

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

1. First Hypothesis

Null Hypothesis:

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

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

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: $\mu 1 = \mu 2$

Alternative Hypothesis

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

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

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: $\mu 1$ $\mu 2$

4.fourth Hypothesis

Null Hypothesis:

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

i.e.　　H$_0$: μ1= μ2

Alternative Hypothesis

H$_1$:　　There is significant difference in the average working capital between two selected banks.

i.e.　　H$_1$: μ1　μ2

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$_0$: μ1= μ2

Alternative Hypothesis

H$_1$:　　There is significant difference in the investment to total deposit ratio between two selected banks.

i.e. H$_1$: μ1　μ2

CHAPTER IV

Data Presentation and Analysis

This chapter deals with the presentation and analysis of data in readable manner. The collection of data's and its analysis tools are used as specified in chapter three. In this study, financial as well as statistical tools are used to achieve the pre-determined objectives.

4.1　Financial Tools

Financial ratios are calculated to ascertain the liquidity position of the firm. It is the 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 development banks. The financial tools used in this study are as follows: Liquidity ratio, Activity Ratio and Profitability Ratio. Likewise, composition of working capital in terms of cash and bank balance percentage, loan and advances percentage, government securities percentage and miscellaneous current assets percentage are also calculated.

Following are the major financial tools used for the calculation of various statuses of the Nepalese development banks.

4.1.1 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 cash 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.

4.1.1.1 Cash and Bank Balance to Total Deposit ratio

Cash and bank balance to total deposit ratio is calculated by dividing cash 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.

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

Table 4.1

Cash and Bank Balance to Total Deposit Ratio

(Rs. In million)

Fiscal Year	Cash and Bank Balance		Total Deposits		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	260.62	218.87	1,903.05	918.94	13.69	23.82
2059/060	527.14	421.69	1,985.84	1,308.01	26.54	32.24
2060/061	292.09	387.53	1,845.50	1,413.97	15.83	27.41
2061/062	295.48	406.69	1,631.27	1,479.07	18.11	27.50
2062/063	506.00	533.72	1,537.64	2,103.39	32.91	25.37
				Mean ( )	21.42	27.27
				Standard Deviation(s)	8.06	3.17
				Coefficient of Variation (CV)	38	12

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

During the study period, the maximum cash and bank balance to deposit came in year fifth for the NDBL i.e.32.91% and second year for DCBL i.e. 32.24%.

Above table shows the cash and bank balance to total deposit ratio were 13.69%, 26.54%, 15.83%, 18.11% and 32.91% in NDBL in respective years of the study period. Similarly the ratios in DCBL came 23.82%, 32.24%, 27.41%, 27.5% and 25.37% in the respective year of study period.

Above table shows the mean, standard deviation and CV of the cash and bank balance to total deposit came 21.42,8.06 and 38% of NDBL and 27.27, 3.17 and 12% of DCBL. The mean ratio of DCBL was greater than that of NDBL, which means that there was not uniformity in the ratios in CV of DCBL, which signifies greater consistency in it.

The ratios of both banks were in fluctuating trend.

4.1.1.2 Current Ratio

Current ratio reflects the strength of current assets available with the company over its current liabilities into cash 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 ratio, 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.

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

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Table 4.2

Current Ratio

</div>

(Rs. In million)

Fiscal Year	Current Assets		Current Liabilities		Ratios (Times)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	403.86	241.97	2,050.99	971.77	0.20	0.25
2059/060	700.40	436.71	2,127.30	1,367.33	0.33	0.32
2060/061	577.44	420.25	2,017.37	1,481.33	0.29	0.28
2061/062	755.14	448.66	1,725.42	1,568.29	0.44	0.29
2062/063	587.22	588.63	1,573.25	2,291.34	0.37	0.26
Mean ( )					0.32	0.28
Standard Deviation(s)					0.09	0.03
Coefficient of Variation (CV)					28	10

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows the current ratio of NDBL and DCBL in fluctuating trend through out the study period. Above tables shows both of the banks could not maintain the conventional standard of 2:1. The higher mean ratios show the highly liquid position of NDBL, which shows the banks, did not have proper investment plan.

Above table shows the mean of current ratio of NDBL were higher than DCBL. Likewise CV of DCBL is lower than NDBL, which mean that NDBL has more fluctuation in ratios compared with DCBL. The standard deviation, which measures the total risk of particular observation, is 0.09 and 0.03 respectively of NDBL and DCBL for the study period.

4.1.1.3 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.

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

Table 4.3

Quick Ratio

(Rs. In million)

Fiscal Year	Quick Assets		Current Liabilities		Ratios (Times)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	403.86	241.28	2,050.99	971.77	0.20	0.25
2059/060	699.21	435.81	2,127.30	1,367.33	0.33	0.32
2060/061	574.12	419.21	2,017.37	1,481.33	0.28	0.28
2061/062	751.83	447.54	1,725.42	1,568.29	0.44	0.29
2062/063	425.79	586.83	1,573.25	2,291.34	0.27	0.26
Mean ( )					0.3	28
Standard Deviation(s)					0.09	0.03
Coefficient of Variation (CV)					29	10

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above tables shows the quick ratio of NDBL as 0.20, 0.33,0.28,0.44 and 0.27 in the respective years of study period. Similarly the ratios of DCBL came to be 0.25,0.32,0.28,0.29,0.26 in respective years of study period. NDBL has maximum current liabilities in fourth year where as DCBL has maximum current liabilities in fifth year.

Mean and CV of the quick ratios came 0.30 and 29% of NDBL and 0.28 and 10% of DCBL respectively. The mean ratio of NDBL was greater than that of DCBL, which means that NDBL was more able to pay its current liabilities. The CV of NDBL was also greater than that of DCBL, which shows more fluctuation in quick position. The standard deviation of quick ratio of NDBL is 0.09 and 0.03 for DCBL, which indicates NDBL has high risk involved than in DCBL.

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

4.1.1.4 Cash and Bank Balance to Deposit Ratio (Exc. Fixed Deposit)

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

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

Table 4.4

Cash and Bank Balance to Total Deposits (Exc. FD) Ratio

(Rs. In million)

Fiscal Year	Cash and Bank Balance		Total Deposits (Exc. FD)		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	260.62	218.87	246.22	14.03	105.85	1,560.01
2059/060	527.14	421.69	127.68	234.64	412.86	179.72
2060/061	292.09	387.53	248.14	377.57	117.71	102.64
2061/062	295.48	406.69	189.68	448.57	155.78	90.66
2062/063	506.00	533.72	319.94	856.03	158.15	62.35
Mean ( )					190.07	399.08
Standard Deviation(s)					126.65	650.44
Coefficient of Variation (CV)					67	163

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above tables shows the cash and bank balance to Total Deposits (Exc. FD) ratios of NDBL as 105.85%, 412.86%, 117.71%, 155.78% and 158.15% in the respective years of study period. Similarly the ratios of DCBL came to be 1560.01%, 179.72%, 102.64%, 90.66% and 62.35% in respective years of study period.

Mean and CV of cash and bank balance to total deposit (exc. FD) ratios came 190.07 and 67% of NDBL and 399.08 and 163% of DCBL respectively. It shows DCBL has very high fluctuation in this ratio than in NDBL. Similarly, The standard deviation, which measures the total risk of particular observation, is 126.65 and 650.44 respectively of

NDBL and DCBL for the study period. The ratios of both banks revealed fluctuating trend over the period.

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 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:

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

Table 4.5

Fixed Deposit to Total Deposit Ratio

(Rs. In million)

Fiscal Year	Fixed Deposits		Total Deposits		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	1,656.83	901.91	1,903.05	918.94	87.06	98.15
2059/060	1,858.16	1,073.37	1,985.84	1,308.01	93.57	82.06
2060/061	1,597.35	1,036.40	1,845.49	1,413.97	86.55	73.30
2061/062	1,441.58	1,030.50	1,631.26	1,479.07	88.37	69.67
2062/063	1,217.70	1,247.30	1,537.64	2,103.39	79.19	59.30
Mean ( )					86.95	76.5
Standard Deviation(s)					5.15	14.6
Coefficient of Variation (CV)					6	19

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above tables shows the Fixed Deposit to Total Deposits ratios of NDBL as 87.06%, 93.57%, 86.55%, 88.37% and 79.19% in the respective years of study period. Similarly

the ratios of DCBL came 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 NDBL were greater than DCBL i.e. 86.95>76.50. Likewise CV of DCBL is greater than NDBL i.e. 19%>6%, which means that NDBL has more fluctuation in ratios compared with DCBL. The standard deviation of the same ratio of NDBL is 5.15 and 14.6 for DCBL, which indicates DCBL has high risk involved than in NDBL. The ratios of both banks revealed fluctuating trend over the period.

4.1.1.6 Saving Deposit to Total Deposit Ratio

Saving deposit is an interest bearing short-term deposit. The ratio is developed in order to find out proportion of saving deposit, which is interest bearing and short term in nature. It is calculated by dividing the total amount of saving deposits by the amount of total deposits, which can be expressed as follows:

Saving Deposit to Total Deposit Ratio= $\dfrac{\text{Saving Deposit}}{\text{Total Deposit}}$

Table 4.6

Saving Deposit to Total Deposit Ratio

(Rs. In million)

Fiscal Year	Saving Deposits		Total Deposits		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	-	-	1,903.05	918.94	-	-
2059/060	84.06	226.57	1,985.84	1,308.01	4.23	17.32
2060/061	190.84	351.17	1,845.49	1,413.97	10.34	24.84
2061/062	119.72	422.85	1,631.26	1,479.07	7.34	28.59
2062/063	253.37	834.62	1,537.64	2,103.39	16.48	39.68
Mean ( )					7.68	22.09
Standard Deviation(s)					6.23	14.75
Coefficient of Variation (CV)					81	67

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above tables shows the Saving Deposit to Total Deposits ratios of NDBL as 0%, 4.23%, 10.34%, 7.34% and 16.48% in the respective years of study period. Similarly the ratios of DCBL came to 0%, 17.32%, 24.84%, 28.59% and 39.68% in respective years of study period.

Mean of saving Deposits to Total Deposit of NDBL is lower than that of DCBL i.e. 7.68<22.09. Likewise CV of NDBL is greater than that of DCBL i.e. 81%>67%. The standard deviation of the ratio is 6.23 and 14.75 respectively of NDBL and DCBL. It indicates DCBL has higher fluctuation on this ratio comparing to NDBL.

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

This ratio is obtained 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 4.7

Cash and Bank Balance to Current Liabilities Ratio

(Rs. In million)

Fiscal Year	Cash and Bank Balance		Current Liabilities		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	260.62	218.87	2,050.99	971.77	12.71	22.52
2059/060	527.14	421.69	2,127.30	1,367.33	24.78	30.84
2060/061	292.09	387.53	2,017.37	1,481.33	14.48	26.16
2061/062	295.48	406.69	1,725.42	1,568.29	17.13	25.93
2062/063	506.00	533.72	1,573.25	2,291.34	32.16	23.29
Mean ( )					20.25	25.75
Standard Deviation(s)					8.1	3.26
Coefficient of Variation (CV)					40	13

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

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

Above tables shows Cash and bank balance to current liabilities ratios of NDBL is 12.71%, 24.78%, 14.48%, 17.13% and 32.16% in the respective years of study period. Similarly the ratios of DCBL came to 22.52%, 30.84%, 26.16%, 25.93% and 23.29% in respective years of study period.

The above table shows the mean, standard deviation and CV of cash and bank balance to current liabilities of NDBL came 20.25,8.10 and 40%. Similarly the mean, standard deviation and CV of DCBL of same ratios came 25.75,3.26 and 13%. Average ratios of DCBL were higher than that of NDBL, which shows that DCBL had higher percentage of cash balance to pay its current liabilities.

In other words DCBL was more successful in managing liquidity. CV of DCBL was also lower than the same of NDBL, which indicates that the ratios in DCBL were more consistent than that of NDBL during the study period.

Above ratios shows that both banks had not constant proportion of cash balance and current liabilities through out the study period.

4.1.1.8 Cash and Bank Balance to Current Assets (CA) Ratio

This ratio is calculated dividing total cash and bank balance by current assets. Cash means the firm's holding of currency and demand deposits. It is most liquid assets because a firm disburses it immediately with out any restriction.

This ratio measures the total portion of cash and bank balance included in current assets. Current assets include cash and bank balance as well as other assets that can immediately converted into the cash. So, the main reason for calculating this ratio is to find out the portion of cash and bank balance included in current assets.

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

Table 4.8

Cash and Bank Balance to Current Assets Ratio

(Rs. In million)

Fiscal Year	Cash and Bank Balance		Current Assets		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	260.62	218.87	403.86	241.97	64.53	90.45
2059/060	527.14	421.69	700.40	436.71	75.26	96.56
2060/061	292.09	387.53	577.44	420.25	50.58	92.21
2061/062	295.48	406.69	755.14	448.66	39.13	90.65
2062/063	506.00	533.72	587.22	588.63	86.17	90.67
Mean ( )					63.14	92.11
Standard Deviation(s)					18.8	2.59
Coefficient of Variation (CV)					30	3

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows the cash and bank balance to current assets ratios of NDBL and DCBL. There should be certain percentage of current assets as cash and bank balance to have the liquidity. This ratio was fluctuating in NDBL and in DCBL. The ratios in NDBL remained 64.53%, 75.26%, 50.58%, 39.13% and 86.17% respectively through out the study period. Similarly the ratios in DCBL came 90.45%, 96.56%, 92.21%, 90.65% and 90.67% in the respective study period.

Mean, standard deviation and CV of cash and bank balance to current assets ratio of NDBL came 63.14,18.80 and 30%. Similarly mean, standard deviation and CV of cash and bank balance to current assets ratio of DCBL came 92.11,2.59 and 3% respectively. The average ratio of DCBL was higher than that of DCBL, which shows that DCBL had more liquidity of cash than that of NDBL. CV of DCBL was also lower which indicates that the ratios of DCBL were less fluctuating than that of NDBL during the study period. The ratios are fluctuating trends for the both banks for the study period.

4.1.1.9 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.

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

Table 4.9

NRB Balance to Total Deposit Ratio

(Rs. In million)

Fiscal Year	NRB Balance		Total Deposits		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	50.83	3.25	1,903.05	918.94	2.67	0.35
2059/060	23.58	19.74	1,985.84	1,308.01	1.19	1.51
2060/061	26.16	14.53	1,845.50	1,413.97	1.42	1.03
2061/062	36.42	27.14	1,631.27	1,479.07	2.23	1.83
2062/063	43.14	121.95	1,537.64	2,103.39	2.81	5.80
Mean ( )					2.06	2.1
Standard Deviation(s)					0.73	2.14
Coefficient of Variation (CV)					35	102

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows that the ratios were 2.67%, 1.19%, 1.42%, 2.23% and 2.81% in NDBL in the respective year of study period. Similarly the ratios in DCBL remained 0.35%, 1.51%, 1.03%, 1.83% and 5.8% in the corresponding periods. Above table shows the ratios of both banks in fluctuating trend through out the study period.

Mean, standard deviation and CV of NRB balance to total deposit ratio of NDBL came 2.06,0.73 and 35%. Similarly mean, standard deviation and CV of NRB balance to total deposit ratio of DCBL came 2.1,2.14 and 102%. The mean ratio of NDBL was in some extent lower than that of DCBL. Likewise CV in the ratios of NDBL was lower than that of DCBL, which means DCBL, has more uniformity in the ratios as compared to NDBL.

The higher mean ratio of balance at NRB to total deposit reveals that its liquidity position regarding with this ratio was better than that of DCBL during the study period.

Figure 4.1 Liquidity Ratios of NDBL
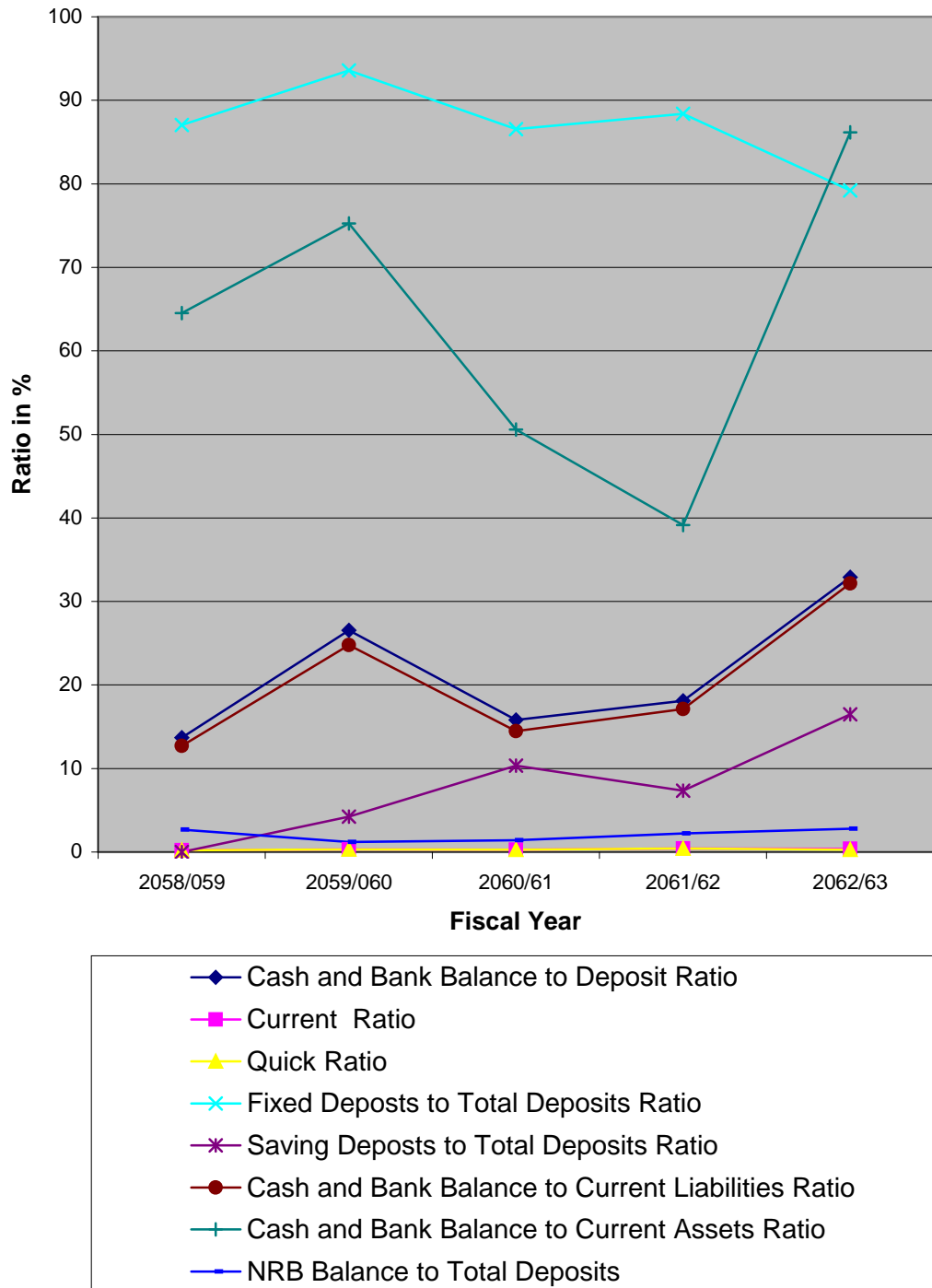
Figure 4.2 Liquidity Ratios of DCBL
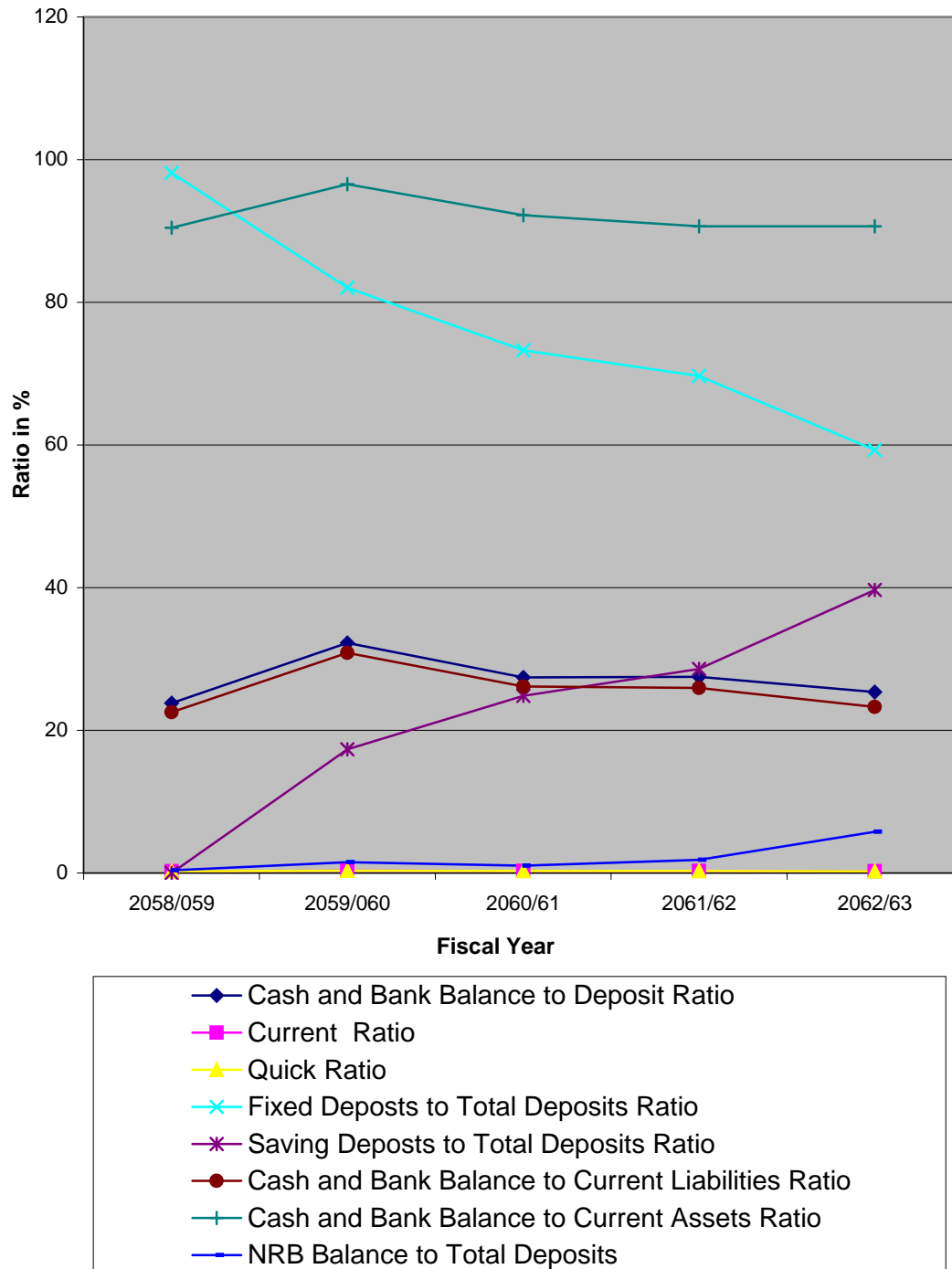
4.1.2 Activities or Turnover Ratio (Utilization Ratio)

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 measures a firm's efficiency in utilization of its assets. These ratios look at the amount of various types of assets and attempt to determine if they are too high or too low with regard to current operating levels.

This ratio indicates how quickly certain current assets are converted into cash. 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. Mostly utilization ratios are used to evaluate managerial efficiency and proper utilization of assets. Following ratio is used under the activity ratios.

4.1.2.1 Loan and Advances to Saving Deposit Ratio

This ratio is also employed for the purpose of measuring utilization of saving deposits in generating revenue by giving loan and advances to the client i.e. to determine to what extent collected saving deposit amount is being deployed in providing loan and advances to generate income. This ratio indicates to what extent of saving deposits has been turned over to loans and advances.

Saving deposits are interest-bearing obligation for short-term purpose whereas loan and advances are the short investment for revenue income. This ratio indicates how much short-term interest bearing deposits are utilized for income generating purpose. If the ratio is high the firm is assumed to be successful in utilizing its saving deposits to generate profit. The formula for this ratio is as follows:

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

Table 4.10

Loan and Advances to Saving Deposit Ratio

(Rs. In million)

Fiscal Year	Total Loan and Advance		Saving Deposits		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	1,605.66	770.07	-	-	-	-
2059/060	1,381.03	1,010.41	84.06	226.57	1,642.91	445.96
2060/061	1,217.28	1,189.67	190.84	351.17	637.85	338.77
2061/062	762.52	1,390.86	119.72	422.85	636.92	328.93
2062/063	551.38	1,896.34	253.37	834.62	217.62	227.21
Mean ( )					627.06	277
Standard Deviation(s)					631.07	181.06
Coefficient of Variation (CV)					101	65

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows loans and advances to saving deposit ratio in NDBL as 0%, 1642.91%, 637.84%, 636.92% and 834.62% respectively for the study period. Similarly the ratios in DCBL were 0%, 445.96%, 338.77%, 328.77% and 227.21% respectively. The ratios in both banks were zero in first years because both banks had no collection of saving deposits n that period. The ratios are fluctuated in both banks.

From the above table the mean, standard deviation and CV for the loans and advances to saving deposits ratio of NDBL were 627.06,631.07 and 101% similarly 277,181.06 and 65% for the DCBL. Average ratio of NDBL seemed to be greater than that of DCBL, which indicates that NDBL has mobilized its saving deposits in term of loans and advances more successfully. But CV shows the ratios in DCBL were more consistent than that of NDBL. Similarly, The standard deviation, which measures the total risk of particular observation, is greater in NDBL than that of DCBL.

4.1.2.2 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 where as loan and advances are the major sources of investment in generating income for Development banks. It is calculated as follows:

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

Table 4.11

Loan and Advances to Fixed Deposit Ratio

(Rs. In million)

Fiscal Year	Total Loan and Advance		Fixed Deposits		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	1,605.66	770.07	1,656.83	904.91	96.91	85.10
2059/060	1,381.03	1,110.41	1,858.16	1,073.37	74.32	103.45
2060/061	1,217.28	1,189.67	1,597.35	1,036.40	76.21	114.79
2061/062	762.52	1,390.86	1,441.58	1,030.50	52.89	134.97
2062/063	551.38	1,896.34	1,217.70	1,247.36	45.28	152.03
				Mean ( )	69.12	118.07
				Standard Deviation(s)	20.5	26.22
				Coefficient of Variation (CV)	30	22

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows the loans and advances to fixed deposit ratio of NDBL and DCBL. The ratios in NDBL came 96.91%, 74.32%, 76.21%52.89% and 45.28% where as the ratios in DCBL came 85.1%, 103.45%, 114.79%, 134.97% and 152.03% respectively in the study period. The ratios in both banks are in fluctuating trend.

Mean, standard deviation and CV for loan and advances to fixed deposit of NDBL is 69.12,20.5 and 30%. Similarly 118.07,26.22 and 22% respectively of DCBL.the average of the ratios in DCBL seemed greater than NDBL which indicates that DCBL has more

successfully utilized the high interest bearing deposit in term of loans and advances. Moreover, turnover position of DCBL is better than that of NDBL. CV also shows that DCBL has more consistent ratio than that of NDBL

4.1.2.3 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.

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

Table 4.12

Loan and Advances to Total Deposit Ratio

(Rs. In million)

Fiscal Year	Total Loan and Advance		Total Deposits		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	1,605.66	770.07	1,903.05	918.94	84.37	83.80
2059/060	1,381.03	1,110.41	1,985.84	1,308.01	69.54	84.89
2060/061	1,217.28	1,189.67	1,845.49	1,413.97	65.96	84.14
2061/062	762.52	1,390.86	1,631.26	1,479.07	46.74	94.04
2062/063	551.38	1,896.34	1,537.64	2,103.39	35.86	90.16
				Mean ( )	60.5	87.4
				Standard Deviation(s)	19.22	4.51
				Coefficient of Variation (CV)	32	5

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

From the above table the ratio in NDBL came 84.37%, 69.54%, 65.96%, 46.74% and 35.86% for the study period. Similarly the ratios in DCBL came 83.8%, 84.89%, 84.14%, 94.04% and 90.16% respectively in the study period. The ratios of NDBL and DCBL are

in fluctuating trend. Mean, standard deviation and CV for loan and advances to total deposit ratio of NDBL is 60.5,19.22 and 32%. Similarly these ratios are 87.4,4.51 and 5% respectively of DCBL. Mean ratio of DCBL appeared considerably higher which signifies that DCBL is more successful in utilizing the resources in profitable sectors than NDBL. CV of the ratios depicted that the ratio remained more consistent in DCBL as compared to NDBL.

4.1.2.4 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.

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

Table 4.13

Investment to Total Deposits Ratio

(Rs. In million)

Fiscal Year	Total Investment		Total Deposits		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	180.03	111.49	1,903.05	918.94	9.46	12.13
2059/060	238.93	76.16	1,985.84	1,308.01	12.03	5.82
2060/061	189.10	45.09	1,845.49	1,413.97	10.25	3.19
2061/062	144.20	28.82	1,631.26	1,479.07	8.84	1.95
2062/063	140.70	48.82	1,537.64	2,103.39	9.15	2.32
				Mean ( )	9.95	5.08
				Standard Deviation(s)	1.28	4.22
				Coefficient of Variation (CV)	13	83

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows the investment to total deposit ratio of NDBL and DCBL. The ratios for NDBL came 9.46%, 12.03%, 10.25%, 8.84% and 9.15% in the study period. Similarly the ratios in DCBL came 12.13%, 5.82%, 3.19%, 1.95% and 2.32% for the respective years. The ratios are in fluctuating trend for NDBL and DCBL.

Mean, standard deviation and CV for the investment to total deposit ratio of NDBL is 9.95,1.28 and 13%. Similarly mean, standard deviation and CV of DCBL is 5.08,4.22 and 83%. The average ratio of investment to total deposit of NDBL was considerably higher than that of DCBL. Similarly CV of NDBL was lower than that of DCBLNDBL was more uniform than that of DCBL. In conclusion it can be said that NDBL had better utilization of its deposits in term of investment in comparison of DCBL.

Figure 4.3 Activities or Turnover Ratio (Utilization Ratio) of NDBL
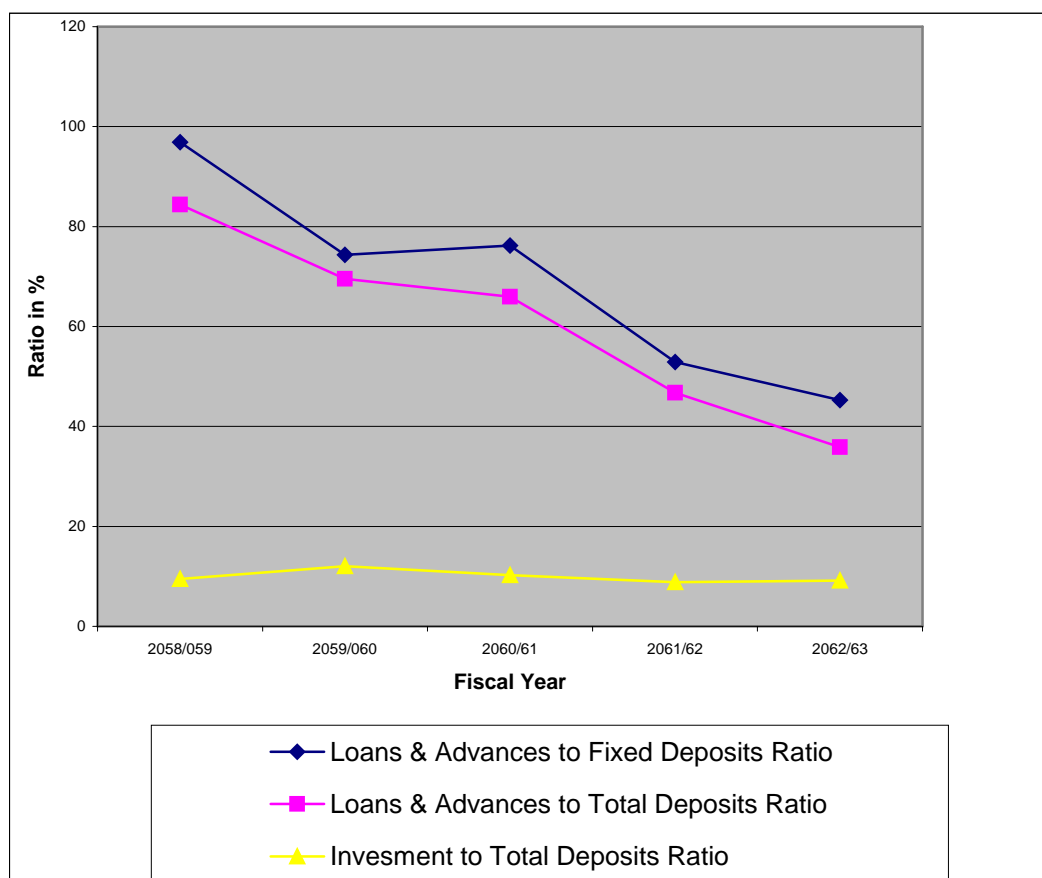
Figure 4.4 Activities or Turnover Ratio (Utilization Ratio) of DCBL
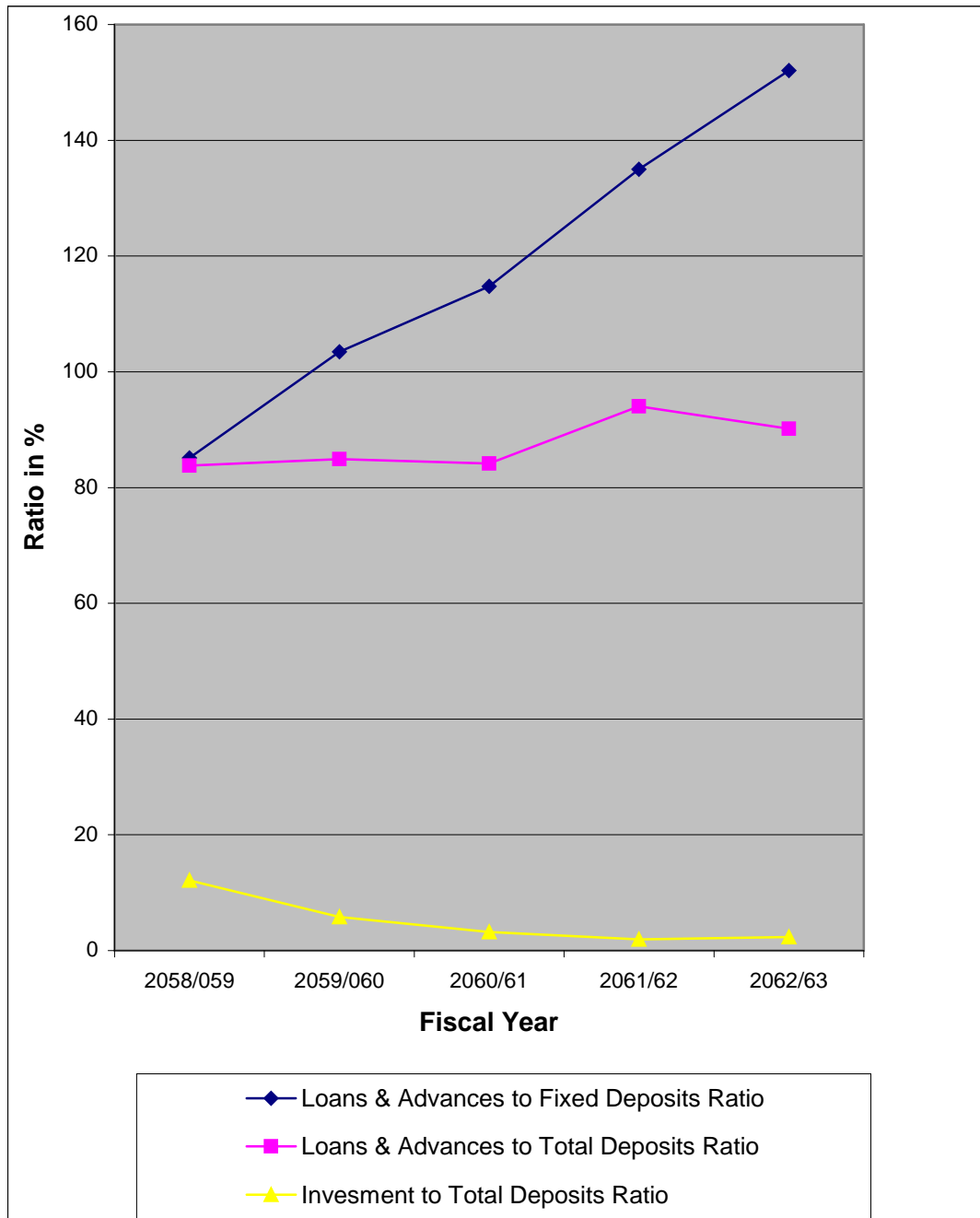
4.1.3 Profitability Ratio

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. 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. The profitability of banks should be evaluated in terms of its investment in assets and in term of capital contributed by creditors. A bank should be able to produce adequate profit on each rupee of investment. If investment do not generate sufficient profits, it would be very difficult for the banks to cover operating expenses and interest charges.

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:

4.1.3.1 Return on Total Assets Ratio (ROA)

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

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

Table 4.14

Return on Total Assets Ratio (ROA)

(Rs. In million)

Fiscal Year	Net Profit		Total Assets		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	3.63	9.36	2,205.43	1,141.25	0.16	0.82
2059/060	1.08	16.65	2,340.38	1,538.01	0.05	1.08
2060/061	(302.01)	30.75	2,001.28	1,666.88	(15.09)	1.84
2061/062	78.83	35.64	1,675.92	1,881.06	4.70	1.89
2062/063	(161.65)	32.84	1,352.09	2,605.94	(11.96)	1.26
Mean ( )					(4.43)	1.38
Standard Deviation(s)					8.59	0.47
Coefficient of Variation (CV)					(194)	34

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows the return on total assets of NDBL and DCBL. Above tables shows the ratios 0.16%, 0.05%, -15.09%, 4.7% and –11.96% in NDBL for the study period. Similarly the ratios of DCBL came 0.82%, 1.08%, 1.84%, 1.89% and 1.26% for the study period.

Above the table shows the return on total assets of NDBL and DCBL. The average ratio of DCBL was higher than that of NDBL, which implies that DCBL had more efficient operation of optimal utilization of the resources in comparison with same period of DCBL. Like wise CV of NDBL was less than that of DCBL, which indicates that, the variability of the ratio of NDBL was more uniform than that of DCBL.

The profit of NDBL was positive in first, second and fourth year. In case of third and fifth year, NDBL borne heavy loss due to the reason of loan loss provisions. Due to the reason of fourth year's loss, the mean and CV of NDBL was negative.

4.1.3.2 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.

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

Table 4.15

Net Profit to Total Deposit Ratio

(Rs. In million)

Fiscal Year	Net Profit		Total Deposits		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	3.63	9.36	1,903.05	918.94	0.19	1.02
2059/060	1.08	16.65	1,985.84	1,308.01	0.05	1.27
2060/061	(302.01)	30.75	1,845.50	1,413.97	(16.36)	2.17
2061/062	78.83	35.64	1,631.27	1,479.07	4.83	2.41
2062/063	(161.65)	32.84	1,537.64	2,103.39	(10.51)	1.56
				Mean ( )	(4.36)	1.69
				Standard Deviation(s)	8.76	0.59
				Coefficient of Variation (CV)	(201)	35

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows the return on total deposit of NDBL and DCBL. The ratios of DCBL are increasing trend up to 2061/062 and then decreases and ratios of NDBL were in decreasing trend. The ratios in NDBL remained 0.19%, 0.05%, -16.36%, 4.83% and – 10.51% in the study period. Similarly the ratios in DCBL came 1.02%, 1.27%, 2.17%, 2.41% and 1.56% in the study period.

The mean Standard Deviation and CV net profit to total deposits of NDBL were – 4.36,8.76 and –201%respectively. Similarly mean, standard deviation and CV of DCBL were 1.69,0.59 and 35%. The average ratio of NDBL was lower than that of DCBL.

Similarly CV of NDBL was lower than that of DCBL, which mean that there was more consistency in the ratio of NDBL in respect of return to total deposit. Finally it can be concluded that DCBL had utilized its outsider's fund in better way to generate return and it was increasing its profit every year.

4.1.3.3 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.

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

Table 4.16

Return on common shareholders' equity

(Rs. In million)

Fiscal Year	Net Profit		Shareholder's Equity		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	3.63	9.36	154.44	169.48	2.35	5.52
2059/060	1.08	16.65	155.52	168.43	0.69	9.89
2060/061	(302.01)	30.75	(119.49)	180.35	252.75	17.05
2061/062	78.83	35.64	(59.50)	192.77	(132.49)	18.49
2062/063	(161.65)	32.84	(221.15)	304.09	73.10	10.80
				Mean ( )	39.28	12.35
				Standard Deviation(s)	140.6	5.36
				Coefficient of Variation (CV)	358	43

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows the return on shareholder equity of NDBL and DCBL. The ratios of NDBL in the study period were 2.35%, 0.69%, 252.75%, -132.49% and 73.10%.

Similarly the ratios of DCBL were 5.52%, 9.89%, 17.05%, 18.49% and 10.80% respectively for the study period.

Mean, standard deviation and CV for the return on shareholders equity of NDBL is 39.28,140.6 and 358% and 12.35,5.36 and 43% respectively of DCBL. The average ratio of NDBL for return on shareholders equity was higher than that of DCBL. Likewise the CV of DCBL was lower. This shows the return on shareholders equity of DCBL was more consistent.

4.1.3.4 Return on Working capital

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.

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

Table 4.17

Return on Working capital

Rs in Million

Fiscal Year	Net Profit		Net Working Capital		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	3.63	9.36	(1,647.13	(729.80)	(0.22)	(1.28)
2059/060	1.08	16.65	(1,426.90	(930.62)	(0.08)	(1.79)
2060/061	(302.01	30.75	(1,439.93	(1,061.08)	20.97	(2.90)
2061/062	78.83	35.64	(970.28)	(1,119.63)	(8.12)	(3.18)
2062/063	(161.65	32.84	(986.03)	(1,702.71)	16.39	(1.93)
				Mean ( )	5.79	(2.22)
				Standard Deviation(s)	12.32	0.8
				Coefficient of Variation (CV)	213	(36)

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

Above table shows the working capital of both banks in negative. It means both of the banks had fewer current assets than current liabilities. There should have current assets two times more than current liabilities. Here working capital did not earn any return in both banks.In above table the return on working capital ratio in NDBL remained -0.22%, -0.08%, 20.97%, -8.12% and 16.39% for the study period. The ratios in third and fifth year are positive because of negative profit. Similarly the ratios of DCBL remained – 1.28%, -1.79%, -2.9%, -3.18% and –1.93% respectively in the study period.

Mean, standard deviation and CV for the return on working capital of NDBL is 5.79,12.32 and 213% and –2.22,0.8 and –36% respectively of DCBL for the study period. The mean ratio of NDBL was higher that that of DCBL which shows that NDBL had higher return on working capital. NDBL had higher CV, which indicated that DCBL had more consistency in ratios.

Figure 4.5   Profitability Ratio of NDBL
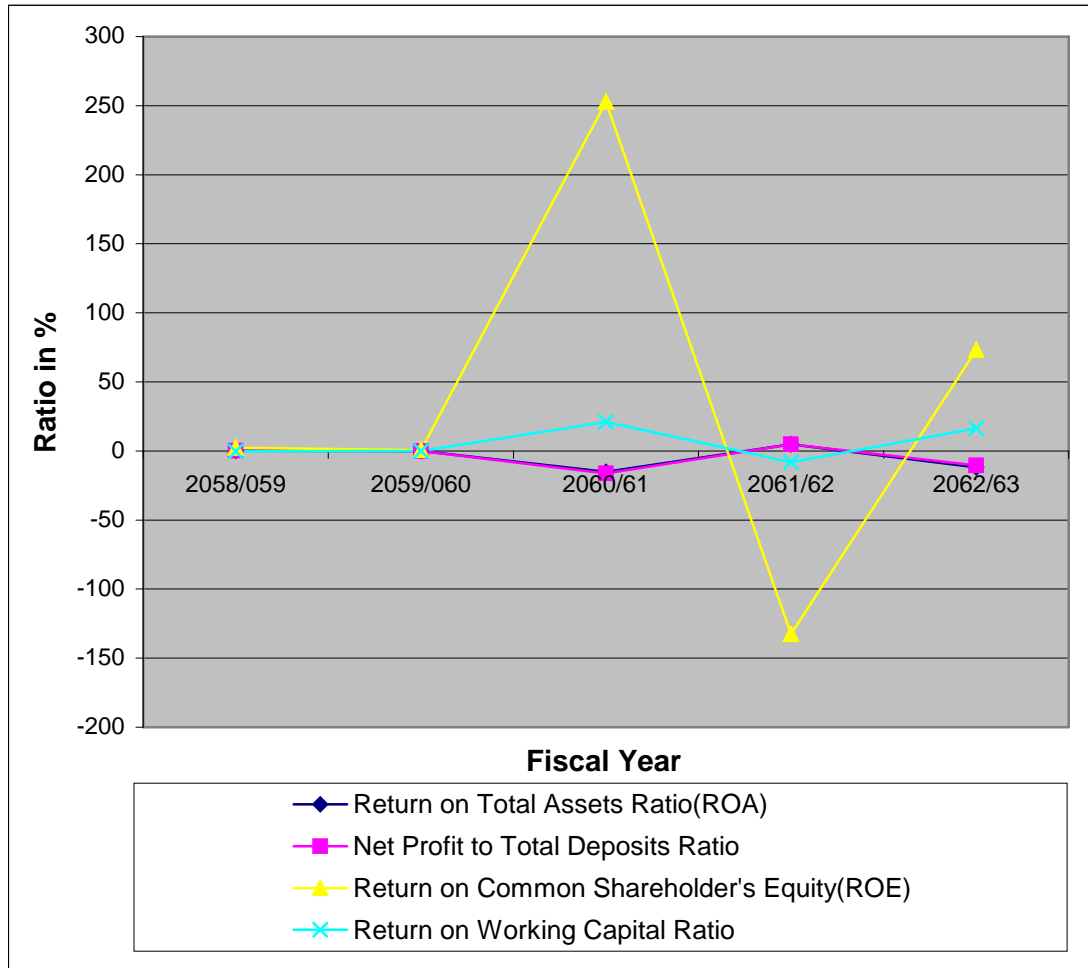
Figure 4.6 Profitability Ratio of DCBL
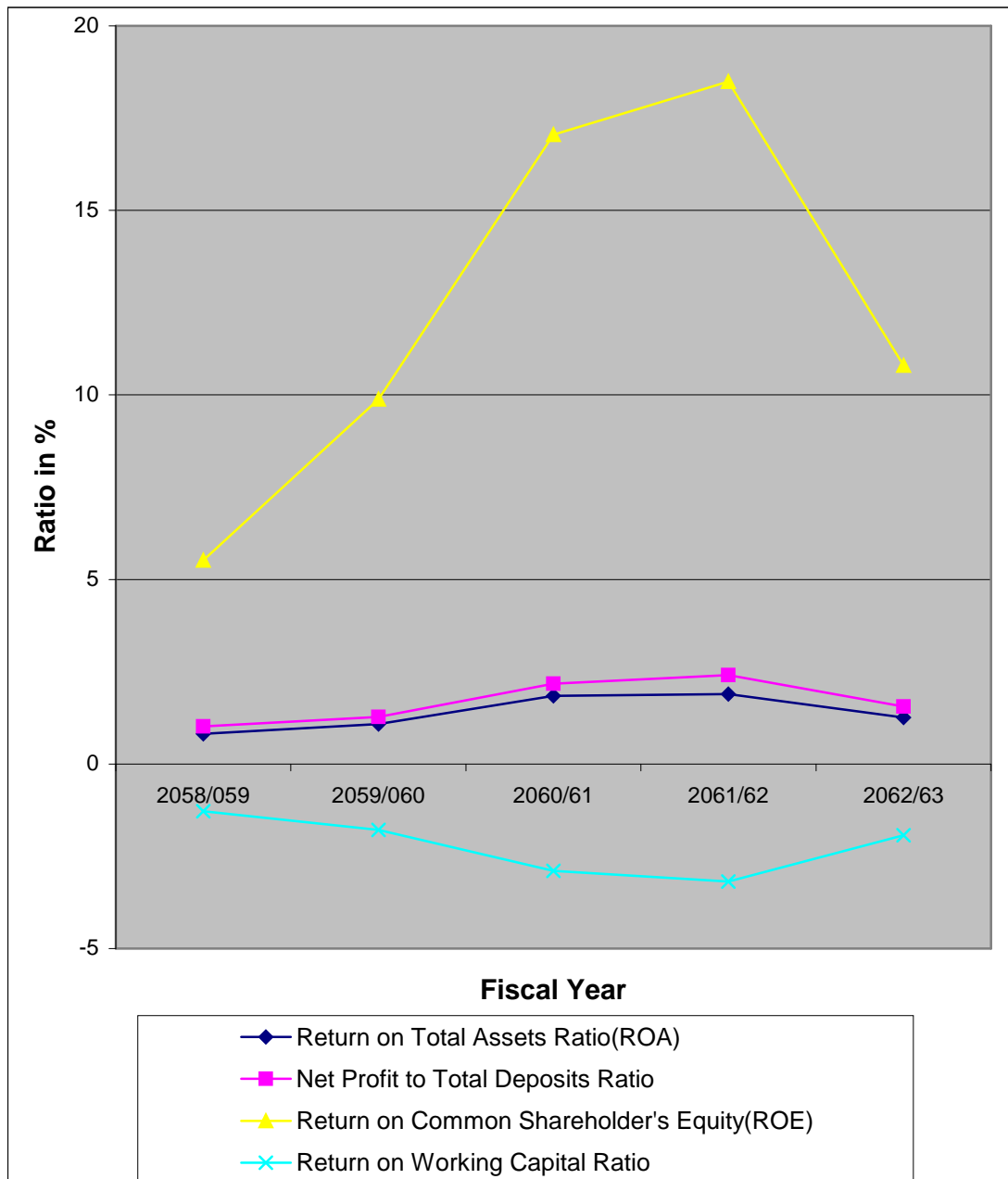
4.1.4 Leverage Ratio

Leverage ratio is also known as capital structure ratio, which shows long-term solvency of banks. Generally capital refers to the composition of debt and equity component on overall capital of a firm. These rations are calculated to judge the long-term financial position of the banks. Under this group the following ratios has calculated the following ratios to obtain the stated objectives of the study.

4.1.4.1 Total Debt to Equity Ratio

This ratio is calculated dividing total debts by total shareholders' equity. Total debts refer to sum of long-term debt, current liabilities and debentures. This ratio shows the relationship between debt capital and equity capital. High debt-equity ratio indicates greater financing by debt holders than those of equity holders. From the creditor's viewpoint, high debt to equity ratio of the bank is more risky to them. It means the bank fail to satisfy creditors.

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debts}}{\text{Shareholders' Equity}}$$

Table 4.18

Total Debt to Equity Ratio

(Rs. In million)

Fiscal Year	Total Debts		Shareholder's Equity		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	2,050.99	959.90	154.44	169.48	1,328.02	566.38
2059/060	2,184.87	1,353.60	155.52	168.43	1,404.88	803.66
2060/061	2,120.77	1,473.31	(119.49)	180.35	(1,774.85)	816.92
2061/062	1,725.42	1,662.27	(59.50)	192.77	(2,899.87)	862.31
2062/063	1,573.25	2,301.85	(221.15)	304.09	(711.39)	756.96
				Mean ( )	(530.64)	761.24
				Standard Deviation(s)	1897.02	115.22
				Coefficient of Variation (CV)	(357)	15

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

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Above table shows debt to equity ratios of NDBL and DCBL. The ratios for NDBL came 1328.02%, 1404.88%, -1774.85%, -2899.87% and –711.39% for the study period. Similarly the ratios for DCBL came 566.38%, 803.66%, 816.92%, 862.31% and 756.96% for the study period. This ratio is in decreasing trend for NDBL and increasing trend for DCBL. But in the fifth year the ratio of DCBL slightly decreases then previous year.

Mean, standard deviation and CV for the debt to equity ratio of NDBL is-530.64, 1897.02 and –357% and 761.24,115.22 and 15% respectively for DCBL. In comparison of both banks capital structure of NDBL is less risky than that of DCBL. CV of ratios remained lower in NDBL, which clarifies that the ratios of DCBL were less consistent.

4.1.4.2 Total Debt to Total Assets Ratio

This ratio is calculated by dividing total debts by total assets. The higher ratio indicates the greater portion of outsider's fund investment in term of the banks' assets.

$$\text{Debt to Total Assets Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

Table 4.19

Total Debt to Total Assets Ratio

(Rs. In million)

Fiscal Year	Total Debts		Total Assets		Ratios (%)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	2,050.99	959.90	2,205.43	1,141.25	93.00	84.11
2059/060	2,184.87	1,353.60	2,340.38	1,538.01	93.36	88.01
2060/061	2,120.77	1,473.31	2,001.28	1,666.88	105.97	88.39
2061/062	1,725.42	1,662.27	1,675.92	1,881.06	102.95	88.37
2062/063	1,573.25	2,301.85	1,352.09	2,605.94	116.36	88.33
				Mean ( )	102.33	87.44
				Standard Deviation(s)	9.72	1.87
				Coefficient of Variation (CV)	10	2

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

The debt to total assets ratios for NDBL came to be 93%, 93.36%, 105.97%, 102.95% and 116.36% for the corresponding study period. Similarly the ratios for DCBL were 84.11%, 88.01%, 88.39%, 88.37% and 88.33% in respective year.

Mean, standard deviation and CV for the debt to assets ratio of NDBL is 102.33,9.72 and 10% and 87.44,1.87 and 2% respectively for the DCBL. Mean of the ratios came greater in NDBL as compared to DCBL, which signifies that the former followed more aggressive policy in rising capital. From the CV analysis it can be noticed that the ratio of NDBL varied considerably the study period because there was higher CV in NDBL.

4.1.4.3 Interest Coverage Ratio

This ratio is computed dividing earning before interest and tax (EBIT) by interest charges. This ratio evaluates the debt serving capacity of the banks. The higher ratio shows that bank can pay the interest easily.

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest Charges}}$$

Table 4.20

Interest Coverage Ratio

(Rs. In million)

Fiscal Year	EBIT		Interest Charges		Ratios (Times)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	160.35	71.28	154.61	57.29	1.04	1.24
2059/060	156.96	112.79	153.68	87.41	1.02	1.29
2060/061	(161.58)	137.29	140.43	92.88	(1.15)	1.48
2061/062	194.20	131.54	115.37	80.72	1.68	1.63
2062/063	(61.75)	148.82	99.89	101.22	(0.62)	1.47
Mean ( )					0.39	1.42
Standard Deviation(s)					1.21	0.16
Coefficient of Variation (CV)					307	11

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

The interest coverage ratios for NDBL remained 1.04,1.02, -1.15,1.68 and –0.62 times in respective years of study period. Similarly the ratios in DCBL came 1.24,1.29,1.48,1.63 and 1.47 times in the corresponding year. The ratios are seen in increasing trend for DCBL and in fluctuating trend for NDBL.

Mean, standard deviation and CV for the interest coverage ratio of NDBL is 0.39,1.21 and 307% and 1.42,0.16 and 11% respectively of DCBL. The mean ratio of DCBL was much lower than that of NDBL, which reveals the better debt servicing capacity of NDBL. By comparing CV of the ratios of NDBL for different five years varied considerably because of higher CV ratio.

4.1.4.4 Long-term debt to Net worth Ratio

This ratio is calculated dividing long term debts by net worth. This ratio measures the proportion of long-term debt and net worth employed in the capital structure. The higher ratio indicates proportion of outsiders claim in capital structure.

$$\text{Long term debt to net worth ratio} = \frac{\text{Long Term Debts}}{\text{Net Worth}}$$

Table 4.21

Long-term debt to Net worth Ratio

(Rs.In million)

Fiscal Year	Long Term Debt		Net Worth		Ratios (Times)	
	NDBL	DCBL	NDBL	DCBL	NDBL	DCBL
2058/059	-	-	154.44	169.48	-	-
2059/060	57.57	2.25	155.52	168.43	0.37	0.01
2060/061	103.40	5.20	(119.49)	180.35	(0.87)	0.03
2061/062	-	120.00	(59.50)	192.77	-	0.62
2062/063	27.27	170.00	(221.15)	304.09	(0.12)	0.56
Mean ( )					(0.12)	0.24
Standard Deviation(s)					0.45	0.32
Coefficient of Variation (CV)					(367)	129

Source: Annual Reports of NDBL & DCBL from FY 2058/59 to 2062/63.

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Above table shows the ratios in NDBL were 0,0.37, -0.87,0 and –0.12 times for the corresponding study period. Similarly the ratios of DCBL came 0,0.01,0.03,0.62 and 0.56 times respectively.

Mean, standard deviation and CV for the long-term debt to net worth ratio of NDBL were –0.12,0.45 and -367% and 0.24,0.32 and 129% for the DCBL respectively. The mean ratio of NDBL was lower than that of DCBL, which indicates that there was less outsiders claim over the capital structure of the bank.

Figure4.7 Leverage Ratio of NDBL
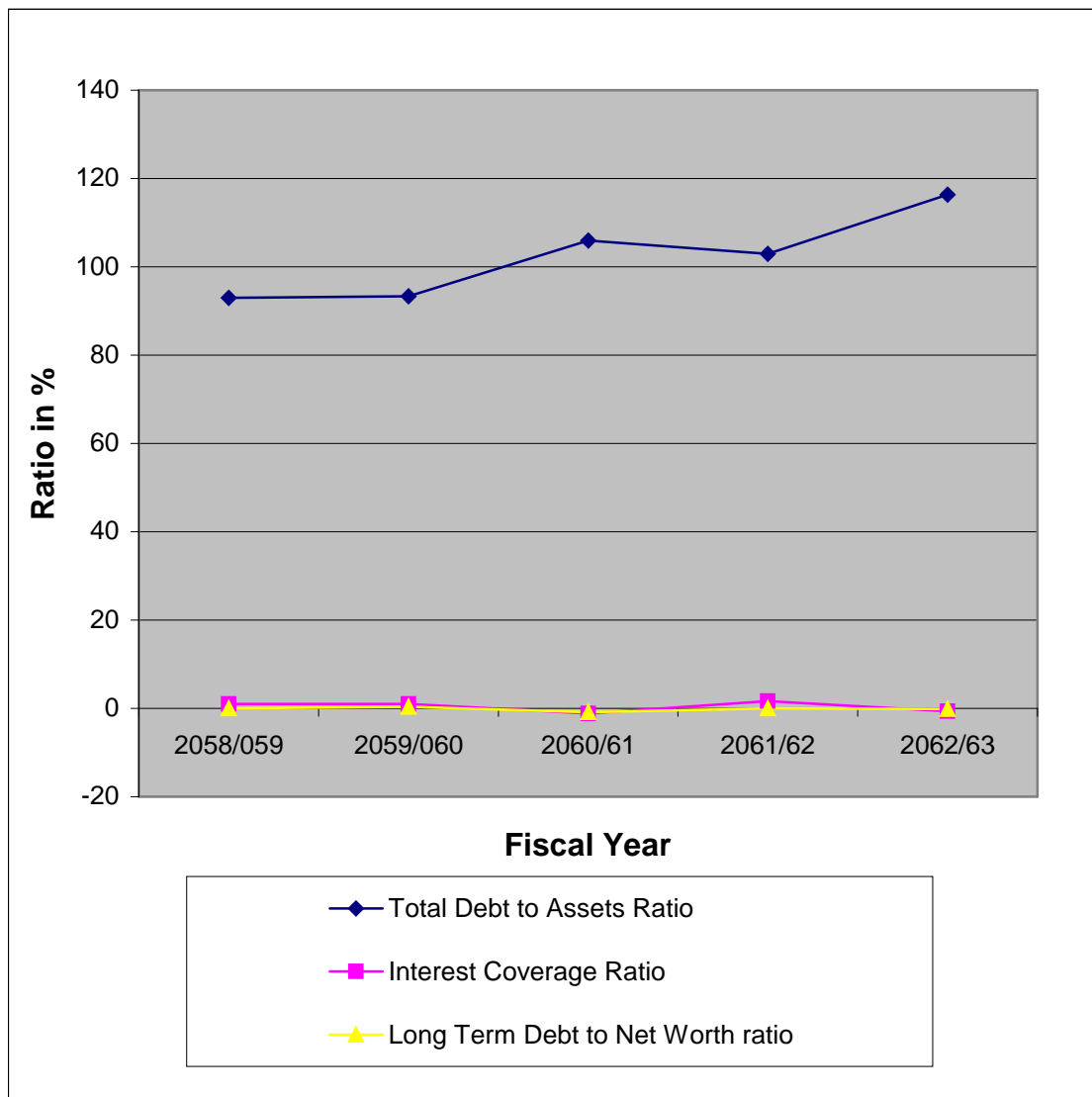
Figure 4.8 Leverage Ratio of DCBL

4.2 Statistical Analysis

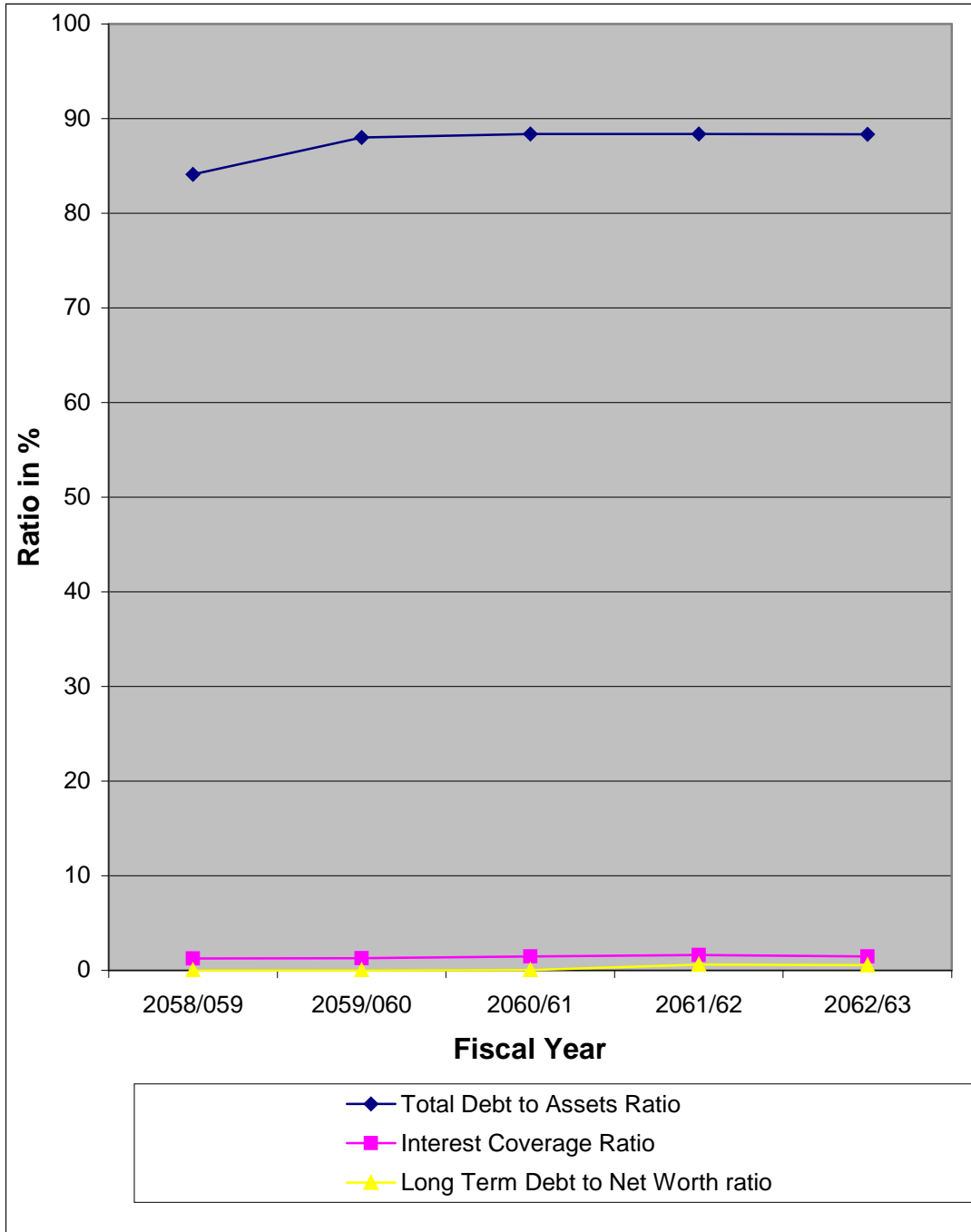Various financial tools mentioned above were used to analyze the cash and liquidity management of Development Banks. Similarly, the relationship between different variables related to the study topics were drowning out using statistical tools.

4.2.1 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,

$\sum X$ = Sum of value of all term and

N = Number of terms

4.2.2 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 (read as sigma), standard deviation is extremely useful for judging the representatives of the mean. Standard deviation is represented as:

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

Where,

s = Standard deviation,

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

n = Numbers of items

4.2.3 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,

$$CV = \frac{s}{\overline{X}}$$

Where,

CV = Coefficient of variation,

s = Standard deviation, and,

$\overline{X}$ = Arithmetic average

4.2.4 Simple Correlation Coefficient

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.

In this study the correlation between the following variables are analyzed. The main objective of this analysis is to find out the relationship between the selected variables.

Table 4.22 The simple correlation analysis of NDBL 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

The simple correlation between the cash and bank balance and NRB balance shows the negative relation with low degree of association. The coefficient of determination is 0.1004, which indicates that nearly 10% of total changed on 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 then 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 nothing concluded about the 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 total changed on 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 cans 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 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 simple correlation of quick assets with current liability is 0.1354 during the study period. It means there is low degree of positive relationship of 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 on 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 the '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 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 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 the '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 the 'r' is greater than 6 P.E.

Table 4.23 The simple correlation analysis of DCBL 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.

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 DCBL 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.

4.2.5 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.

4.2.5.1 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 is denoted by Y and the independent variable 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

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

Table 4.24

CB on CL

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

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

The regression coefficient of NDBL is negative. It means the correlation between CB and CL of the bank is negative. The correlation of CB and CL of DCBL is positive. The regression coefficient of NDBL and DCBL 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 Rs. 0.095 decrease in CB or balance in case of NDBL. And, average of about Rs. 0.218 increase in balance in case of DCBL. The standard error of estimate during the study period is 0.309 and 0.052 of NDBL and DCBL respectively.

The coefficient of multiple determinations of NDBL and DCBL is 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 NDBL and DCBL respectively. It indicates that CB is affected by other several factors besides CL. The result of the regression is statistically insignificant or not related because the

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$t_{cal} < t_{tab}$ at 5% level of significance and at degree of freedom 3 of NDBL. Similarly, The result of the regression of DCBL is statistically significant or related because the $t_{cal} > t_{tab}$ at 5% level of significance and at degree of freedom 3.

It means that the CB of NDBL doesn't depend on CL of NDBL and the CB of NDBL affected by other related various factors besides CL. Similarly the CB of DCBL depend on CL of DCBL.

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

Table 4.25

WC on TA

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

The above table shows the simple regression of WC on TA of two banks during the 5 years study period has been presented. The regression analysis of WC and TA is negative regression relation among the selected banks. There will be decrease in WC of NDBL and DCBL 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 NDBL is negative where as regression constant of the DCBL is positive which indicates that average level of dependent variable or average effect on dependent variable if all variables 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 NDBL and DCBL 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 NDBL and DCBL is 0.759 and 0.985 respectively. The r^2 of NDBL is lower than that of DCBL. 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 NDBL and DCBL respectively.

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

4.2.5.1.3 Loan on Total Deposit (TD)

Table 4.26

Loan on TD

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

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

The regression relation between loan and TD of NDBL and DCBL 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 NDBL and DCBL respectively.

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

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

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

Table 4.27

WC on Td

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

The above table shows the both two selected banks have negative regression relation between WC and Td. The regression co-efficient of NDBL and DCBL 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 NDBL and DCBL 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 NDBL and DCBL respectively.

The coefficient of determination (r^2) of NDBL and DCBL are 0.76 and 0.979 respectively. It indicates that 76% and 97.9% variation on WC of NDBL and DCBL 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 NDBL is smaller than t-tabulated at 5% level of significant at 3 degree of freedom where as DCBL have greater t-calculated than t-tabulated. So the correlation between WC and Td of NDBL is insignificant and DCBL is significant. The correlation between WC and Td of DCBL is significant and negatively correlated that means while Td increase then WC will decreases.

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

Table 4.28

QR on DR

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

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

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

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

Table 4.29

CB on TD

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

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

The regression constant is 477.556 and 36.123 of NDBL and DCBL respectively. It indicates that the CB of those banks affected by other factors deeply besides the TD of respective banks.

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

The t-calculated value of correlation between CB and TD is smaller than value of tabulated t at 5% level of significance in NDBL as a result the correlation of CB and TD of that bank is insignificant. Similarly the value of calculated 't' is greater than tabulated 't' in case of DCBL. 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 NDBL whereas the CB of DCBL is related with TD.

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

Table 4.30

QA on CL

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

This table shows the simple regression of QA on CL during the study period. The regression coefficient of NDBL is positive whereas the regression coefficient of DCBL is negative. It

means that the correlation between QA and CL is inverse relationship in case of DCBL whereas the QA is positively correlated with CL in case of NDBL.

The S.E. if NDBL and DCBL are 0.377 and 0.187 respectively. The coefficient of determination of NDBL and DCBL are 0.018 and 0.011 respectively. It indicates that variation in QA of 18% and 11% explain by variation in CL of NDBL and DCBL respectively.

The value of calculated 't' of NDBL and DCBL 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.

4.2.5.2 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 following multiple regression has been analyzed.

4.2.5.2.1 Cash and Bank Balance on Total Deposit (TD), and Net Profit (NP)

Table 4.31

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
NDBL	474.274	-0.018	-0.056	0.592	0.483	0.86	0.007
DCBL	37.166	0.259	0.242	3.752	0.10	0.936	0.876

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 selected development banks that CB depends on NP and TD. As far as regression coefficient is concerned, the beta coefficient (b_1) of TD and (b2) have NP respectively are –0.018 and –0.056of NDBL and –0.259 and 0.242 of DCBL.

The regression coefficient of Td and NP are positive for DCBL that means increase in these variable results also increase in CB. But as regression coefficient of TD and NP are negative for NDBL 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 NDBL and DCBL are 474.274 and 37.166 respectively. The multiple correlations of NDBL and DCBL are 0.086 and 0.936 respectively. These all indicates that there exists a positive and highly positive relationship exists in NDBL and DCBL respectively. The coefficient of multiple determinations of NDBL and DCBL are also 0.007 and 0.876, which indicates variation in CB is due to joint of change in TD and NP.

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

Table 4.32

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
NDBL	0.315	-0.004	0	0.009	0	0.678	0.460
DCBL	0.090	-0.001	0	0.001	0	0.866	0.750

Regression equation:

$QR = a + b_1 SDR + b_2 DR$

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

The above table shows the result of multiple regression analysis of selected development banks that QR depends on SDR and DR. As far as regression coefficient is concerned, the

beta coefficient (b $_1$) of SDR and (b$_2$) have DR are –0.004 and 0 of NDBL and –0.001, and 0 of DCBL respectively.

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

The constant 'a' in multiple regressions that QR depends SDR and DR ratios for NDBL and DCBL are 0.315 and 0.090 respectively. The multiple correlations of NDBL and DCBL are 0.6780 and 0.866, which indicates that there is positive relationship exists.

4.2.6 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.

4.2.6.1 One Way ANOVA Analysis

The following tests have been 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.

STEP –1: Formulation of H_0 & H_1

H_0: $\mu1 = \mu2$ 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: $\mu 1 \ne \mu 2$ 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

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

Where,

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

MSE= Mean sum of square due to error

Table 4.33

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	$F=\dfrac{MSC}{MSE}$ =0.0443
Due to error	SSE=2611.601515	N-C=10-2=8	MSE=326.4501894	
Total	SST=2626.064772	1+8=9	………..	

SOURCE ANNEX –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.

STEP –1: Formulation of H_0 & H_1

H_0: $\mu1 = \mu2$ i.e. There is no significant difference in the average value of Current ratio between two selected banks.

H_1: $\mu1 \quad \mu2$ i.e. there is significant difference in the average value of Current ratio between two selected banks.

II. Level of significance: =5%

III. Test statistics

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

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Table 4.34

Calculation in one-way ANOVA

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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	$F = \dfrac{MSC}{MSE}$ =1.1563
Due to error	SSE=0.036039222	N-C=10-2=8	MSE=0.004504903	
Total	SST=0.041248322	1+8=9	………..	

SOURCE ANNEX –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 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.

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

II. Level of significance: =5%

III. Test statistics

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

Table 4.35

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	$F=\dfrac{MSC}{MSE}$ =0.367861
Due to error	SSE=0.034019256	N-C=10-2=8	MSE=0.00425240	
Total	SST=0.035583553	1+8=9	………..	

SOURCE ANNEX –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 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.

STEP –1: 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: =5%

III. Test statistics

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

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Table 4.36

Calculation in one-way ANOVA

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

SOURCE ANNEX –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 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.

STEP –1: 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: $=5\%$

III. Test statistics

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

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Table 4.37

Calculation in one-way ANOVA

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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	$F=\dfrac{MSC}{MSE}$ =6.07814067
Due to error	SSE=77.81623974	N-C=10-2=8	MSE=9.727029967	
Total	SST=136.9384962	1+8=9	………..	

SOURCE ANNEX –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_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

From the above analysis and interpretation of data, the major findings of this study during the study period are summarized below:

1. Cash and bank balance to total deposit ratio was calculated by dividing cash and bank balance by total deposits. The mean ratio of DCBL was greater than that of NDBL, which means that there was not uniformity in the ratios in CV of DCBL, which signifies greater consistency in it. Cash and bank balance to total deposit ratio of both banks were in fluctuating trend. The solvency position of NDBL seems better than DCBL in the fifth year. Likewise NDBL was seen to be less successful to utilize the fund raised from the total deposits that may ultimately affect the profitability adversely. The ratios appeared less uniform in NDBL

2. Current ratio of NDBL and DCBL were in fluctuating trend through out the study period. The mean ratio of NDBL was higher than DCBL. Like wise CV of DCBL was lower than NDBL, which means that NDBL had more fluctuation in ratios as compared with DCBL. Mean ratio shows the highly liquid position of NDBL, which shows the banks, did not have proper investment plan. DCBL had lower mean ratio than that of NDBL but the bank may face the problem of working capital if they need to pay current liabilities at demand. Current ratios were in slightly fluctuating trend for NDBL and DCBL. Both banks could not maintain the conventional standard of 2:1. However the average ratio of NDBL was greater than that of DCBL, which signifies that NDBL was more capable of meeting immediate liabilities in contrast to DCBL.

3. The CV of NDBL for quick ratio was greater than that of DCBL, which shows more fluctuation in quick position. Cash and bank balance to current assets ratio were fluctuating in NDBL and DCBL. Quick ratios of both banks were in fluctuating trend. Both banks could not maintain the conventional standard of 1:1. The average ratio of NDBL was greater than the same of DCBL, which means that NDBL is more successful in maintaining the liquidity position. The ratios in DCBL found to be more consistent than that of NDBL.

4. Return on shareholder's equity ratio measures the return on shareholder's investment in the bank. The average ratio of NDBL for the return on shareholders equity was

higher than that of DCBL. Likewise the CV of DCBL was lower. The ratios of DCBL were in increasing trend through out the study period. But the ratios of NDBL were in fluctuating trend. Average return on shareholders equity ratio of NDBL found to be greater than DCBL because of the negative net profit and negative shareholders equity.

5. Working capital of both banks was in negative. It means both of the banks had fewer current assets than current liabilities. There should have current assets twice-current liabilities. Here, working capital did not earn any return in both banks. The ratio in third and fifth year was positive because of negative profit. Return on working capital was considerably higher in NDBL, which signifies that NDBL was more successful to utilize the working capital for making profit. The ratio varied more in NDBL.

6. Return on total deposit ratios in NDBL were in decreasing trend up to third year and increase in fourth year and again decrease in fifth year and ratios in DCBL were in increasing trendMean and CV of NDBL was –4.36 and –201% respectively. Similarly mean and CV of DCBL was 1.69 and 35% respectively for the study period. The average ratio of NDBL was lower than that of DCBL.

7. Debt to equity ratio was in decreasing trend for NDBL and increasing trend for DCBL. This shows that DCBL has used more debt than equity financing. This shows the interest expense was high for DCBL. Debt to equity ratios of both banks depicted that employment of debt was higher than the capital. Comparatively, capital structure of NDBL seemed more levered i.e. more risky.

8. Debts to assets ratios were in increasing trend for both banks. Debt to assets ratio remained higher in NDBL than in DCBL, which reveals that the greater portion of assets in NDBL was financed through the outsider cost-bearing fund. The ratio appeared more uniform in DCBL.

9. Interest coverage ratio evaluates the debt serving capacity of the banks. The higher ratios show that bank can pay the interest easily. The ratios were in increasing trend for DCBL and in fluctuating trend for NDBL. It was seen that third and fifth year NDBL had difficulties in paying its interest. Average interest coverage ratio in DCBL remained greater than in NDBL, which reveals that interest-paying capacity of DCBL was considerably better than that of NDBL.

10. Long-term debt to net worth ratio of NDBL was in fluctuating trend. Similarly the same ratio for DCBL is in increasing trend. The ratios for NDBL came 0,0.37, -0.87,0 and –0.12 for the corresponding study period. Similarly the ratios for DCBL came 0,0.01,0.03,0.62 and 0.56 for the respective study period.

11. Loans and advances to total deposits ratios of NDBL were in fluctuating trend and DCBL had the ratios in fluctuating trend. Similarly Loans and advances to fixed deposits ratio in both banks were in fluctuating trend.. Loan and advance to total deposit ratio appeared significantly higher in DCBL. It indicates the better utilization of total deposits in DCBL than in NDBL. The ratios remained more uniform in DCBL The mean loan and advance to fixed deposit ratio appeared higher in DCBL, which indicates that turnover of fixed deposits in form of loan, and advance was better in DCBL. The ratio varied less in same bank. The saving deposits of both banks were zero in first year because both banks had no collection of saving deposits in that period. The mean loan and advance to saving deposit ratio found higher in NDBL, which indicates that turnover of saving deposits in form of loan and advance, was better in NDBL. The ratios varied less in DCBL.

12. Investment to total deposit ratios of NDBL as well as DCBL were in fluctuating trend. As depicted by higher investment to total deposits ratio in NDBL, it seems more successful to utilize the depositor's fund in investment. The ratio disappeared slightly to greater extent in DCBL. The ratios varied in DCBL.

13. Cash and bank balance to current assets ratios of both banks were in slightly fluctuating trend. The average ratio of DCBL was higher than that of NDBL, which tells that DCBL had more liquidity of cash than that of NDBL. The ratios in DCBL found to be more consistent.

14. Long-term debt to net worth ratio showed both banks had no long-term debt for first year. Average ratio in DCBL was higher and ratios in DCBL were not consistent.

15. In case of NDBL 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. The correlation of cash and bank balance with saving deposit is not concluded and remaining insignificant. 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.

16. In case of DCBL 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.

17. The simple regression analysis of CB on CL shows that NDBL has negative coefficient where as DCBL has positive coefficient. It indicates that CB of NDBL is negatively correlated with CL; where as CB of DCBL is positively correlated with CL. The r^2 shows that CB of DCBL highly affected by CL where as CB of NDBL lightly affected by CL.

18. The simple regression analysis of WC on TA shows that regression coefficient (b) is negative for both bank NDBL and DCBL. S.E of NDBL is higher than that of DCBL. The r^2 of NDBL is 0.985 where as DCBL is 0.985. It indicates that WC of DCBL is greatly affected by TA than of NDBL. The value of correlation between WC and TA of NDBL is insignificant or not related with each other but the correlation with TA is significant in DCBL.

19. 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 NDBL than that of DCBL. The Loan of DCBL is highly depended in its TD than NDBL, which is measured by r^2.

20. 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 DCBL highly depends upon Td than NDBL measured by r^2. The correlation between WC and Td of NDBL is insignificant where as correlation of the same ratios of DCBL is significant.

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

22. The simple regression coefficient (b) of CB on TD is negative for NDBL and positive for DCBL. The CB of NDBL lightly depends upon TD where as CB of DCBL highly depends upon TD measured by r^2.

23. The regression coefficient of QA om CL for NDBL is positive but negative for DCBL. The values of correlation between QA and CL for both banks are insigicant. The QA on CL of NDBL shows that the QA is more dependent with CL comparing with DCBL.

24. The multiple regression analysis of CB on TD and NP ratios shows that the regression coefficient (b) in NDBL is negative. Similarly the multiple regression analysis of CB on TD and NP ratios shows that the regression coefficient (b) in DCBL 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.

25. The multiple regression analysis of QR on SDR and DR ratios shows that the regression coefficient (b) in NDBL as well as DCBL 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.

26. 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 RECOMMENDATION

This chapter is a complete conclusive and suggestive package, which contains summary, conclusions and recommendation. This would be meaningful to the top management of the bank to initiate action and achieve the desire result. This chapter is dedicated to provide conclusions after the comparatively analyzing the cash and liquidity management of Nepalese development bank with reference to NDBL and DCBL. This chapter shows the final report of the study. The chapter is divided into three sections. First section deals with the summary of the study. Shortcut of the decision that is found in previous chapter is presented in short manner. Summary gives the brief introduction to the entire chapter of the study and shows the actual facts of the present situation under the topic of the study. This is called summary of the study. The details of the findings are not better to show. So, the short forms of the previous chapter are presented here to make easy to the reader as well as the researcher to show the final report. The second section is related with the conclusion of the study in which overall decision made under the study are presented. The third section of this chapter is remedies of recommendation of the study. The details of this section are presented below.

5.1 Summary

After adopting the economic liberalization policies by the government, various commercial banks, development banks, financial companies, insurance companies, co-operatives and other have been setup within a short period. The basic objective of the liberalization policy was to bring healthy competition in financial sector and attract the investment from private sectors. As a result many commercial and development banks have been established. Nepal Development Bank was established as the first development bank in Nepal. It has been established under the Development Bank Act 2052(1996) in 2055 BS. NDBL has been actively participating to cater demand of medium and long-term finance for the industrial,

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commercial, agricultural, tourisms, infrastructure sectors and other services by offering various banking facilities. Similarly Development Credit Bank Limited was established in the year 2001 under the provision of Company Act, and Development Bank Act, 1996. It is the first national level private development bank without having any direct involvement of Government of Nepal and Nepal Rastra Bank in the equity and management of this bank. The bank came out with its initial public offering in January 23,2002 with its paid up capital of Rs.160 million. DCBL is a diverse development bank having presence in every key sector of financial services. Its diversified and wide customer base reflects this.

The study mainly deals with the comparative analysis of the liquidity position and cash management practices of NDBL and DCBL i.e. management of individual current assets like cash and bank balance. This study aimed to find out the financial position of selected banks in relation to ratio analysis. Its main objective is to find out the liquidity position of selected bank and evaluate its major significance from findings of the study. It also gives priority to make comparative study of profitability position of NDBL and DCBL

As mentioned earlier, this study concentrated on the comparative analysis of cash and liquidity management practices of aforementioned bank NDBL and DCBL. From the perspective of the researcher the development banks of Nepal are chosen for the study mainly because of no earlier research has been done on aforementioned topic of development banks.

To fulfill the objectives, an appropriate research methodology has been developed, which includes financial tools and statistical tools. In the ratio analysis, four different categories have been 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.

In chapter fourth, data collection through various sources have been presented. It mainly consists the analysis of various types of data regarding cash and liquidity management of Nepalese development banks.

On the basis of study, the preceding chapter has brought certain conclusions and recommendations are summarized below.

5.2 Conclusions

In conclusion, it can be said that cash and liquidity management is one of the most important parts of every financial institution. Liquidity is the most sensible and crucial aspect of the bank, which is often compared to lifeblood of the human being. Lack of adequate liquidity is often one of the first signs that a bank is in serious financial trouble and lead to the loss of public faith upon banks. Thus, ensuring adequate liquidity is a never-ending problem for the bank management that will always have significant implications for the bank's profitability. After analyzing the sample bank NDBL and DCBL, using various important conclusions have been derived from the study.

Liquidity position of NDBL was stronger than that of DCBL, which shows NDBL had readiness to serve its customers more efficiently in comparison with DCBL for the purpose of meeting current liabilities. Although higher liquidity means lower risk as well as lower profit but higher liquidity is not always the cause of lower profitability.

Net profit to total deposit ratio was considerably higher in DCBL, which signifies that DCBL was more successful to utilize deposit for making profit.

Debt to total assets ratio was increasing trend for both banks in different proportion. This showed both of banks employed varying proportion of interest bearing debt for the purpose.

Interest coverage ratio of NDBL for different five years varied considerably because of higher CV ratio.

However, holding high level of cash and bank balance is also not good from the viewpoint of profit making organization. DCBL was found good in matter of creating credit to earn fixed rate of return. NDBL was also found taking high-risk strategy as it had employed higher proportion of outsiders fund in its capital structure. DCBL was more efficient to utilize its resources in profitable sector than that of NDBL. The utilization ratios of both banks found satisfactory. However DCBL was seen more efficient to utilize its assets in profit generating areas as compared to NDBL.

DCBL had used more debt than equity financing. This showed the interest expense was high for DCBL.

Average return on total assets ratio of DCBL was much higher than in NDBL. It implies that the profitability position of NDBL in the study period proved to be weaker in spite of improvement in fourth year period. The ratios varied more in DCBL.

Average return on shareholders equity ratio of NDBL found to be greater than DCBL because of the negative net profit and negative shareholders equity.

Return on working capital was considerably higher in NDBL, which signifies that NDBL was more successful to utilize the working capital for making profit. The ratio varied more in NDBL.

As depicted by higher investment to total deposits ratio in NDBL, it seems more successful to utilize the depositor's fund in investment. The ratio disappeared slightly to greater extent in DCBL. The ratios varied in DCBL.

The mean loan and advance to fixed deposit ratio appeared higher in DCBL, which indicates that turnover of fixed deposits in form of loan, and advance was better in DCBL. The ratio varied less in same bank.

In case of NDBL 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 DCBL 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 NDBL has negative coefficient where as DCBL has positive coefficient.

The simple regression coefficient (b) of QR on DR is positive for NDBL. The S.E of DCBL is higher than that of NDBL. 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 NDBL is negative whereas the same ratio is positive for DCBL.

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

After completing the research entitled "Cash and Liquidity Management of Development banks in Nepal" and presenting, analyzing, concluding the data and related topics, some recommendations are presented below:

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.

The investment positions of DCBL and NDBL, out of its total deposit are not satisfactory because the investment to total deposit ratio are too much low. The study shows minimums of total deposits are used for investment. So, it is recommended that both banks should have to give priority to invest in profitable investment opportunity than providing maximum unsecured loan.

Both bank used very high proportion of debt in its capital structure. The NDBL have very high debt to total total assets. Similarly, DCBL have also very high debt to total assets. So, this indicates the very poor and critical financial condition of both banks. The ratio of NDBL is very critical than DCBL. So, both banks should either increase its own equity capital or decrease debt financing of present situation.

Both bank have provided more loan and advance from its saving, fixed, and total deposit. So, both banks should review its loan policy.

The government has not given any consideration to legislate legal rule regarding the liquidity position as well as debt financing. So, they should pay their attention for providing certain legal framework in liquidity maintaining policy as well as debt financing policy.

Profitability position of NDBL was much weaker than DCBL. It should improve overall efficiency by investing in more returnable sectors i.e. risky area proper risk analysis.

Debt servicing capacity of NDBL appeared poor. So, it is better to search more profitable sectors for investment and utilizing of the deposit collected. The capital adequacy position of NDBL seem to be less satisfactory then DCBL. So, it needs to raise the net worth.

The quality of assets owned by NDBL seen to be proper in comparison to DCBL. Therefore NDBL is suggested to advance the loans only after the proper analysis of customers.

Earning of NDBL could not grow proportionately. Therefore NDBL is suggested to invest in other current assets rather than in the lower yielding treasury bills on which interest rate is decline at present. If the liquidity position doesn't appear weaker, it will be better for the banks to increase the investment in long-term loan after analyzing risk.

It will be better for both banks, to open branches in other cities and rural areas in order to find profitable opportunities.

Government should formulate plans and policies and launch various programs for the growth of development banks focusing on private sector development banks.

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Annex-I

The simple correlation analysis of NDBL 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

The simple correlation analysis of DCBL between different variables

S.n	Variables	r	Relation	(r2)	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.

The correlation coefficient are calculated using computer excel programmed. The P.E is calculated using the following formula:

P.E of Cash and Bank Balance & NRB Balance of NDBL

$$\text{P.E.} = \frac{1 - r^2}{\sqrt{n}}$$
$$= \frac{0.6745 \times 1 - 0.100394}{\sqrt{5}}$$
$$= \frac{0.6745 \times 0.8996059}{2.236068}$$
$$= 0.271362$$

Correlation between Cash and bank Balance & NRB Balance of NDBL & DCBL

Fiscal Year	Cash and Bank Balance		NRB Balance	
	NDBL	DCBL	NDBL	DCBL
2058/059	260.62	218.87	50.8300	3.2500
2059/060	527.14	421.69	23.5800	19.7400
2060/061	292.09	387.53	26.1600	14.5300
2061/062	295.48	406.69	36.4200	27.1400
2062/063	506	533.72	43.1400	121.9500
Correlation(r)			(0.3169)	0.7961
r^2			0.1004	0.6337
$1 - r^2$			0.8996	0.3663
$\sqrt{n}$			2.2361	2.2361
S.E			0.4023	0.1638
P.E			0.2714	0.1105

Note: And other calculation are done accordingly

Annex-II
Simple Regression Analysis

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

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 DCBL

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		
		B	Std. Error	Beta	t	Sig.
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		
		B	Std. Error	Beta	t	Sig.
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

Annex-III
Multiple Regression Analysis

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

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 DCBL

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.

Annex-IV
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.

NDBL (c_1)	DCBL (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
c_1= 148.3609	c_2= 136.3345	$c_1{}^2$= 6973.5175	$c_2{}^2$= 3757.6957

I. Calculation of sum of individual items:

$T = c_1 + c_2$

$= 148.3609 + 136.3345$

$= 284.6954237$

ii. Calculation of correction factor (c.f)

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

$= 284.6954237/10$

$= 8105.148427$

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

$SST = c_1{}^2 + c_2{}^2 - c.f$

$= 6973.51752 + 3757.695679 - 8105.148427$

$= 2626.064772$

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

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

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

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

Note: Other calculations are done accordingly.