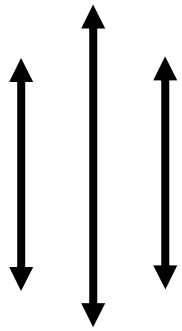
CASH MANAGEMENT IN NEPALESE PUBLIC ENTERPRISES
(A Case Study of Nepal Electricity Authority)

A Thesis Submitted to:
Office of Dean
Faculty of Management
Tribhuvan University



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In partial fulfillment of the requirements for the degree of
Master of Business Studies (M.B.S.)

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RECOMMENDATION

This is to certify that the thesis

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

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VIVA-VOCE SHEET

We have conducted the viva-voce examination of the thesis
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and found the thesis to be the original work of the student written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for the degree of Master of Business Studies (M.B.S.)

Viva-Voce Committee

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DECLARATION

I hereby declare that the work reported in this thesis entitled cash management cash in Nepalese Public enterprises (A Case Study of Nepal Electricity Authority) submitted to office of the Dean, Faculty of Management, Tribhuvan University is my original work done in the form of partial fulfillment of the requirement for the degree of Master of Business Studies (M.B.S.) under the guidance and supervision of Mr. Harishankar Pant of Siddhanath Multiple Campus, Mahendranagar. Hence, the sole responsibility would be remained on me regarding this thesis for any positive of negative implication if emerged in future.

……

Sudeep Nagarkoti

Date:-

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Sudeep Nagarkoti

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ABBREVIATIONS

GDP:	Gross Domestic Product
CV:	Coefficient of Variation
F/Y:	Fiscal Year
GHI:	Global Hunger Index
HDI:	Human Development Index
NEA:	Nepal Electricity Authority
NRB:	Nepal Rastra Bank
MW:	Mega Watt
ROA:	Return on Assets
ROCE:	Return on Capital Employed
ROE:	Return on Equity
SCT:	Smart Choice Technology
SMEs:	Small and Medium Sized Enterprises
SWOT:	Strength, Weakness, Opportunities and Threats
UAE:	United Arab Emirates
U.K.:	United Kingdom
US:	United State of America
Viz.	Namely
IPP:	Independent Power Producer

CHAPTER-I
INTRODUCTION

1.1 Background of the Study

Nepal is among the poorest and least developed countries in the world, with almost one quarter of its population living below the poverty line. Agriculture is the mainstay of the economy, providing a livelihood for three-fourths of the population and accounting for about one-third of GDP. Industrial activity mainly involves the processing of agricultural products, including pulses, jute, sugarcane, tobacco, and grain. Nepal has considerable scope for exploiting its potential in hydropower, with an estimated 42,000 MW of feasible capacity, but political instability hampers foreign investment. Additional challenges to Nepal's growth include its landlocked geographic location, civil strife and labor unrest, and its susceptibility to natural disaster.

The overall growth rate depends primarily on the growth rate of agriculture sector. The growth in other sectors of the economy is constrained by the small domestic market, poor physical infrastructure, inadequate human and financial resources, and land-locked of the country, the political instability and the topography of the country, In later years the insecurity caused by moist insurgency though currently resolved has also become a major factor to limit the overall economic development of the country.

Poverty is one of the most pressing problems in Nepal. Gross national income per capita per annum is 644US dollars. According to the Human Development Index (HDI), Nepal ranks 138th of 177 countries. Nepal was ranked 54th worst of 81 ranked countries (those with GHI > 5.0) on the Global Hunger Index in 2012, between Cambodia and Togo. Nepal's current score of 19.9 is better than in 2011 (20.0) and much improved than its score of 27.5 in 1990 (www.wikipedia.com).

More than ten years of political conflict had created an adverse effect on economy. Economic growth has been between 2 and 4 per cent in recent years and has not been sufficient to reduce the level of poverty.

Nepal has few industrially usable raw materials. Consequently, alongside its agriculture, the county is forced to specialize in processing and services, where it faces strong competition from its neighbors, India and China. Since the domestic Nepalese market is small and purchasing power low, it is difficult to attract foreign investors. Nepal's export-based sectors are weak, with only carpets and textiles being internationally competitive. Remittances from migrant workers are becoming increasingly important for the economy and poverty reduction. Besides India,

Nepalese migrant workers are to be found above all in the Gulf States, Malaysia, and Hong Kong. Ninety per cent of enterprises are small. While they make an important contribution to job creation, these enterprises generate only four per cent of gross domestic product. Large public enterprises which are subsidized by the state continue to represent an obstacle to free competition. The study is concentrated in analyzing the cash management system in Nepalese public enterprises. For this reason Nepal Electricity Authority is taken for the purpose of the study.

Cash and Cash Management

The term "cash" constitutes the most readily acceptable item of current assets to a firm. It includes currencies, coins. cheques and also some near cash items such as marketable securities and bank time deposits. Some items of cash whereas, other items such as Treasury bills, commercial papers and other marketable securities are readily convertible in to cash. The financial manager must ensure that there is sufficient cash in the business. If there is excessive cash, the financial manager must seek to invest a low-risk highly liquid money market instrument that is conveniently convertible into cash. If there is inadequate cash the financial manager must manage it to avoid payment problems.

Cash is regarded as both input and output of a business operation. Cash serves as input of a sense that all business activities are carried on without any obstruction with the availability of cash. All business works begin with the provision of sufficient cash to do business. At the same time, the cash is the thing that a businessman ultimately wants to achieve through the sales of goods and services. Cash as a means and ends business operation must be held in sufficient quantity. Holding of cash both in excess and insufficient amount may lead a firm to problems shortage of cash puts obstruction in the production process whereas excessive cash then requirement contributes nothing to the profitability of the firm as idle cash earn nothing. Therefore, as financial manager faces a challenge of maintaining optimum level of cash, which bypass the risk and also does not put negative impact on firm's profitability. The basis issue in cash management is to maintain the investment in cash as low as possible while still keeping the firm operating efficiently and effectively (Van Horne, 1991:246).

1.1.1 A brief introduction to Public Enterprises

Public enterprises as a form of business organization have attained a great deal of significance in recent times. During 20th century various governments have taken active part in the industrial and commercial activities. The term public enterprise denotes a form of business organization owned and managed by the state government of any other public authority. So it is an undertaking owned and controlled by the

local or state of central government. The whole of most of the investment is made by the government.

Public Enterprises are the statutory companies which produce goods and services to satisfy the basic needs of the people. The government is the owner of such enterprises. The practicality of public enterprises emerged with the concept of welfare state that state should be responsible to satisfy the basic needs of its people.

Usually the public enterprises are established for production and marketing of fundamental goods and services in a suitable rate. The provision of services by public enterprises is a common practice in Europe and elsewhere.

A public enterprise denotes "state ownership and operation of industrial, agricultural, financial and commercial undertakings" (A.H. Hansen)

"Public enterprises are autonomous or semi-autonomous corporations and companies established, owned and controlled by the state and engaged in industrial and commercial undertakings" (N.N. Malaya).

Characteristics

The chief characteristics of public enterprises are:

Autonomous or semi-autonomous organization

Public enterprises are an autonomous or semi-autonomous organization because some enterprises work under the direct control of the government and some organizations are established under statutes and companies act.

State control

The public enterprises are financed, owned and managed by the government may be a central or state government.

Rendering service

The primary objective of the establishment of public enterprises is to serve the public at large by supplying the essential goods at a reasonable price and creating employment opportunities.

Useful to various sectors

The state enterprises serve all sectors of the people of the company. They do not serve a particular section of the people in the community.

Monopoly enterprises

In some specific cases private sectors are not allowed and as such the public enterprises enjoy monopoly in operation. The state enterprises enjoy monopoly in Fuel, Post and Telegraph and Energy production.

A Direct channel for use of Foreign Money

Sometimes the government has received foreign assistance from industrially advanced countries for the development of industries. These advances received are spent through public enterprises.

Public Accountability

The state enterprises are liable to the general public for their performance because they are responsible for the nation.

Agent for Implementing Government Plans

The public enterprises run as per the whims of the government and as such the economic policies and plans of the government are implemented through public enterprises.

Financial Independence

Though, investments in government undertaking are done by the government, they become financially independent by arranging finance for day-to-day operation.

The main objectives of Public Enterprises

The fundamental objectives of the state enterprises are to serve the people and help in developing a state of industrialization in the country. The following are some of the pivotal objectives of the state enterprises:

- ✓ To check the formation of monopolies
- ✓ Facilitate all-round industrial development
- ✓ Public welfare
- ✓ Provide Necessities
- ✓ Create employment opportunities
- ✓ Channelizing of public savings
- ✓ Avoid concentration of economic power

- ✓ Exploitation of natural resources
- ✓ To carry production in certain sensitive areas
- ✓ Increase in government revenue

1.1.2 Public Enterprises in Nepal

Public enterprises can be classified as follows:

- ✓ Manufacturing Enterprises
- ✓ Trading Enterprises
- ✓ Service Enterprises
- ✓ Engaged in social services
- ✓ Public Utilities & Others
- ✓ Financial Enterprises

1.2 Background of Nepal Electricity Authority

Nepal Electricity Authority (NEA) was created on August 16, 1985 (Bhadra 1, 2042) under the Nepal Electricity Authority Act 1984, through the merger of the Department of Electricity of Ministry of Water Resources, Nepal Electricity Corporation and related Development Boards.

To remedy the inherent weakness associated with these fragmented electricity organizations with overlapping and duplication of works, merger of this individual organization became necessary to achieve efficiency and reliable service.

Objectives

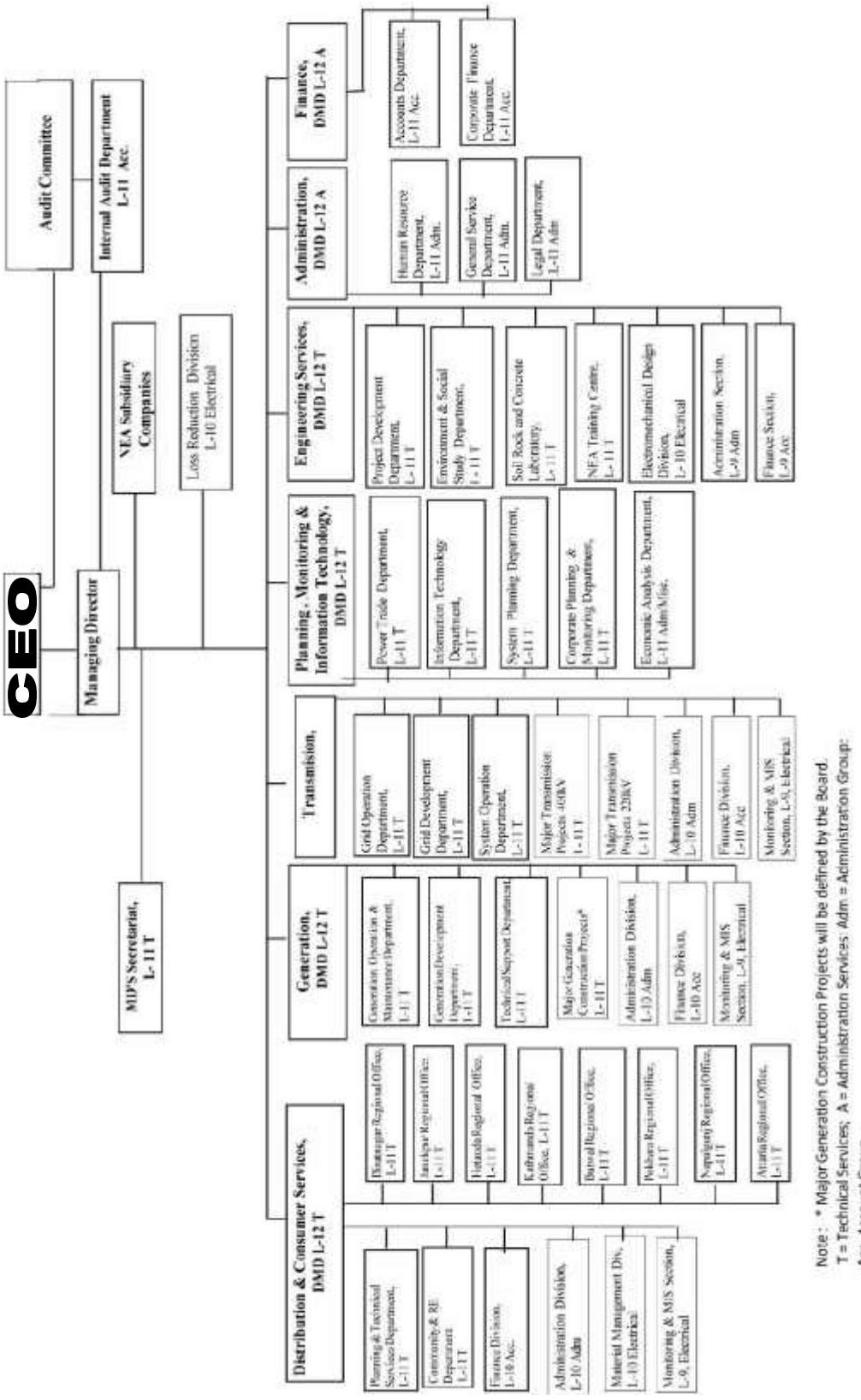
The primary objective of NEA is to generate, transmit and distribute adequate, reliable and affordable power by planning, constructing, operating and maintaining al generation, transmission and distribution facilities in Nepal's power system both interconnected and isolated.

Responsibilities

In addition to achieving above primary objective, NEA's major responsibilities are:

- ✓ To recommend to Government of Nepal, long and short-term plans and policies in the power sector.
- ✓ To recommend, determine and realize tariff structure for electricity consumption with prior approval of Government of Nepal.
- ✓ To arrange for training and study so as to produce skilled manpower in generation, transmission, distribution and other sectors.

Corporate Structure of NEA



Board of Directors

Management of NEA is entrusted to a Board of Directors which is constituted as follows:

- ✓ Secretary, Ministry of Energy GoN: Chairman
- ✓ Secretary, Ministry of Finance GoN: Member
- ✓ One prominent person from commerce, industry, or financial sector: Member
- ✓ One person from consumers group: Member
- ✓ Two prominent persons with experience in power sector from outside government: Member
- ✓ Managing Director, NEA: Member Secretary

The managing Director acts as member secretary as well as chief executive officer.

1.3 Cash Management Practice of Nepal Electricity Authority

Cash is the most important current assets for the operation of the business firm. It is an idle and non-earning assets. Cash is the money, which the firm can disburse immediately without any restriction. The term cash includes coins currency and cheques held by the firm and balance in its bank accounts. Sometimes near cash items, such as marketable securities is also included in cash. Managing cash flows is an extremely important task for financial managers, because the primary goal of a financial manager is to maximize firm's value and is based on cash flows. The financial manager's task is to determining how much cash a firm should have on hand at any time to ensure normal business operations continue without interruption. If a firm holds more cash than it needs, share holder's returns will not be maximized. 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, which 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. Thus, management of cash has been regarded as one of the conditioning factors in the decision-making.

The cash management practice of NEA through the effort of various departments, financial performance; Loans, tariff level etc. are as follows.

1.4 Statement of the Problem

Managing cash flow is the most important job of business managers. It has been the most intricate and challenging area of modern corporate finance as the management always faces a trade-off between the liquidity and profitability of the company. Through most of the enterprises in Nepal have well recognized the importance of proper cash management, they are still facing the problem of cash management. By and large, most enterprises experience periodic accumulation of surplus cash and

corresponding cash shortage from time to time. Cash management refers to the proper management of firm's/business cash position. The organization needs cash primarily to pay its obligations. If a company fails to pay an obligation when it is due because of the lack of cash, the company is insolvency. Insolvency is the primary reason firms go bankrupt. The prospects of such a dire consequence should compel companies to manage their cash with care. Moreover, efficient cash management means more than just preventing bankruptcy. It improves the profitability and reduces the risk to which the firm is exposed. Cash is also held for precautionary motive to meet any contingency in the future and lastly the handling of cash to speculative motive to the desire of a firm to take advantage of opportunities.

Many companies experience cash management difficulties but entrepreneurs and managers can take steps to minimize the impact of such problems and help maintain the continued viability of he business. However the study of cash management has not received needed attention in recent years.

Nepal Electricity Authority is one of the public enterprises established in 2042 BS. The aforementioned issues and problem are widely prevailing in the Nepal Electricity Authority (NEA). The authority is facing with high cost of production, unfair agreement with private sectors to purchase power and unable to manage cast to sort out the problems. Hence, the study is targeted, and purposed to analysis the hidden issues of dis-management and provides way out for its wellbeing through solving the following problem:

a) Does the NEA manage all the cash & bank balance in proper manner of operating activities?
b) Does the current asset of NEA exceed the current liabilities?
c) What is the relationship between cash & bank balance with the sales, current assets, current liabilities and net profit after tax etc?
d) Has the NEA been able to collect & utilize fund efficiently?
e) What is the cash management practice adopted by NEA?
f) Has the NEA maintained sufficient of liquidity?

1.5 Objectives of the Study

The present study has been conducted to examine cash management of public service enterprises of Nepal, on the basis of the case study of Nepal Electricity Authority.

It focuses on the investment decision of the company and in particular the cash management in short run business operation of the firms, i.e. management of the individual current assets like; cash and bank balance, receivable and inventory in the short-run.

- ✓ To analyze the cash management techniques practices of Nepal Electricity Authority.
- ✓ To examine the liquidity position of Nepal Electricity Authority.
- ✓ To analyze the cash flow statement of Nepal Electricity Authority.
- ✓ To examine the optimum cash & bank balance transaction size of Nepal Electricity Authority.
- ✓ To examine the economic cash & bank balance with total cost of holding cash & bank balance of Nepal Electricity Authority.

1.6 Limitation of the Study

In the dynamic environment, nothing is free from limitations. So, this study is also no exception. Although, the effort has been made to minimize the limitations to the best possible extent, yet it suffers from the below mentioned limitations. The scope of the study is subject to various limitations, which are as follows:

- ✓ The study covers the analysis of NEA performance of only 10 years (i.e. FY 2004 to 2013).
- ✓ Use of secondary data is the other limitation, which could limit the scope of the study.
- ✓ The study is limited only to cash management and its analysis i.e. concerns only with managerial, financial and accounting aspects.
- ✓ The study is concentrated only in analyzing the cash management of Public Enterprises (i.e. Nepal Electricity Authority).

CHAPTER-II
REVIEW OF LITERATURE

This chapter highlights upon the available literature on theoretical and applied aspects of the related field. It is also a way to avoid duplication of the research works already conducted by the past researchers. For this, several books, dissertation, reports and articles published in journals are reviewed. This chapter has been planned in the following manner.

- Conceptual framework
- Review of Thesis & Articles

2.1 Conceptual Framework

2.2.1 Meaning of Cash Management

"Cash is the common purchasing power or medium of exchange. As such it forms the most important component of working capital. Not only that it largely upholds, under given condition, the quantum of other ingredients of working capital viz. inventories & debtors, that may be needed for a given scale and type of operation" (Banarjee; 1985:1)

Cash is regarded as both input and output of a business operation. Cash serves as input of a sense that all business activities are carried on without any obstruction with the availability of cash. All business works begin with the provision of sufficient cash to do business. Some items of cash whereas, other items such as Treasury bills, commercial papers and other marketable securities are readily convertible in to cash. The financial manager must ensure that there is sufficient cash in the business. If there is excessive cash, the financial manager must seek to invest a low-risk highly liquid money market instruments that are conveniently convertible into cash. If there is inadequate cash the financial manager must manage it to avoid payment problems.

Cash as a means and ends of business operation must be held in sufficient quantity. Holding of cash both in excess and insufficient amount may lead a firm to problem shortage of cash puts obstruction in the production process whereas excessive cash then requirement contributes nothing to the profitability of the firm as idle cash earn nothing therefore, a financial manager faces a challenge of maintaining optimum level of cash, which bypass the risk and also does not put negative impact on firm's profitability. The basic issue in cash management is to maintain the investment in cash as low as possible while still keeping the firm operating efficiently and effectively.

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, which 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. Thus, management of cash has been regarded as one of the conditioning factors in the decision-making.

2.1.2 Significance of Cash Management

Cash Management is concerned with management of cash in such a way as to achieve the generally accepted objectives of the firm maximum profitability consistent with maximum liquidity of the firm. It is the management's ability to recognize cash problems before they arise, to solve them when they arise and having made solution available to delegate someone to carry them out.

"Cash Management is one of key areas of 'working capital management'. Apart from the fact that it is the not liquid current, cash is the common denominated to which all current assets, can be reduced because the other major liquid assets i.e. receivables and inventory get eventually converted in cash " (Khan and Jain; 2006:12.1). This underlines the significance of cash management.

Cash Management involves three major decision areas:

- ✓ Determining appropriate cash balance.
- ✓ Investing ideal cash
- ✓ Managing collections & disbursement

Emphasizing studies show that average holding of cash by firm differs significantly. A notable study conducted on Nepalese non finance sectors enterprises emphasizes that cash management is great significance of the size of investment of the form of Nepalese enterprises is not negligible. Average cash holding of Nepalese non finance sector's firm constitute 4 to 6 percent of total assets investment. With such a relatively high quantum of cash investment proves the significance role of cash management in Nepalese enterprises as well.

An effective and efficient cash management is considered to be significant for the following reasons;

- ✓ It ensures that the firm has sufficient cash during peak times for purchases and for other purpose.
- ✓ It helps to meet obligatory cash out flows when they fall due.
- ✓ It assists in planning capital expenditures projects.
- ✓ It helps to arrange for outside financing at favorable conditions, if necessary.
- ✓ It helps to allow the firm to take advantage of discounts, special purchases and business opportunities.
- ✓ It helps to invest to surplus cash for short or long term periods to keep the idle funds fully employed.

2.1.3 Objectives of Cash Management

There are mainly two objectives of cash management which are conflicting and mutually contradictory and the task of cash management is to reconcile them.

a. Meeting Payment Schedule

In the normal course of business, firms have to make payment of cash on a continuous and regular basis to suppliers of goods, employees and so on. At the same time, there is a constant inflow of cash through collations from debtors. To meet the payment schedules, a firm should maintain an adequate amount of cash balance. The advantages of maintaining adequate cash balance are:

- ✓ It helps to take trade discounts and cash discount.
- ✓ It helps the firm maintaining its credit rating by keeping its current and acid test ratio.
- ✓ It is useful for taking advantages of favorable business opportunities.
- ✓ It helps to meet such emergencies as strikes, fires or competitors marketing campaigns.

b. Minimizing Funds Committed to Cash Balance

The second objective of cash management is to minimize cash balances. In minimizing the cash balances, two conflicting aspects have to be reconciled. A high level of cash balances will, as shown above, ensure prompt payment together with all the advantages. But it also implies that large funds will remain idle, as cash is a non-earning assets and the firm will have to forego profits. A low level of cash balances, on the other hand, may mean failure to meet the payment schedule. The aim of cash management, therefore, should be to have an optimal amount of cash balance.

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 the most significant device to plan for and control cash receipt and payment. It provides much more detailed information concerning a firm' future cash flows. It is the most important tools for managing cash. It is useful in determining when cash surpluses or shortages will occur. Plans can then, be made to borrow to cover shortages or to invest surpluses.

2. Cash Planning

Cash planning can help anticipate future cash flows and needs of the firm and reduces the possibility of idle cash planning is a technique to plan for 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

firm. Cash planning may be done on daily, weekly of monthly basis. It depends upon the size of the firm and philosophy of management (Pandey; 1999:843).

3. Long-Term Cash Forecasting

Long-term cash forecasting are prepare to give idle of the company's financial requirement of distant future. Once as company has developed long term cash forecast, it can be used to evaluate the impact of say new product development on the firm financial condition three, five or more years in future. The major uses of the long-term cash forecast are company's future financial needs, especially for its working capital requirements, to evaluate proposed capital projects and it help to improve corporate planning. Long term cash forecasting not only reflects more accuracy the impact of any recent acquisitions but also foreshadows financing problems, these new additional may past for the company.

4. Short-Term Cash Forecasting

There are most two common used methods of short-term cash forecasting 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

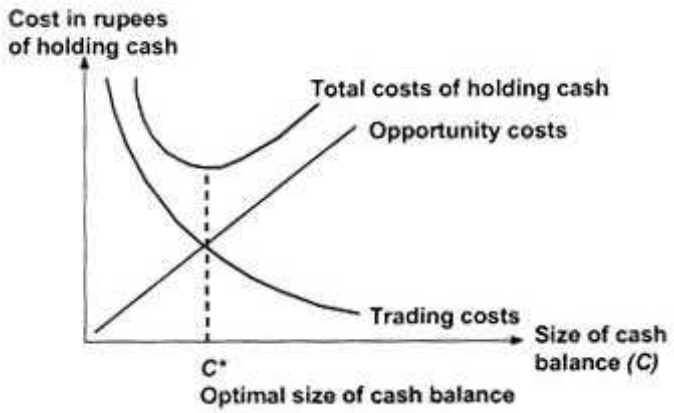
This method of cash forecasting involves the tracing of working capital flows. Sometime, it is also called the sources and uses approach. Two objectives of this method are; to project the company's need for cash at some future date and to show whether the company can generate this money internally or not, how much give will either borrow or rise in the capital market.

2.1.5 Determining the Optimum Cash Balance

Financial manager responsibilities are to maintain a sound liquidity position of the firm, so that dues may be settled in time. The firms need cash not only to purchase raw materials and pay ways but also for payment of dividend, interest, taxes and countless other purpose. The test of liquidity is really the availability of cash to meet the firm obligations when they become due. Thus, the cash balance is maintained for transaction purpose and an additional amount may be maintained as a safety stock. The financial manager should determine the appropriate amounts of cash balance, a

trade-off between risk and return influences such a decision. If the firm maintains a small cash balance, its liquidity position become weak and suffers from a capacity 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 and risk of too small a balance should be matched with the opportunity costs of too large a balance.

Figure: 2.1
Determination of Optimum Cash Balance



2.1.5.1 Optimum Cash Balance Under Certainty; Baumol's Model

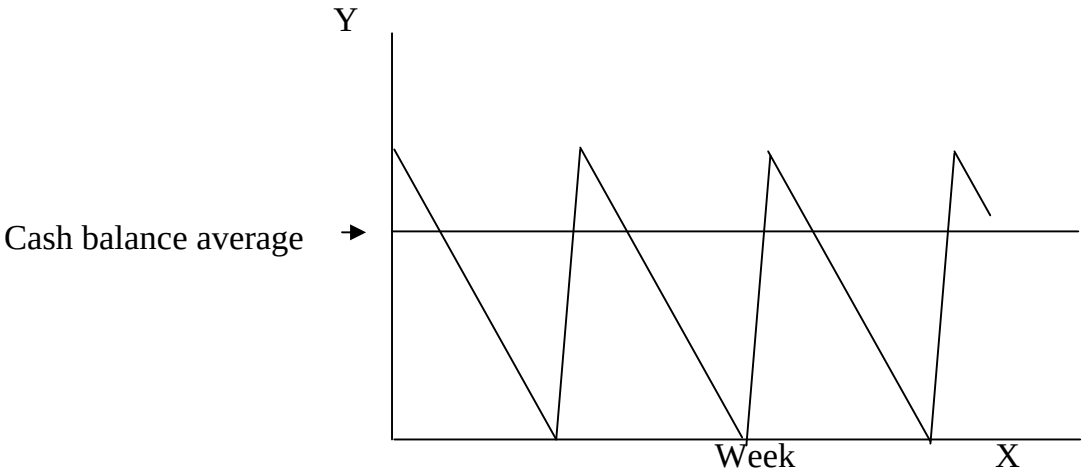
In view of minimizing the opportunity cost of holding cash and maximizing the return on the available funds, the cash balance should be maintained at a minimum level and the funds not required firm immediate use be invested in the marketable securities. Baumol model is one of the methods that can be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

- ✓ The cash is used at a constant rate,
- ✓ The periodic cash requirements is more or less and
- ✓ There are some costs such as opportunity costs that increase and other costs such as transaction costs that decrease as cash balance increase

(Baumol, extract from Khan and Jain; 1986:36)

Because of the assumption (1) and (2) the graphical representation of cash position looks like as follows:

Figure: 2.2
Cash Balance Under the Baumol Cash Management Model



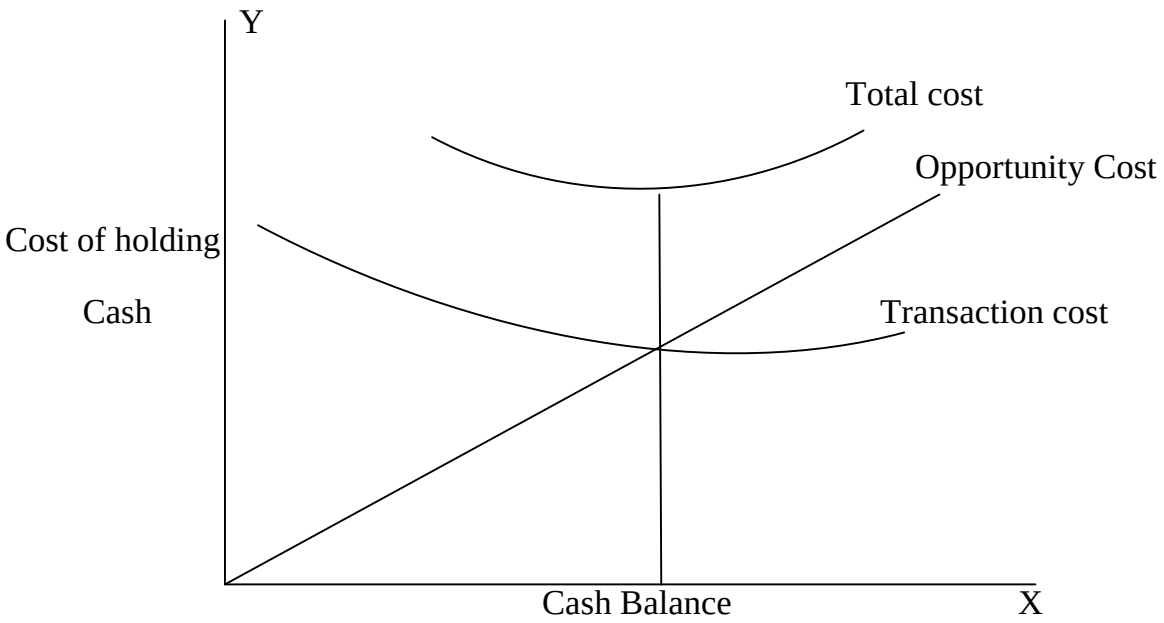
(Source: Baker and Powell; 2005:166)

Given its assumptions, 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.

Figure: 2.3

Relationship between Average Cash Balance and Cash Maintain



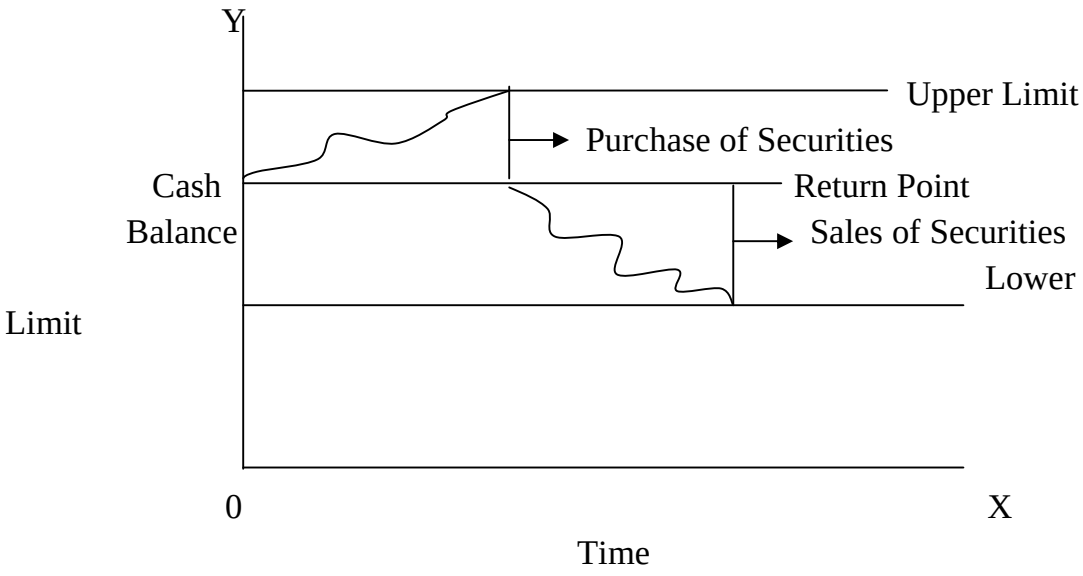
Under this method only selling of marketable securities is possible. Whenever the optimal cash balance becomes zero, the company can sell the marketable securities of economic conversion size, xx times for next month and company make conversion every xx days in month.

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 cash inflows and outflows. The Miller-Orr model cash flow variation. 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 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). (Miller M.H. & Orr; 1966:413-35)

Figure: 2.4

The Miller-Orr Cash Management Model



(Source: Miller and Orr D.LXY; 1966:413-35)

2.1.6 Motives for Holding Cash

The motives for holding cash specific advantage of adequate cash, synchronization of 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. There are three possible motives for holding cash and they are:

a. Transaction Motives

"The requirement of cash balance to meet routine cash needs is known as transaction motive and such motives refers to the holding of cash to meet anticipated obligations whose timing is not perfectly synchronized with cash receipts" (Khan and Jain; 2002:12.2).

Firms need cash to meet their transactions needs. The principle motive for holding cash is to conduct day to day operations. A cash balance associated with routine payments and collections like purchase of raw material, payment of wages, salaries, interest, dividend, taxes etc.

b. Precautionary Motives

"The cash balance held in reserve for such random & unforeseen fluctuation in cash flows are called as precautionary motives" (Khan and Jain; 2002:12.2)

There may be some uncertainty about the magnitude and timing of cash inflows from sales of goods and services, sales of assets, and issuance of securities. Likewise, there may be uncertainty about cash outflows on account of purchase and other obligation. To protect it against such uncertainties, a firm may require some cash balance.

c. Speculative Motives

"It refers to the desire of a firm to take advantage of opportunities which present themselves at unexpected moments and which are typically outside the normal course of business" (Khan and Jain; 2002:12.2)

This motives is related to the holding of cash for investing in profit making opportunities as and when they arise. Firms would like to tap profit making opportunities arising from fluctuations in commodity prices, security prices, interest rate and foreign exchange rates.

d. Compensating Balance/Compensative Motives

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

Out of the four motives for holding cash, the most important ones are the transaction motives and the compensation motives. This is because precautionary balance can be met by short-term borrowings and business firms normally do not speculate and thus doesn't require speculative balance.

2.2 Review of Related Studies

In this section, the review of thesis relating to cash has been considered. There are many thesis/dissertations written on cash when browsed through computer records of thesis reports presented earlier in Tribhuvan University Central Library as well as in Mahendra Multiple Campus, Nepalgunj. Nevertheless, there are plenty of dissertations, which were closely related to cash management. For instance, working capital management, inventory management and profit planning are the topics, which are some way related to cash management. The topics are given below,

Analytical studies of an enterprise pertaining to the financial position are essential to know their profit potentiality, operative efficiency and decision making technique. In our country as well, the financial experts and other analysis have made some research

towards financial position of different corporations by using various analytical tools. Some of the available research studies relating to the financial aspects of PEs in Nepal have been reviewed.

Shreshta (1979), the basis objectives of this study were to evaluate the financial performance of NEA, to suggest measures for the improvement of the performance of NEA and to assess the financial position of NEA. In this study shrestha found that NEA has highly fluctuating, funds were mainly collected through share capital, loans and depreciation. Funds were mainly used in expanding fixed assets and the contribution of Nepal Electricity Corporation (NEC) to national economy in the form of value added was increasing. Shrestha concluded that the net working capital position was not satisfactory. Operation ratio was unsatisfactory due to high operating expenses, the position of funds collection was in heavily fluctuant. The trend was satisfactory mainly from utilization point of views. Shrestha also pointed out that the contribution to the national economy in the form of value added was noticeable, pricing structure had noticeable impact of power generation and revenue generation on profitability was poor and no control measure was in operation at NEC.

Shrestha (1998), this study based on the object of individual and comparative cash flow analysis of water supply and sewerage corporation(WSSE) and Nepal Electricity Authority to indentify the finical weakness and strength of these public enterprises. It was revealed by the study that the liquidity position of both the enterprises was deteriorating and the liquidity of current assets was poor due to excessive inventory holdings. The liquidity position of NEA was worse that of WSSC. The capital structures of both companies were low geared and NEA enjoyed more favorable position to secure debts than WSSC. The turnover ratio of both enterprises were extremely low, the case in NEA was little better than WSSC. Most of the funds were found spent on the acquisition of fixed assets in case of both enterprises. However NEA spent more funds for this purpose on an average.

Bhatta (1997), has conducted a study on liquidity position with the following finding and recommendations.

- There is no effective utilization of assets in NEA.
- NEA has been seriously facing the problem on the collection of receivable. The accounts receivable in NEA is high. So average collection period is also high in each fiscal year.
- NEA has generated very low returns and in some years negative profitability throughout the study period.

- The capacity of assets in the generation of revenue is not satisfactory and the revenue earned is very low in comparison to investment made in the assets of NEA.
- Increasing cost in each fiscal year is an important issue of NEA. It has not adopted the cost control tools and techniques.
- NEA is not able to fulfill the requirement of funds from internal sources by successful operation of the corporation's activities. It has been taking considerable amount of loan.
- Electricity leakage, theft and wastage have been the major reasons reducing the profit earning capacity of NEA.
- High maintenance expenditures as shown in the profit and loss account have been an important factor in reducing the profitability of NEA.

Recommendations of Bhatta's are as follows;

- Improvement of the liquidity position.
- Management of operating as well as non-operating expenses.
- Development of efficient system of revenue collection.
- NEA should prepare highly qualified, dynamic and energetic personnel.
- Reduce over staffing provides training to staff to increase their productivity.
- Immediate action should be taken.
- More autonomy should be provided.
- Efficient utilization of fixed assets.
- Make investment in small projects and avoid big projects without prior feasibility analysis in finance and corporation cost benefits.
- The capacity should be fully utilized.
- The financial position of the corporation should be timely evaluated.
- Improvements in the present accounting system.

Sainju (2003), has analyzed cash management of Royal Drugs Limited and found that: the company doesn't have any definite policy for cash management, forecasting cash balance, collect receivables from sundry debtors & current liabilities payment etc.

Koirala (2006), has conducted a study on cash management with the following objectives:

- To examine the liquidity position of Nepal Telecom.
- To examine the profitability of Nepal Telecom.
- To analyze the allocation and expenditure of cash of Nepal Telecom.

The findings of the study are presented below:

- The company was able to collect more cash from different sources than it targeted in the budget. It shows good position of actual cash collection of the company.
- On the other hand, company did not spend cash as targeted. Due to these facts, there was enough surplus cash in hand every year. But company could not manage the surplus in the productive sector.
- The study shows that the company has high liquidity which adversely effects profitability of the company.
- The company has also taken external loan from foreign institution which was not required to borrow. It was able to meet its expenses of budget by its own source. There are strict provisions regarding cash control practices like procedure of running bank account, central collection policy, authority and responsibility for expenses, etc. in NTC. Strict and lengthy procedure of business activities in decision making which may cause to suffer for not getting business opportunity.

Dhungana (2008), has studied the Cash Management of Nepal Electricity Authority. The finding of the study;

- NEA's cash management is very poor. Liquidity position is dissatisfactory, Negative profitability of the company adds much to the worsening financial position of the company.
- The accumulated amount of account receivable which is increasing year by year denotes the inefficiency of the authority to collect its revenue its revenue in time.
- There is the absence of effective utilization of capital employed and liquidity position is also not satisfactory. Because of the absence of the competitors, authority has become monopolistic and, hence, it is not alert towards its possible threats and opportunities.
- Different statistical tools show the positives relationship with two variables like cash and sales, cash and account receivable, current assets and cash, current liabilities and cash.

Banarjee (2009), has the study on Cash Management of Bottlers Nepal Limited. The major finding of on study as follows:

- Cash Management in the BNL is primarily based on the practices lacking in scientific approach.
- The BNL could not make the best use of available cash balance prudently.

- Modern practices with respect to debt collection monitoring the payment behavior of customers and relevant banking arrangements in connection with collection of receivables have been virtually ignored in BNL.
- The cash turnover time is in the fluctuating trend over the study period.
- Management has taken liberal credit policy to sales of goods. Hence the cash and bank balance of the study period is minimum of account receivable.
- No optimum cash balance is maintained. The cash and bank balance with respect to current assets is in the fluctuating trend.

Kendel (2011) has analyzed in a study of cash management of Salt Trading Corporation Limited.

The Main Objectives studies on thesis:

- To study the existing cash management in SCTL.
- To critically review the cash management technique procedure by STCL
- To suggest appropriate cash management policy for future.

The findings of the study:

- Cash management in the STCL is primarily based on the traditional practice lacking in scientific approach. A more serious aspect of cash management has been the absence of any formalized system of cash planning and cash budgeting is STCL.
- The average cash turnover time in a year is found 40 times which is in fluctuating trend over the study period.
- The average inventory conversion period into cash is found a little more than two month i.e. 62 says which is very slow.
- The average payable conversion period is faster than average receivable period which is not a good single for the purpose of managing cash.
- Average cash conversion cycle taken 64 days i.e. little more than two month which is not a good single for the cash management or cash collection efficiency of corporation is very low.
- No optimum cash balance is maintained. The cash and bank balance with respect to current assets has been fluctuating. Similarly is the cash with respect to the total assets.

K.C. (2012) has study on Cash Management of Nepal Telecom.

The main objectives of thesis:

- To examine the existing internal control policy of cash transaction of Nepal Telecom.
- To analyze the cash flow structure and cash management techniques practiced by the company.
- To study the liquidity position of the company.

- To indentify the shortage or excess of cash in the company.

The findings on the basis of thesis:

- The growth line of cash and bank balance shows the increasing trend for the study period. This visualized that the corporation could make best position of cash. But Nepal Telecom does not have any particular policy to maintain optimum cash balance and the management does not take any straight policy to maintain optimum cash balance and the management does not take any straight policy to hold how much cash in the company.
- Straight line trend by least square of cash balance shows the positive figure of cash balance for future. It means the annual rate of increment of cash balance will occur.
- Analysis of correlation coefficient between cash and current liabilities shows the negative correlation between cash and current liabilities. The value of correlation is statistically insignificant.

Rai (2004) has conducted on the Profit planning in public utilities sector. This study has major findings are:

- There is no proper or systematic way to classify the cost. It consolidates all expenditure pertaining to manufacturing, administrative, selling and distribution under single roof as operation and maintenance expenditure budget.
- The operating cost is creating a drastic problem due to payment of the huge amount as interest on long term loan.
- NEA has not adequate considered controllable and non controllable variable affecting the organization.
- Break even analysis shows that the break even sales are lower than actual sales which are the signal of good operational situation.
- NEA ignores CVPA, while developing the sales plan and pricing strategy.
- There, is a lack of proper co-ordination among various directorates and departments.

Recommendations: Rai has given some recommendations to NEA:

- NEA should stress on efficient control over costs. The widely accepted controlling tools such as standard costing should be applied and separate cost centre should be established.

- Cost volume and profit analysis should be considered while formulating profit plan and the NEA should be establishing flexible budget system.
- Variable analysis should be applied in effective way to control operating Activities.

Ram Kumar Karki (2013) has analyzed on Cash Management of Nepal Telecom.
The major objective of the study is to explore how cash is managed in Nepal Telecom.
The specific objectives of the study are:

- To analyze the cash flow structure and cash management techniques practiced by the company.
- To study the liquidity position of the company.
- To identify the shortage or excess of cash in the company.
- To provide suggestions & appropriate

Major Findings from study:

- The cash holding of Nepal Telecom shows is in increasing trends except in final fiscal year.
- The absolute cash ratio of Nepal Telecom is in the increasing trends up to 2065/066 and started to decrease. The average cash balance to current liabilities ratio of the company is 127.89%. it means there remains huge portion of idle cash balance without any positive contribution towards the company.
- In an average the projection of cash and bank balance to current assets for the study period is 61.38%. although the high ratio is the sigh of sound liquidity position but here the ratio in each fiscal year is more than 50% which is too high. It indicates that the cash remain idle in the corporation, which shows that the cash position is not sound in Nepal Telecom.
- The average collection period the Nepal Telecom during the study period has shown decreasing trends. The highest collection period is 89 days in the fiscal year 2063/064 and the lowest collection period is 53 days in the fiscal year 2067/68. The average collection period of Nepal Telecom is 68 days with 20.15% of coefficient of variation which indicates the collection period is long enough in all fiscal year.
- The net profit margin ratio of the company is more than 40% in each fiscal year. The mean and C.V. of net profit margin ratio of Nepal Telecom are 44.67% and 7.61 respectively, which is quite satisfactory and consistent.
- The cash flow from operating activities of company is increasing year. The table shows only positive cash flow from operating activities, which is good

signal for the company. The company invests its huge portion of fund to purchase fixed assets and investment in each year.

- The correlation coefficient between cash and bank balance and actual sales is positive but insignificant. But there is no relationship between current liabilities, cash and bank balance in Nepal Telecom.

CHAPTER-III
RESEARCH METHODOLOGY

3.1 Introduction

This chapter looks into the research design, nature and source of data, data collection procedure and tools & technique of analysis. For the purpose of achieving the objectives of the study, the applied methodology is used. It thereby helps to highlight and recommend the useful and meaningful points so that all concerned can achieve something from this study. The research methodology used in the present study is briefly mentioned below.

3.2 Research Design

A well settled research design is necessary to fulfill the objective of the study. Descriptive as well as analytical research design has been used in this study. The relevant and needed data has been collected from various publications such as annual report of Nepal Electricity Authority, website of National Planning Commission, Ministry of Finance etc.

3.3 The Population and Sample

The research topic is about cash management practices of public enterprises, all the manufacturing enterprise, commercial enterprises, financila enterprises, public enterprises engaged in social service, service enterprises and trading enterprises are included in the population of the study and among all of them Nepal Electricity Authority is taken for research purpose. Due to unavailability of data from all sectors, only service enterprice is chosen for study. So precisely saying Nepal Electricity Authority is chosen for the study.

3.4 Sources of Data

For this study, secondary data are used. These secondary data are collected from published sources like annual report, prospectus, balance sheet. Newspaper. Journal. Internet and other sources of NEA.

3.5 Data Analysis Tools

The following financial and statistical tools will used for the analysis of the research study.

3.5.1 Financial Tools for Data Analysis

1) Ratio Analysis

Ratio analysis is one of the strongest tools to measure to financial health of an organization. This tool is used to judge various aspects of the financial condition of the organization by comparing it with standard ratio. The following ratios will be used in this research:

a) Analysis of Cash Turnover

The cash turnover ratio explains how quickly the cash is received from the sales; or in words it measures the speed with which cash move through an enterprise's operation cash turnover ratio is obtained by the following formula:

$$\text{Cash Turnover Ratio} = \frac{Sales}{\text{Cash in Hand and Bank}}$$

b) Analysis of Current Ratio of Current Assets to Current Liabilities

It is test of liquidity. It evaluates short term debt paying ability of the firm. It measures the availability of current assets for meeting current liabilities. The ideal current ratio is 2:1; however for a public enterprises, the ratio tend to be little lower than 2:1 as these enterprise general require very little current assets. But nevertheless any company should maintain this ratio above 1:1, since ratio lower than this definitely indicates poor liquidity position.

This ratio computed as follows:

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

c) Analysis of Quick Ratio or Acid Test Ratio

it measures the short term liquidity of the firm. This ratio is superior to Current ratio, for it excludes inventory (which is the least liquid current asset) from the net current assets and compares it with current liabilities. Comparing this ratio with current ratio gives a clearer idea as to if current assets have been tied-up inventory or not. Though current ratio of a firm is satisfactory on the other hand if quick ratio is not convincing, the situation suggest current assets being tied-up in unassailable inventory. The ideal Quick ratio is 1.1 Formula for computing quick ratio is given by:

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

(Quick Ratio= Current Assets - Inventory)

d) Receivables/ Debtors Turnover Ratio

Receivables turnover ratio gives an idea as to how quickly receivables are converted into sales.

The ratio can be computed as follows:

$$\text{Receivable Turnover in Time} = \frac{\text{Total Sales}}{\text{Receivable}}$$

With computation of this ratio, average collection period of receivables is also calculated. Shorter average collection period suggests that the company has a very rigid credit policy and thus sales curtail would be he consequence as the sales transaction is only target to parties marking payments promptly.

Average collection period is calculated to know the average number of days/month for which a firm has to wait before trade debtors are converted into cash. The average collection period can be calculated as follows:

$$\text{Average Collection Period} = \frac{\text{Days in a year}}{\text{Receivable Turnover in times}}$$

e) Inventory (or Stock) Turnover Ratio

Every business organization has to maintain a certain level of stock for fulfillment the requirement of the business. Inventory turnover ratio indicates whether the investment in inventory is efficiently used or not. It checks the efficiency of inventory management. The ratio is calculated as:

$$\text{Inventory Turnover Ratio or Stock Turnover Ratio} = \frac{Sales}{Inventory}$$

f) Cash and Bank Balance to Account Receivable

This ratio measures the cash and bank balance in relation with accounts receivables (or sundry debtors) of the firm. Higher ratio refers to sound liquidity position and vice versa. However, too high ratio is indicative of he fact that the business dealings are restricted to only those parties making quick payments. There by limiting its scope of sales volume.

It is computed by:

$$\text{Cash Balance to Account Receivable} = \frac{\text{Cash and Bank balance}}{\text{Account Receivable}}$$

g) Cash and Bank Balance to Current Assets

This ratio is also supportive to analysis the liquidity position of the firm. It measures the proportion of cash and bank balance, the most liquid current asset in the total current assets. Higher ratio implies sound liquidity position and vice versa. It is complies as follows:

$$\text{Cash and Bank Balance to Current Assets} = \frac{\text{Cash and Bank balance}}{\text{Current Assets}}$$

h) Cash and Bank Balance to Current Liabilities

It calculates the cash balance available with the firm in meeting payments of current liabilities. Moderately higher ratio indicates good liquidity too high and too low ratio are unfavorable for the firm since too high indicates excess cash balance held idle and too low ratio means the firm unable to meet current liabilities. It is calculated as follows:

$$\text{Cash and Bank Balance to Current Liabilities} = \frac{\text{Cash and Bank balance}}{\text{Current Liabilities}}$$

i) Net Profit Margin Ratio

This ratio establishes a relationship a relationship between net profit to net sales and shows the efficiency of management to earn net profit through sales. This ratio helps to determine the operational efficiency of the management. Higher the ratio shows the higher efficiency of the management and lower the ratio shows the lower efficiency of the management. The formula of net profit ratio is:

$$\text{Net Profit Margin Ratio} = \frac{\text{Net Profit After Tax}}{Sales}$$

j) Return on Working Capital Ratio

This is yet another ratio to examine profitability of a firm. The ratio is aimed at analyzing the proportion of current assets employed to earn the profit amount. Higher ratio is favorable and vice versa. This ratio is calculated by employing the formula below:

$$\text{Return on Working Capital Ratio} = \frac{\text{Net Profit After Tax}}{\text{Current Assets}}$$

k) Net Profit After Tax to Quick Assets Ratio

This ratio also examines profitability of a firm; analyses proportion of Quick assets (i.e. current assets - inventory) in earning the profit amount. It is calculated by using the formula below:

$$\text{Net Profit After Tax to Quick Assets} = \frac{\text{Net Profit After Tax}}{\text{Quick Assets}}$$

l) Optimum Cash & Bank Balance transaction size

Baumol's model help to finding optimum cash & bank balance transaction size through annual cash requirement & total cost of holding cash. It is calculated by using the formula below:

$$e^* = \sqrt{\frac{2FT}{K}}$$

Where,

e* = Optimum cash & bank balance transaction size
F = Fixed transaction cost per transaction
T = Annual cash & bank balance requirement
K = Interest rate or opportunity cost

In this model, the total opportunity cost equal to total transaction cost. According to this model the total opportunity cost & total transaction costs are calculated as follows:

Total Cost = Total Opportunity Cost + Total Transaction Cost

$$= \frac{e^*}{2} \mid K \quad \Gamma \quad \frac{T}{e^*} \mid F$$

m) Operating cash flow to capital employed

This ratio portrays the return which a company gets in the form of additional cash from its operating activities by deploying certain amount of capital in the business. The ratio measures the efficiency with which capital is utilized to earn cash profit and show the prudent cash management.

$$\text{Operating cash flow to capital employed} = \frac{\text{Operating cash flow}}{\text{Capital employed}}$$

n) Debt affordability ratio

The ratio indicates the capacity of the company to service its fixed interest on borrowing in terms of operating cash flow. The financial cash outflow is the amount of interest payments on the long term loans. The ratio shows how many times the interest charges are covered by operating cash flow. From the point of creditors larger the coverage greater the capacity of the company to meet its obligations out of cash generated from the operating activities.

$$\text{Debt affordability ratio} = \frac{\text{Operating cash flow}}{\text{Financing cash outflow}}$$

o) Quality income ratio

The ratio measures the degree of difference between cash base notion of income and an accrual base notion of income. The quality base notion of income is generally considered to be a more subjective measurement than that of cash base notion is better measurement of performance of business firm. It gives insight into the quality of income and also shows difference between the operating net income and net cash flows from operating activities. It is calculated by dividing net operating cash flows plus interest by net income plus depreciation expenses as follows.

$$\text{Quality income ratio} = \frac{\text{Cash flow from operating activities} + \text{Interest paid}}{\text{Net income} + \text{Interest expenses} + \text{Depreciation}}$$

p) Capital expenditures ratio

The ratio helps to assess whether the company is capable of financing capital investment from the cash flow from operating activities. Generally, the investment in long term assets will be financed by the cash generated by operating activity of the firm.

$$\text{Capital expenditures ratio} = \frac{\text{Cash flow from operating activities}}{\text{Cash flow from investing activities}}$$

q) Investing-inflow ratio

This ratio indicates that cash outflow or used in investing activities of both cash flow from investing and financing activities.

$$\text{Investing-inflow ratio} = \frac{\text{Cash flow from investing activities}}{\text{C/F from investing + C/F from financing}}$$

3.5.2 Statistical Tools for Data Analysis

a) The least square method, straight line trend

$$y_c = a + bx$$

This is one of the time series analyses. Which forecasts future events of variables over a regular interval of time based on the past trend of the variables? In this method a trend line, $y_c = a + bx$ is fitted to the given data such that

$$\sum (y - y_c) = 0 \text{ and } \sum (y - y_c)^2 \text{ is least.}$$

Where,

y = Actual values of Y

y_c = Computed values of Y

a = Constant which is the computed Y - value when

b = Constant which is the change in Y

X = 0 corresponding to the change in X by one unit.

X = Time in case of time series analysis d

The value of 'a' and 'b' can be found out by solving the following normal equation:

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

$$Y \; \text{X}a \quad X \; \Gamma b \quad X^2$$

Where,
N is the number of years of any period for which the data are given.
The normal equations are obtained by using above two conditions and some mathematical manipulations. To simplify the calculation the mid point in time is taken as origin, so that ∑X= 0. Then the above two normal equations will be reducing to:

$\sum Y = Na$

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

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

b) Karl Pearson's Coefficient of Correlation,

$$\textbf{(r)} = \frac{uv}{u^2 \quad v^2}$$

If two variables (say X and Y) were such that change in one accompanies the change in other, then these two variables are said to be correlated. Such correlations are said to be positively correlated if increase in results increase in Y and decrease in X follows decrease in Y. Likewise, such correlations are said to be negatively correlated if increase in Y results decrease in X and decrease in X follows increase in Y.

Correlation analysis refers to the statistical technique, which measures the degree of relationship of association between the variables. To put it differently, it helps in analyzing the co variation of two or more variables.

It is to be noted that a high degree of correlation between two variables doesn't always necessary imply that change in one variation cause change in the other, i.e. correlation doesn't necessarily imply causation while causation always implies correlation. Out of several methods of computing correlation, Karl Pearson's coefficient of correlation is one of the best and popular methods. Karl Pearson's Coefficient of Correlation (r) measures the degree of association between the variable supposes X and Y, given by:

$$(\text{r}) = \frac{uv}{u^2 \quad v^2}$$

Where,
r = Karl Pearson's Coefficient of Correlation between X & Y
u = X Z $\bar{X}$
v = Y Z $\bar{Y}$

And

$$\bar{\varepsilon} = \frac{X}{N}$$

$$\bar{\psi} = \frac{Y}{N}$$

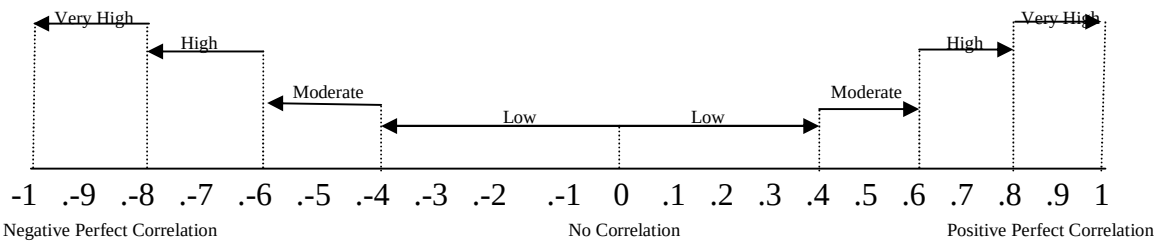
Where, N = No. of years/time period

However, in this thesis work, computing correlation coefficient, the above formula has been used only manually. For rest of the computation, Microsoft excel worksheet tool has been employed directly from the computer.

The value of r lies between +1.00 to -1.00.

Value of +1.00 refers to highly positive correlation between the variable leads to inverse in another and vice-versa. Value of -1.00 refers to highly negative correlation between the variables; i.e. one variable is indirectly proportional to another, or in other words, inverse in one variable leads to decrease in another variable and vice-versa. Likewise, value nearing to zero "0" refers to existence of no correlation between the variables, i.e. inverse or decrease in one variable result no impact on another variable and vice-versa. It shows also as follows:

Scale for the Intensity



Together with Karl Person's Coefficient of Correlation, probable error (P.E.) of the correlation coefficient is also computed. This probable error of the correlation coefficient is the basis for the interpretation of its is given by:

$$\text{P.E.} = \frac{(1 Z r^2)}{\sqrt{N}} \mid .6745$$

Where, P.E. = Probable error of correlation coefficient
N = Number of pair of observations.
R = Correlation Coefficient

- When r< P.E., the value of r is not statistically significant at all; i.e. there is no evidence of correlation.
- When r> 6(P.E.), the value of r is significant; i.e. practically the correlation is certain.
- When P.E. < 6(P.E.), the value of r is inconclusive as to statistically significant/insignificant correlation.
- By adding and subtracting the value of probable error from the coefficient of correlation we get the upper and lower limits respectively within which correlation in the population can be expected to lie. Symbolically, correlation in the population = r ± P.E.

For instance, if r is calculated as r = -0.5, then

/r/ = 0.5

This positive value of r is compared with P.E. and 6(P.E.) to derive to a conclusion of practically significant/insignificant correlation.

C) Standard Deviation (S.D.)

$$\text{S.D.} = \sqrt{\frac{x^2}{N}}$$

$$\text{Or, S.D.} = \sqrt{\frac{d^2}{N} Z \left(\frac{d}{N}\right)^2}$$

Standard Deviation (S.D.) measure scatter, spread, of variation, and provides idea of homogeneity (compactness) of heterogeneity (scatter) of the distribution. Out of various methods of studying dispersion such as Range. Inter-quartile range and Quartile Deviation, Mean Deviation, Standard Deviation and Variance, Lorenz Curve, the most popular method is the standard deviation and variance method.

S.D. (±) = $\sqrt{\frac{x^2}{N}}$

Where,

X = X Z$\overline{X}$

N = Number of years/observations/time periods.

It can be also be computed as follows:

S.D. (±) = $\sqrt{\frac{d^2}{N} \text{Z} \left(\frac{d}{N}\right)^2}$

Where,

d =X-A

And

A = Assumed Means

In this thesis work, however, while computing standard deviations, the above formula has been employed only once manually. For rest of the computations, Microsoft excels worksheet tools have been employed directly from computer.

In conjunction with standard deviation, coefficient of variation (C.V.) is also computed which is the relative measure based on standard deviation and is defined as the ratio of the standard deviation to the mean expressed in percent. Coefficient of Variation (C.V.) is given by

C.V. = $\frac{\pm}{\varepsilon}$ | 100%

The ratio $\frac{\pm}{\varepsilon}$ is called the coefficient of variation, C.V. has no units, Distribution with lower C.V. is said to be less variable (or more consistent or more uniform) and the distribution with higher C.V. is indicative of more variable (or less consistent of less uniform). The limitation of using C.V. is that when the distribution being compared has negative observation, it provides unreliable way to compare variability across data sets.

d) Regression Analysis and Regression Line

In correlation analysis, the closeness of relationship between two variables is established. In regression analysis the nature of relationship between two variables is established and the unknown variable is established on the basis of other known variable. Thus regression analysis is the statistical method for determining the nature of relationship that exists among two or more variables and then using that

relationship to make estimates or predictions. The closer the relationship between the two variables, the more accurate the estimated value is the unknown variable to be estimated is called dependent variable (or explained variable) and the known variable is called independent variable (or explanatory variable).

Noteworthy here is that correlation analysis indicates to what degree the variable are related and regression analysis indicates how the variables are related.

Regression line of x variable (X) on Y variable (Y) given by:

$$(X - \bar{X}) = r\frac{\sigma x}{\sigma y}(Y - \bar{Y})$$

Where,

X =Mean of X variable

Y = Mean of Y variable

$\sigma\varepsilon$ = Standard Deviation of X variable

$\sigma\psi$ = Standard Deviation of Y variable

r = Karl Pearson's Coefficient of Correlation

$$r\frac{\sigma x}{\sigma y} = \frac{N\sum uv - \sum u \sum v}{\sqrt{N\sum v^2 - (\sum v)^2}}$$

Likewise, the regression line of Y variable (y) on X variable (X) is given by,

$$(Y - \bar{Y}) = r\frac{\sigma y}{\sigma x}(X - \bar{X})$$

Where,

$$r\frac{\sigma y}{\sigma x} = \frac{N\sum uv - \sum u \sum v}{\sqrt{N\sum u^2 - (\sum u)^2}}$$

e) Lorenz Curve Analysis

Lorenz curve is a graphic method of studying dispersion in a distribution Dr. Lorenz introduced for the first time method of measuring dispersion. He used this method to measure in equalities in the distribution of income and wealth between different countries for different time periods. Lorenz curve is obtained by plotting the cumulative percents of variables value (e.g. wealth profits etc) on Y- axis and the cumulative percents of the corresponding frequencies on X- axis. Thus the Lorenz curve is the cumulative percentage curve.

f) Diagrams

Diagrams are the effective way if presenting and analyzing data. Diagram can be of various types such as bar diagram, trend line etc. the bar diagram will be used extensively to analyze the data. The bar diagram represent the data by bars of equal width. The length of the bar represents the given figures and width may be of any size.

CHAPTER-IV
DATA PRESENTATION AND ANALYSIS

Introduction

The basis objective of this study as stated in chapter one is to have true insight into "cash management" of Nepal Electricity Authority (NEA). This is the section where, the filtered data are presented and analyzed. In this chapter, the relevant data and information necessary for the study are presented and analyzed keeping the objectives set in mind. To make our study effective and precise as well as easily understandable, this chapter is categorized in three parts; presentation, analysis and interpretation. In presentation section data are presented in term of table, graph chart of figures, according to need. The presented dates are presented in terms of table, graph chart of figures, according to need. The presented data are then analyzed using different statistical tools mentioned in chapter three. At last the results of analysis are interpreted. Similarly it is also noted that almost all data used for analysis are of secondary type.

4.1 Analysis of the Data by "Financial Tools"

4.1.1 Analysis of Cash and Bank Balance & Optimum Cash & bank Balance

Holding of optimum cash and bank balance is the rational cash management practice of a business firm. Management of cash plays a significant role in current assets o NEA. Total cash balance refers to the cash in hand, cash at bank, and cash in transit, near cash assets such as; marketable securities and time deposit in bank.

The amount of cash and bank balance of NEA during the period under study is shown in the below Table 4.1.

Table: 4.1

Analysis of Cash and Bank Balance & Optimum Cash & Bank Balance

(Rs. In Millions)

Year	Cash and Bank(A)	Increase/(Decrease) %	Optimum Cash & Bank Balance(e*)	Differ (A-e*)
2004	1036.42	0.00	213.99	822.43
2005	1322.60	27.61	253.45	1069.15
2006	1258.60	(4.84)	266.56	992.04
2007	1447.58	15.02	125.66	1321.92
2008	1337.15	(7.63)	338.23	998.92
2009	1724.76	28.99	796.75	928.01
2010	1244.65	(27.84)	595.07	649.58
2011	2016.58	62.02	910.80	1105.78
2012	2697.48	33.77	1698.00	999.48
2013	3155.00	16.96	983.78	2171.22

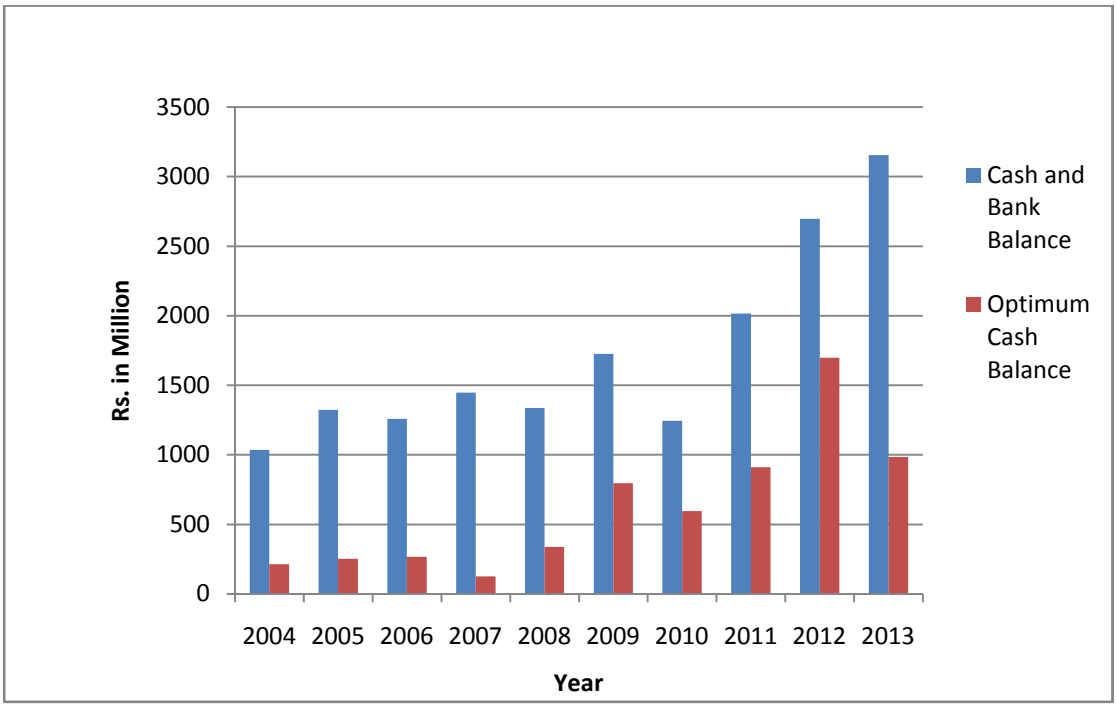
(Source: Appendix I, II & III)

In fiscal year 2004, the cash & bank Balance is Rs.1036.42 million & optimum cash balance is Rs.213.99 million which is differ from cash & bank balance is Rs.822.43 million .It means it indicate that the company turnover of cash & bank balance in optimum cash & bank balance then company goes to minimizing of the cost & succession to getting profit. In fiscal year 2005, the cash balance of the company was Rs. 1322.60 million, which is increase by 27.61% to Rs. 286.18 million & the optimum cash balance is Rs.253.45 million which is differ from cash & bank balance with Rs.1069.15 million in the following year. However, it sharply decreased by 4.84% in fiscal year 2006 & differs from optimum cash balance is Rs. 992.04 million which has optimum cash balance is Rs.266.56 million. In the fiscal year 2007 increased by 15.02 % with optimum cash balance is Rs.125.66 million, In the fiscal year 2008 and 2009 the cash balance of the company were Rs. 1337.15 million and Rs. 1724.76 million & optimum cash balance is Rs.338.23 million and Rs. 796.75 million respectively, in this fiscal year the cash & bank balances are decreased by 7.63% and again increase by 28.99 %. Similarly, 27.84 % has been decreased in the fiscal year 2010 and 62.02 % has been increased in the year 2011 & optimum cash balance is Rs. 595.07 million & Rs. 910.80 million and differ from cash & bank balance is Rs. 649 million & Rs. 1105.78 million respectively. In the fiscal year 2012 and 2013 the cash balance of the company were Rs. 2697.48 million and Rs.3155 million, which increased by 33.77% and increased by 16.96% following year. In this year optimum cash balance is Rs. 1698 million & Rs. 983.78 million and differ from cash & bank balance is Rs. 999.48 million & Rs. 2171.22 million respectively.

However, sharpest deviation in increments of cash balance occurred in fiscal year 2013 when the company held cash balance of Rs. 3155 million compared to Rs. 1036.42 million only in the previous year.

It can be presented with the help of graph to show the variation in cash balance held at the end of each fiscal year.

Figure: 4.1
Cash and Bank Balance & Optimum Cash Balance



The figure represents the fluctuating trend of cash & bank balance till 2004 to 2010 i.e. Rs. 1036.42 million to Rs. 1244.65 million. After the FY 2010, the cash and bank balance goes to upward and reaches Rs. 3155.00 million in FY 2013.

The major finding of analysis of cash and bank balance is that the company has to some extent been following a definite policy regarding the amount of cash to hold in each fiscal year end.

4.1.2 Analysis of Total Cost

The total cost of NEA represents the cost of holding cash in a year. It includes the total opportunity cost & total transaction cost. Opportunity cost is that costs which is selecting one opportunity from all opportunity. i.e. lost the other offering. It is known

is also bank interest rate. Similarly, transaction cost is cost of moving of cash & bank balance in turnover of the cash & bank balance.

The total cost of NEA indicates the cost of holding cash & bank balance. The minimum total cost is selected where total opportunity cost & total transaction cost is equal.

Table: 4.2
Analysis of Total Cost

(Rs. in Millions)

Year	Cash and Bank	Total Opportunity Cost	Total Transaction Cost	Total Cost	Optimum Cash & Bank Balance(e*)
2004	1036.42	8.56	8.56	17.12	213.99
2005	1322.60	10.14	10.14	20.28	253.45
2006	1258.60	10.66	10.66	21.32	266.56
2007	1447.58	5.03	5.03	10.05	125.66
2008	1337.15	13.53	13.53	27.06	338.23
2009	1724.76	31.87	31.87	63.74	796.75
2010	1244.65	23.80	23.80	47.61	595.07
2011	2016.58	36.43	36.43	72.86	910.80
2012	2697.48	67.92	67.92	135.84	1698.00
2013	3155.00	39.35	39.35	78.70	983.78

(Sources: Appendix VI)

From above table in fiscal year 2004, total opportunity cost & total transaction cost is equal where cost of holding cash & bank balance is minimum. i.e. Rs.17.12 million & optimum cash balance is Rs.213.99 million. Similarly, in fiscal year 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 & 2013 the total cost of holding cash & bank balance and optimum cash balances are Rs. 20.28 million & Rs. 253.45 million, Rs. 21.32 million & Rs. 266.56 million, Rs. 10.05 million & Rs. 125.66 million, Rs. 27.06 million & Rs. 338.23 million, Rs. 63.74 million & Rs. 796.75 million, Rs. 47.61 million & Rs. 595.07 million, Rs. 72.86 million & Rs. 910.80 million, Rs. 135.84 million & Rs. 1698.00 million and Rs. 78.70 million & Rs. 983.78 million respectively.

From the above table we can conclude that the total lowest cost of holding cash & bank balance is Rs. 10.05 million in fiscal year 2007 where cash & bank balance and optimum cash balance are Rs. 1447.58 million & Rs. 125.66 million and the highest cost of holding cash & bank balance is Rs. 135.84 million in fiscal year 2012 where

cash & bank balance and optimum cash balance are Rs. 2697.48 million & Rs. 1698.00 million.

4.1.3 Analysis of Cash Turnover Ratio

The cash balance of the company should be optimum to meet its current obligations in course of daily business transaction. The cash turnover ratio represents how quickly the cash is received from its sale be formulated to find out. Higher turnover is the signal of good liquidity and vice-verse. However, too high ratio indicates excess cash balance being held idle.

Table: 4.3
Analysis of Cash Turnover Ratio

(Rs. in Millions)

Year	Sales	Cash and Bank	Ratio (Time)	Cash Conversion Days
2004	11874.70	1036.42	11.46	32
2005	12605.20	1322.60	9.53	38
2006	13331.90	1258.60	10.59	34
2007	14449.73	1447.58	9.98	37
2008	15041.39	1337.15	11.25	32
2009	14405.93	1724.76	8.35	44
2010	17164.60	1244.65	13.79	26
2011	17946.82	2016.58	8.90	41
2012	20088.64	2697.48	7.45	49
2013	24599.47	3155.00	7.80	47

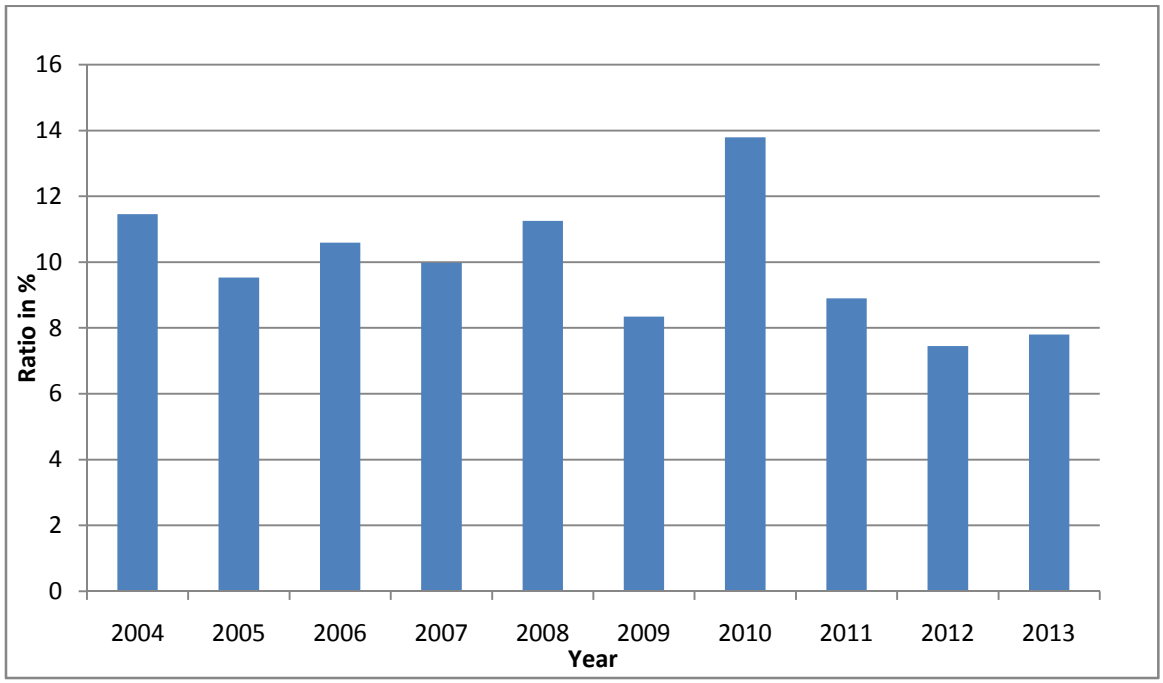
(Source: Appendix I & II)

From the above table medium fluctuations have been observed in cash turnover analysis. Above table shows that the highest ratio of 13.79 times has been observed in FY 2010. Likewise, the lowest ratio of 7.45 has been observed in FY 2012. It means the higher ratio, the more efficient is the management on utilization of cash & bank balance. A low ratio is indicate implies of poor utilization existing liquidity capacity. Likewise the minimum cash conversion days is 26, which shows that the NEA is conversing cash within a short period. However due to the unavailability of information regarding credit policy of the company the credit days allowed its debtors was not known. So, no peruse analysis could be carried out for cash turnover cycle.

It can be presented with the help of graph to show the cash turnover ratio in relation with sales and cash balance.

Figure: 4.2

Cash Turnover Ratio



From the above figure we can conclude that the lowest cash turnover ratio is in 2012 and the highest cash turnover ratio is in last year i.e. 2010.

4.1.4 Analysis of Current Ratio

One of the reliable methods to examine liquidity position of an enterprise is by means of current ratio. The standard ration that the company should maintain is 2:1. However, depending upon the nature of the company, the development of capital market and availability of long-term funds to finance current assets; the satisfactory ratio varies. So, satisfactory ratio for NEA, a public enterprise is therefore between 2:1 and higher than 1.5:1. But in general, ratio less than 1:1 is certainly undesirable for any enterprise.

Table: 4.4

Analysis of Current Ratio

(Rs. in Millions)

Year	Current Assets	Current Liabilities	Ratio (Time)
2004	7883.41	14559.82	0.54
2005	8740.90	17466.39	0.50
2006	9322.70	19854.19	0.47
2007	10322.97	23067.30	0.45
2008	11178.08	27759.55	0.40
2009	11233.03	32983.00	0.34
2010	14359.98	39766.25	0.36
2011	14367.52	36082.68	0.40
2012	16647.13	44198.56	0.38
2013	19749.73	47436.05	0.42

(Source: Appendix I)

The above table shows that the current ratio varies from 0.54:1 in the FY 2004 to 0.34:1 in the FY 2009 indicating low fluctuations. Observing the figure, the ratio in FY 2004 is near 1:1 which is moderate satisfactory and in 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 and 2013 all of the ratios are below 1:1 which indicates that the NEA does not have a sound or satisfactory liquidity position. The most favorable current ratio was observed in FY 2004 when the ratio is 0.54:1.

The finding of analysis of current ratio is that company has not been able to maintain satisfactory current ratio in most of the FYs.

4.1.5 Analysis of Quick Ratio

The ratio conveys the most precise information on liquidity position of a firm, since; it excludes the inventory, the least liquid assets from the current assets and compares it with current liabilities. Inventory when excluded from current assets is called quick assets. Current assets are composed of cash and bank balance, short- time marketable securities, receivable and inventory. However, inventory is not capable of readily converting into cash and therefore it is the less liquid compared to other composition of the current assets. Thus this quick ratio is more reliable measure of liquidity than current ratio. Quick ratio is so called because it measures the capacity of a firm to convert its current assets quickly into cash in order to meet its current liabilities.

Table: 4.5

Analysis of Current Ratio

(Rs. in Millions)

Year	Quick Assets	Current Liabilities	Ratio (Time)
2004	6835.40	14559.82	0.47
2005	7368.20	17466.39	0.42
2006	7967.90	19854.19	0.40
2007	8824.52	23067.30	0.38
2008	9377.95	27759.55	0.34
2009	9073.91	32983.00	0.28
2010	11927.99	39766.25	0.30
2011	11864.59	36082.68	0.33
2012	13613.30	44198.56	0.31
2013	16687.82	47436.05	0.35

(Source: Appendix I)

The standard quick ratio to be maintained by the company is 1:1. From the above table, in FY 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 & 2013 the ratios are 0.47:1, 0.42:1, 0.40:1, 0.38:1, 0.34:1, 0.28:1, 0.30:1, 0.33:1, 0.31:1 & 0.35:1 respectively which are below the standard ratio and unsatisfactory for the company. So, it is clear that NEA does not have sound or satisfactory liquidity position.

4.1.6 Analysis of Receivables Turnover Ratio

This ratio shows how quickly receivables are converted into cash. The ratio shows how well the debtors have been handled by the company. In connection with this ratio, average collection period is also calculated. Higher ratio and shorter average collection period indicates better trade credit management and better liquidity of debtors, and consequently better liquidity of the enterprise. Likewise, lower ratio and longer average collection period signals delayed payments by the debtor.

Table: 4.6

Analysis of Receivables Turnover Ratio

(Rs. in Millions)

Year	Sales	Receivable	Ratio (Time)	Average Collection Days
2004	11874.70	3735.71	3.18	115

2005	12605.20	3947.00	3.19	114
2006	13331.90	4415.40	3.02	121
2007	14449.73	5151.41	2.81	130
2008	15041.39	5721.08	2.63	139
2009	14405.93	4854.02	2.97	123
2010	17164.60	6097.74	2.81	130
2011	17946.82	6871.19	2.61	140
2012	20088.64	6693.17	3.00	122
2013	24599.47	7949.77	3.09	118

(Source: Appendix I & II)

From the above table shows that the ratios are having low fluctuating and vary from the lowest of 2.61 times to the highest of 3.19 times and average collection days vary far from 114 days to 140 days and overall, the average ratio is 2.93 times and the average collection period is 118 days. Here the lowest ratio is 2.27 times but the average collection days are 125 days. It shows that the credit management of NEA is not satisfactory. But it's depend upon with the nature of debtors.

However, it should be noted that too short average collection days doesn't necessarily imply that the firm is functioning well, for it indicates a very restrictive credit and collection policy thereby restricting its sales only to those debtors whose financial conditions are sound and who make their payments readily. Such restrictive policy would definitely avoid bad debts but the sales volume is likely to be curtailed by large proportion. Consequently, the overall profitability of the firm goes down.

4.1.7 Analysis of Inventory Turnover Ratio

This ratio is yet another way of analyzing the liquidity of an enterprise. This ratio shows how effectively a firm is managing its assets and whether or not the level of those assets is properly related to the level of operations as measured by sales. High inventory turnover ratio signals better inventory management and vice- verse. However, very high inventory turnover ratio is indicative of under-investment or very low level of inventory; and as such implies that the firm has not been meeting customer demand. So, a firm should go for an optimum inventory turnover ratio, which signifies sound inventory management.

Table: 4.7

Analysis of Inventory Turnover Ratio

(Rs. in Millions)

Year	Sales	Inventory	Ratio (Time)
2004	11874.70	1048.01	11.33
2005	12605.20	1372.70	9.18
2006	13331.90	1354.80	9.84
2007	14449.73	1498.45	9.64
2008	15041.39	1800.13	8.36
2009	14405.93	2159.12	6.67
2010	17164.60	2431.99	7.06
2011	17946.82	2502.93	7.17
2012	20088.64	3033.83	6.62
2013	24599.47	3061.91	8.03

(Source: Appendix I & II)

The ratio 11.33 times for the fiscal year 2004 is highest of all ratios, has definitely suggested that during the period, either the company should have undergone under-investment or the inventory held was comparatively lower. The inventory ratio is 9.18 times in FY 2005; in FY 2006 the ratio is 9.84 times which increase. In FY 2007 and 2008 the ratio are 9.64 times and 8.36 times which are decreased but in FY 2009 it decreases by 6.67 times. In FY 2010 increase to 7.06 times and in FY 2011 it increased by 7.17 times and in the FY 2012 it decreased to 6.62 times. Similarly, ratios are increase by 8.03 times in FY 2013 which is more less ratios comparing to the previous year.

4.1.8 Analysis of Cash and Bank Balance to Account Receivable

This ratio measures the relationship between the cash balance on hand to account receivable. The higher ratio indicates better liquidity position and vice-versa. However, too high ratio indicates excessive cash balance are held idle and that the transactions are limited only to parties making prompt payments.

Table: 4.8

Analysis of Cash and Bank Balance to Account Receivable

(Rs. In Millions)

Year	Cash and Bank	Account Receivable(AR)	Percentage of AR %
2004	1036.42	3735.71	27.74
2005	1322.60	3947.00	33.51
2006	1258.60	4415.40	28.50
2007	1447.58	5151.41	28.10
2008	1337.15	5721.08	23.37
2009	1724.76	4854.02	35.53
2010	1244.65	6097.74	20.41
2011	2016.58	6871.19	29.35
2012	2697.48	6693.17	40.30
2013	3155.00	7949.77	39.69

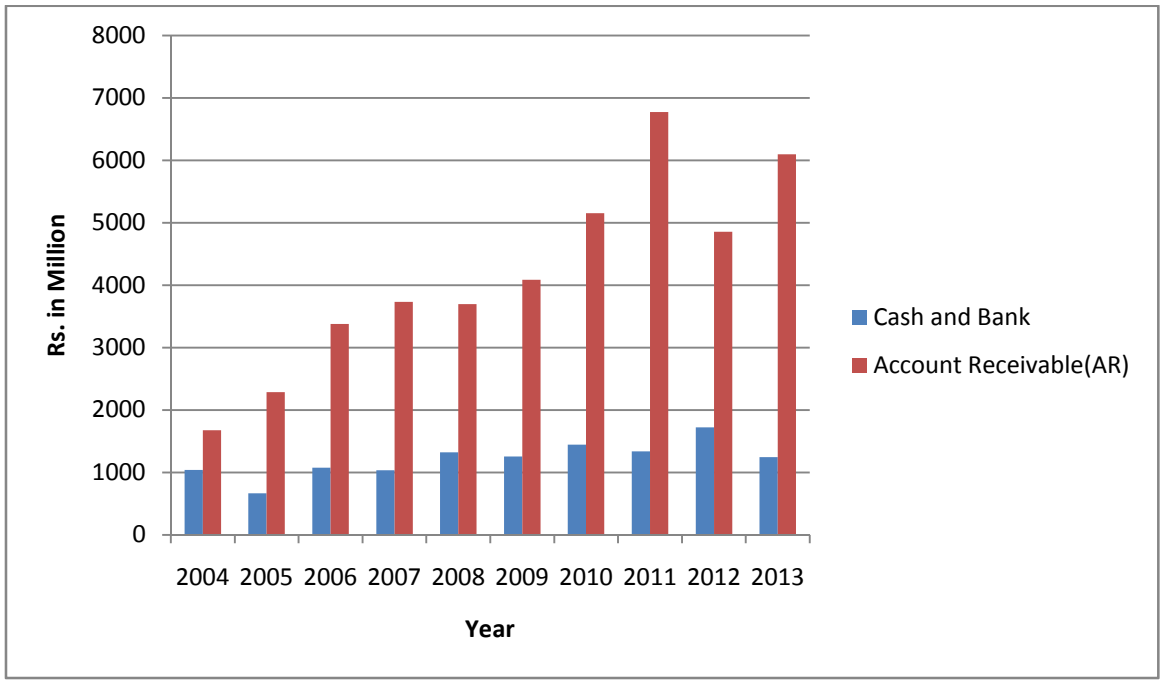
(Source: Appendix I)

Above table shows the ratio or percentage of account receivable fluctuates from 20.41% to 40.30%. The percentage of account receivable is highest in FY 2012 (40.30%). This shows that the liquidity position is good in FY 2012. But the % of A/c receivable in 2010 is 20.41 which is lowest percent, this shows the liquidity position is not good for FY 2010 in comparison to other FYs.

It can be presented with the help of graph to show the relationship between cash and bank balance receivable.

Figure: 4.3

Cash and Bank Balance to Account Receivable



4.1.9 Analysis of Cash and Bank Balance to Current Assets

The ratio of cash and bank to current assets indicate the proportion of cash balance in the current assets. Stable pattern of ratio for different fiscal year indicate that the company has been following a systematic policy regarding how much cash balances to hold at the fiscal year end.

Table: 4.9
Analysis of Cash and Bank Balance to Current Assets

(Rs. In Millions)

Year	Cash and Bank	Current Assets(CA)	Ratio of Cash & Bank to Current Assets	Difference Ratio
2004	1036.42	7883.41	13.15	0.00
2005	1322.60	8740.90	15.13	1.98
2006	1258.60	9322.70	13.50	(1.63)
2007	1447.58	10322.97	14.02	0.52
2008	1337.15	11178.08	11.96	(2.06)

2009	1724.76	11233.03	15.35	3.39
2010	1244.65	14359.98	8.67	(6.69)
2011	2016.58	14367.52	14.04	5.37
2012	2697.48	16647.13	16.20	2.17
2013	3155.00	19749.73	15.97	(0.23)
Average	**1724.08**	**12380.55**	**13.80**	**0.28**

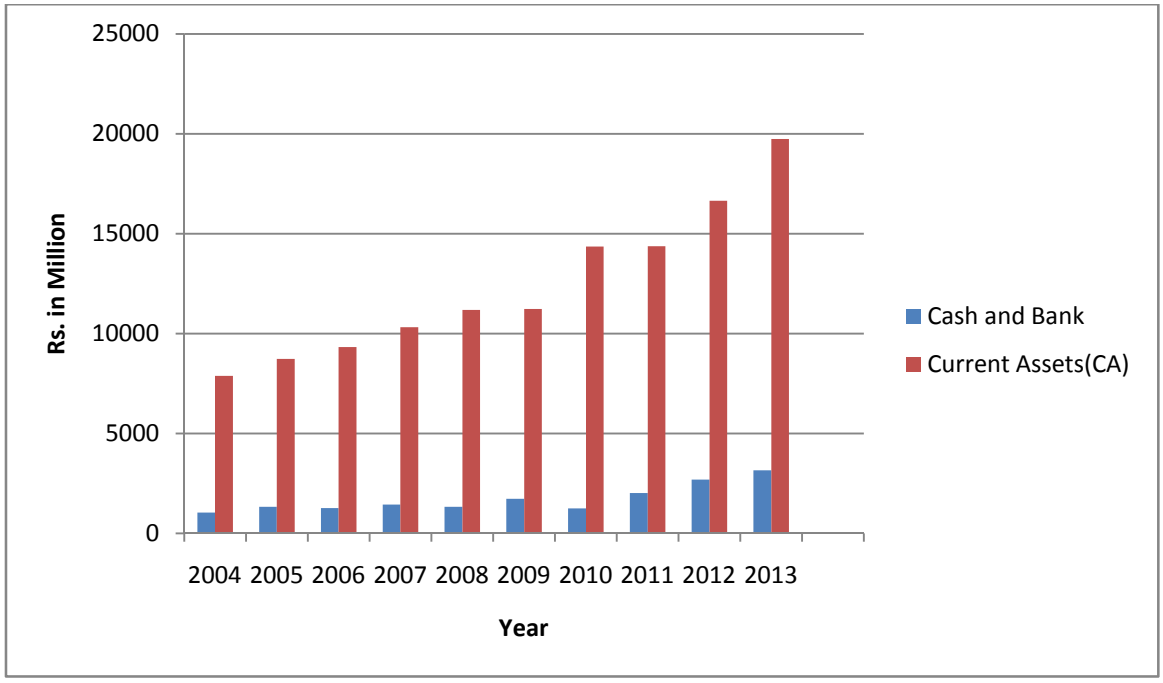
(Source: Appendix I)

Above table indicate that the cash and bank balance with respect to CA has fluctuating trend. During the study period the % of cash and bank balance to CA range from the lowest of 8.67% to the highest of 16.20% in the FY 2010 and 2012. In FY 2004, ratio is 13.15% but in FY 2005 increase in to 15.13%. In FY 2006 and 2007 decrease in to 13.50% and 14.02% respectively. Similarly, the ratios are decreasing the following years. The ratio of 2008 is 11.96% which is near to lowest ratio of 2010. On a average the projection of cash and bank balance to CA for the study period is 13.80%.

It can be presented with the help of graph to show the relationship between cash and bank balance and CA.

Figure: 4.4

Cash and Bank Balance to Current Assets



4.1.10 Analysis of Cash and Bank Balance to Current Liabilities

Among the technique of measuring corporate liquidity, the ratio of cash and bank balance to current liabilities may also be used as index of cash management. This ratio indicates the amount of cash (in percentage) available to pay the current obligation of the firm. A moderate ratio is considered satisfactory, too high ratio indicates excess cash balance held idle and too low ratio is indicative of company being unable to meet its payment of current liabilities in time.

Table: 4.10
Analysis of Cash and Bank Balance to Current Liabilities

(Rs. In Millions)

Year	Cash and Bank	Current Liabilities(CL)	Ratio (%)
2004	1036.42	14559.82	54.14
2005	1322.60	17466.39	50.04
2006	1258.60	19854.19	46.96
2007	1447.58	23067.30	44.75
2008	1337.15	27759.55	40.27
2009	1724.76	32983.00	34.06
2010	1244.65	39766.25	36.11
2011	2016.58	36082.68	39.82
2012	2697.48	44198.56	37.66
2013	3155.00	47436.05	41.63
Average	**1724.08**	**30317.38**	**42.54**

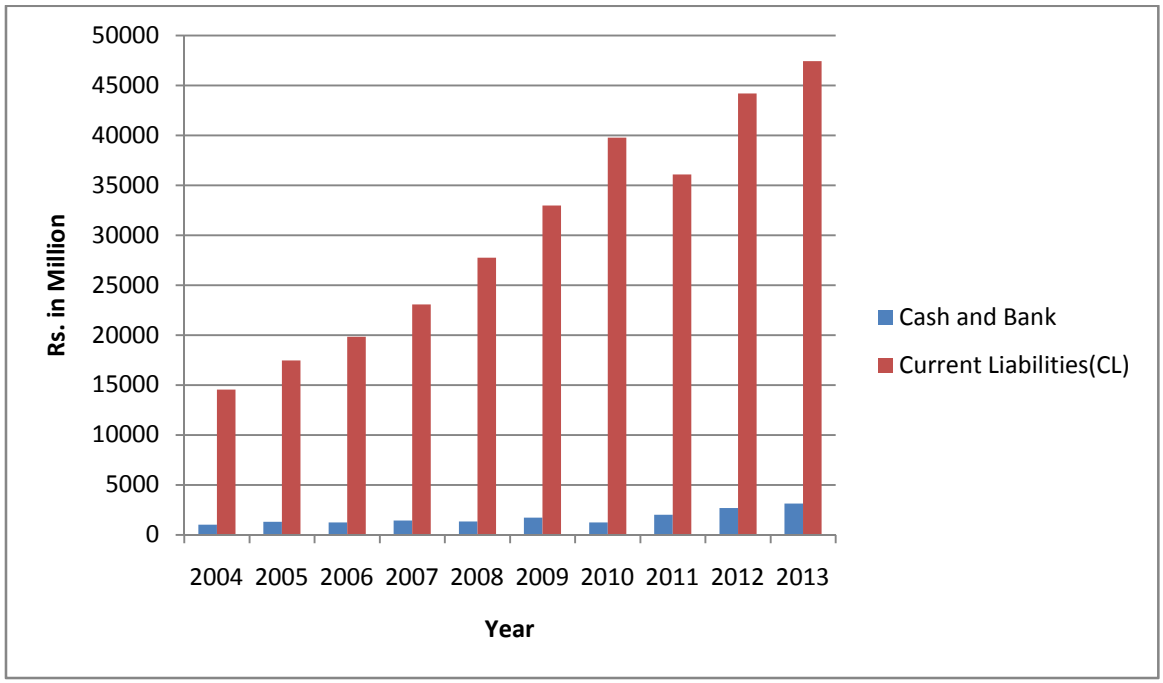
(Source: Appendix I)

Above table shows that the ratios fluctuate from the lowest of 34.06 % to the highest of 54.14 % in FY 2009 and 2004. The ratio in FY 2004 is 54.14% and the rest are in decreasing trend i.e. 50.04%, 46.96%, 44.75%, 40.27%, 34.06%, 36.11%, 39.82%, 37.66% and 41.63% in 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 & 2013 respectively. The above table has clearly indicated that the company hasn't been following a systematic cash management practice. It shows that the company has been unable to meet its payment of current liabilities in time. The average ratio has been found calculated 42.54%. It can also be presented with the help of graph to show the relationship between cash and bank balance and CL.

It can also be presented with the help of graph to show the relationship between cash and bank balance and current liabilities.

Figure: 4.5

Cash and Bank Balance to Current Liabilities



4.1.11 Analysis of Net Profit Margin Ratio

Net Profit Margin ratio measures the relationship between net profits and sales of a firm. A high profit margin indicates adequate return to the firm and thus enables in with standing in adverse economic situations when sales price is declining, cost of production is rising and demand for the product is falling.

Table: 4.11

Analysis of Net Profit Margin Ratio

(Rs. in Millions)

Year	Net Profit After Tax/(Loss)	Sales	Ratio (Time)
2004	(1415.40)	11874.70	(11.92)
2005	(1092.91)	12605.20	(8.67)
2006	(1565.00)	13331.90	(11.74)
2007	193.26	14449.73	1.34
2008	(2467.53)	15041.39	(16.40)

2009	(4930.04)	14405.93	(34.22)
2010	(6961.82)	17164.60	(40.56)
2011	(6089.22)	17946.82	(33.93)
2012	(9947.88)	20088.64	(49.52)
2013	(4515.48)	24599.47	(18.36)

(Source: Appendix I)

Above table shows that the company has been operating under loss in all of the FYs except in FY 2007. The net profit margin ratio observed in FY 2004 to 2013 is -11.92 times, -8.67 times, -11.74 times, 1.34 times, -16.40 times, -34.22 times, 40.56 times, -33.93 times, -49.52 times and -18.36 times respectively. Overall the company has been operating under loss. The average net profitability margin has been calculated (22.40 times). The sales amount are in increasing trend but the company bearing loss in all FY which is not meet to theory.

4.1.12 Analysis of Return on Working Capital

This is yet another ratio to examine profitability of a firm. The ratio is aimed at analyzing the proportion f current assets employed to earn the profit amount. Higher ratio is favorable and vice-versa.

Table: 4.12

Analysis of Return on Working Capital

(Rs. in Millions)

Year	Net Profit After Tax/(Loss)	Current Assets(CA)	Ratio (Time)
2004	(1415.40)	7883.41	(0.18)
2005	(1092.91)	8740.90	(0.13)
2006	(1565.00)	9322.70	(0.17)
2007	193.26	10322.97	0.02
2008	(2467.53)	11178.08	(0.22)
2009	(4930.04)	11233.03	(0.44)
2010	(6961.82)	14359.98	(0.48)
2011	(6089.22)	14367.52	(0.42)
2012	(9947.88)	16647.13	(0.60)
2013	(4515.48)	19749.73	(0.23)

(Source: Appendix I & II)

Above table shows that the company has not been utilizing its CA effectively in earning profit. Besides the overall ratio is also dissatisfying indicating loss in 2002 to 2012. Overall, the return on working capital is disappointing indicating down fall of the company. The average return of working capital has calculated as (0.28 times).

4.1.13 Analysis of Net Profit after Tax to Quick Assets

This ratio also examines profitability of a firm; analyses proportion of quick assets in earning the profit amount. Higher ratio indicated higher utilization of quick assets in earning profit and vice-versa.

Table: 4.13

Analysis of Net Profit after Tax to Quick Assets

(Rs. in Millions)

Year	Net Profit After Tax/(Loss)	Quick Assets(QA)	Ratio (Time)
2004	(1415.40)	6835.40	(20.71)
2005	(1092.91)	7368.20	(14.83)
2006	(1565.00)	7967.90	(19.64)
2007	193.26	8824.52	2.19
2008	(2467.53)	9377.95	(26.31)
2009	(4930.04)	9073.91	(54.33)
2010	(6961.82)	11927.99	(58.37)
2011	(6089.22)	11864.59	(51.32)
2012	(9947.88)	13613.30	(73.07)
2013	(4515.48)	16687.82	(27.06)

(Source: Appendix I & II)

Above table shows that the ratio has been found dissatisfactory. The figures clearly indicate that utilized quick assets have not been earning profit in average rather incurring average loss of 3879.20 million.

All FYs ratio is of negative value except in 2008 ranging from the lowest of 14.83 times to the highest of 73.07 times.

4.2 Analysis of the Data by "Statistical Tools"

4.2.1 Analysis of Dispersion in Cash and Bank Balance

In the below table 4.13 the dispersion in the cash balances at the year ends under study is shown. 'Standard deviation' is the measures of dispersion used for the analysis.

Table: 4.14
Analysis of Dispersion in Cash and Bank Balance

(Rs. In Millions)

Year	Cash and Bank(X)	(X- $\bar{X}$)	$(X-\bar{X})^2$
2004	1036.42	(687.66)	472876.28
2005	1322.60	(401.48)	161186.19
2006	1258.60	(465.48)	216671.63
2007	1447.58	(276.50)	76452.25
2008	1337.15	(386.93)	149714.82
2009	1724.76	0.68	0.46
2010	1244.65	(479.43)	229853.12
2011	2016.58	292.50	85556.25
2012	2697.48	973.40	947507.56
2013	3155.00	1430.92	2047532.05
Total	**17240.82**		**4387350.62**
N=10	**1724.08**		

(Source: Appendix I)

Mean ($\bar{X}$) = $\frac{X}{N}$ = $\frac{17240.82}{10}$ = 1724.08 million

Standard Deviation (S.D.) = $\sqrt{\frac{1}{N} \sum (X - \bar{X})^2}$

= $\sqrt{\frac{4387350.62}{10}}$

= Rs. 662.37 million

Interpretation

Computed standard deviation has been found Rs. 662.37 million, which indicates high degree of uniformity in holding cash balance in the fiscal year end.

Calculation of coefficient of variation (C.V.) further shows that the uniformity of cash balance held is high.

Coefficient of variation (C.V.) = $\frac{\pm}{\varepsilon}$

$$\frac{662.37}{1724.08} \mid 100$$

$$= 38.42\%$$

Interpretation

Lower C.V. indicates higher consistency or highly stable cash balance where as higher C.V. indicated just the opposite. C.V. of 38.42% definitely signifies that holding cash balance is highly consistence and stable.

4.2.2 Fitting the straight line trend by least square method for variations in Cash and Bank Balance

This is one of the time series analyses, where future events of a variable (s) are forecasted over a regular interval of time based on the past events of the variables (s). Here, an effort has been made to forecast cash balance of NEA in future fiscal years, based on its past trend.

Table: 4.15
Fitting the Straight Line Trend by Least Square Method for Variations in Cash Balance

(Rs. In Millions)

Year	Cash and Bank(Y)	Deviation from (2009) (X)	XY	ε^2
2004	1036.42	-5	(5182.10)	25
2005	1322.60	-4	(5290.40)	16
2006	1258.60	-3	(3775.80)	9
2007	1447.58	-2	(2895.16)	4
2008	1337.15	-1	(1337.15)	1
2009	1724.76	0	0.00	0
2010	1244.65	1	1244.65	1
2011	2016.58	2	4033.16	4

2012	2697.48	3	8092.44	9
2013	3155.00	4	12620.00	16
Total	**17240.82**	**-5**	**7509.64**	**85**
N=10				

(Source: Appendix I)

The equation of straight line trend is given by Yc = a + bx

Here, a= $\frac{Y}{N} = \frac{17240.82}{10}$ = 1724.08 million

b = $\frac{\varepsilon \psi}{\varepsilon^2} = \frac{7509.64}{85}$ = 88.35 million

ψ_C = a + bx

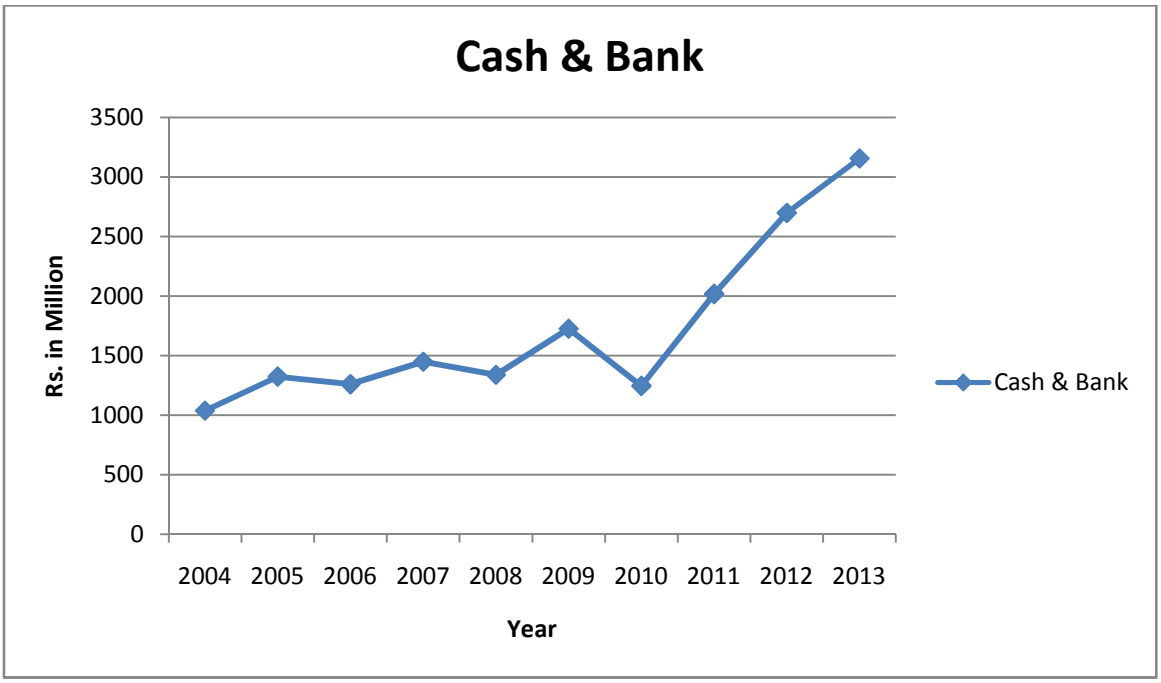
= 1724.08 +88.35X

Interpretation

The trend line shows negative figure of cash balance in future. The annual rate of cash balance has been calculated Rs. 88.35x10,00,000 =Rs. 8,83,50,000.

Figure: 4.6

Trend Line for the Variation in Cash Balance



4.2.3 Analysis of Karl Pearson's Coefficient of Correlation (r) between Sales and Cash Balance

To find correlation between sales and cash balance, Karl Pearson's coefficient of correlation (r) is determined. For this purpose sales (x) are assumed to be dependence variables and cash balance (Y) are assumed to be independent variables. At first it is assumed that actual sales will increase as cash balance will increase and vice-versa. It means there should be positive correlation between cash balance and sales. The significance of correlation 'r' is rested with probable error (P.E.).

Table: 4.16

Analysis of Karl Pearson's Coefficient of Correlation (r) between Sales and Cash Balance

(Rs. In Millions)

Year	Sales (X)	Cash and Bank(Y)	(X- $\bar{X}$)	(Y- $\bar{Y}$)	«¬	« ^{2}	¬ ^{2}
2004	11874.70	1036.42	(4276.14)	(687.66)	2940530.43	18285373.30	472876.28
2005	12605.20	1322.60	(3545.64)	(401.48)	1423503.55	12571563.01	161186.19
2006	13331.90	1258.60	(2818.94)	(465.48)	1312160.19	7946422.72	216671.63
2007	14449.73	1447.58	(1701.11)	(276.50)	470356.92	2893775.23	76452.25
2008	15041.39	1337.15	(1109.45)	(386.93)	429279.49	1230879.30	149714.82
2009	14405.93	1724.76	(1744.91)	0.68	(1186.54)	3044710.91	0.46
2010	17164.60	1244.65	1013.76	(479.43)	(486026.96)	1027709.34	229853.12
2011	17946.82	2016.58	1795.98	292.50	525324.15	3225544.16	85556.25
2012	20088.64	2697.48	3937.80	973.40	3833054.52	15506268.84	947507.56
2013	24599.47	3155.00	8448.63	1430.92	12089313.64	71379348.88	2047532.05
Total	**161508.38**	**17240.82**			**22536309.39**	**137111595.69**	**4387350.62**

$$\text{Mean } (\bar{X}) = \frac{X}{N} = \frac{161508.38}{10}$$

= 16150.85 million

$$\text{Mean } (\bar{Y}) = \frac{Y}{N} = \frac{17240.82}{10}$$

= 1724.08 million

$$\text{Karl Pearson's Correlation (r)} = \frac{«¬}{\sqrt{« ^2 \quad ¬ ^2}}$$

$$= \frac{22536309.3}{\sqrt{(137111595.69)(4387350.62)}}$$

= 0.92

This shows that there exists positive correlation between sales volume and cash balance. The correlation should be statistically significant to ascertain that there practically exists correlation between the two variables. For this purpose, probable error has been calculated as follows:

$$\text{Probable Error (P.E.)} = \frac{0.6745(1 - r^2)}{\sqrt{N}}$$

$$= \frac{0.6745(1 - 0.92^2)}{\sqrt{10}}$$

$$= 0.03$$

6 x (P.E.) = 6 x 0.03 = 0.18

Now, if r> 6 (P.E.), it is indicative of statistically significant positive correlation. Likewise, if r< (P.E.), it is indicative of statistically insignificant positive correlation.

But in this case, r > 6 (P.E.). i.e. 0.92 > 0.18 . This implies, though there exists positive correlation between the two variables, It be derived as to statistically significant positive correlation. This shows that the company has been practically following the general rule of higher sales volume, higher cash balance and vice-versa.

The upper and lower limits within which the correlation coefficient is expected to lie are given by;

r+ P.E. = 0.92 + 0.03= 0.95 (upper limit)

r- P.E. = 0.92 - 0.03= 0.89 (lower limit)

So, the coefficient of correlation is expected to lie between 0.95 and 0.89 of sales and cash balance.

4.2.4 Regression Analysis on Sales & Cash balance

A regression line can also be fitted to show the degree of relationship value of sales. For this purpose, cash balance and sales have been assumed interrelated economic variables.

The regression line of sales (X) on cash balance (Y) is given by,

$$(X - \bar{\varepsilon}) = r.\frac{\pm X}{\pm Y}(Y - \bar{Y})$$

Where,
$\bar{\varepsilon}$ = Mean sales = 161508.38
$\bar{\psi}$ = Mean cash balance = 1724.08
± x = Standard deviation of sales
± y = Standard deviation of cash

r = Karl Pearson's coefficient of correlation = 0.92

…X = 7289.08 + 5.14Y

This equation shows that sales are estimated to increase by 5.14 per unit increase in cash balance.
Likewise, the regression line of cash balance(Y) on sales (X) can be computed as follows.

$$(Y-\bar{\psi}) = r.\frac{\pm Y}{\pm X}(X\ Z\ \bar{X})$$

…Y = -860.06 +0.16X

This shows that cash balance is estimated to increase by 0.16 units per increase in sales.

4.2.5 Analysis of Karl Pearson's Coefficient of Correlation (r) between Account Receivables and Cash Balance

To find out the correlation between account receivables and cash balance, Karl Person's coefficient of correlation (r) is determined. For this purpose account receivables and cash balance are assumed to be interrelated economic variables. Let us assume receivables as 'X' are dependent variables and cash balance 'Y' are independent variables.

Table: 4.17

Analysis of Karl Pearson's Coefficient of Correlation (r) between

Account Receivable and Cash Balance

(Rs. In Millions)

Year	Receivables (X)	Cash Balance(Y)	$(X-\bar{\varepsilon})$ ƒ«Å	$(Y-\bar{\psi})$ ƒ¬Å	«¬	$«^2$	$¬^2$
2004	3735.71	1036.42	(1807.94)	(687.66)	1243248.02	3268647.04	472876.28
2005	3947.00	1322.60	(1596.65)	(401.48)	641023.04	2549291.22	161186.19
2006	4415.40	1258.60	(1128.25)	(465.48)	525177.81	1272948.06	216671.63
2007	5151.41	1447.58	(392.24)	(276.50)	108454.36	153852.22	76452.25
2008	5721.08	1337.15	177.43	(386.93)	(68652.99)	31481.40	149714.82
2009	4854.02	1724.76	(689.63)	0.68	(468.95)	475589.54	0.46
2010	6097.74	1244.65	554.09	(479.43)	(265647.37)	307015.73	229853.12
2011	6871.19	2016.58	1327.54	292.50	388305.45	1762362.45	85556.25
2012	6693.17	2697.48	1149.52	973.40	1118942.77	1321396.23	947507.56
2013	7949.77	3155.00	2406.12	1430.92	3442965.23	5789413.45	2047532.05
Total	**55436.49**	**17240.82**			**7133347.37**	**16931997.34**	**4387350.61**

Mean ($\bar{\varepsilon}$) = $\frac{X}{N} = \frac{55436.49}{10}$

= 5543.65 million

Mean ($\bar{\psi}$) = $\frac{Y}{N} = \frac{17240.82}{10}$

= 1724.08 million

Karl Pearson's Correlation (r) = $\frac{«¬}{\sqrt{«^2 \quad ¬^2}}$

$= \frac{7133347.37}{\sqrt{(16931997.34)(4387350.61)}}$

= 0.83

This shows that there exists positive correlation between account receivable and cash balance. Since, correlation r is positive in order to compare it with probable error r has been calculated as follows.

r = 0.83

Now,

Calculation of probable Error (P.E.) = $\frac{0.6745(1 Z r^2)}{\sqrt{N}}$

$= \frac{0.6745(1 Z 0.83^2)}{\sqrt{10}}$

= 0.07

6 x (P.E.) = 6 x 0.07 = 0.42

Now, if r> 6 (P.E.), it is indicative of statistically significant positive correlation. Likewise, if r< (P.E.), it is indicative of statistically insignificant positive correlation.

Here, r < (P.E.), so there is a statistically significant positive correlation between Account Receivable and Cash & bank balance.

The upper and lower limits within which the correlation coefficient is expected to lie are given by;

r+ P.E. = 0.83 + 0.07= 0.90 (upper limit)

r - P.E. = 0.83 - 0.07= 0.76 (lower limit)

So, the correlation coefficient is expected to lie between 0.90 and 0.76 of Account Receivable and Cash balance.

4.2.6 Regression Analysis Account receivables & Cash balance

A regression line can also be fitted to show the degree of relationship between account receivables and cash balance.

The regression line of sales (X) on cash balance (Y) is given by,

$$(X-\bar{\varepsilon}) = r.\frac{\pm X}{\pm Y}(Y\ Z\bar{Y})$$

Where,
$\bar{\varepsilon}$ = Mean receivable = 5543.65
$\bar{\psi}$ = Mean cash balance = 1724.08
± x = Standard deviation of receivables
± y = Standard deviation of cash balance
r = Karl Pearson's coefficient of correlation = 0.83

…X = 2733.40 + 1.63Y

This equation shows those receivables are estimated to increase by 1.63 per unit increase in cash balance.
Likewise, the regression line of cash balance(Y) on receivable (X) can be computed as follows.

$$(Y-\bar{\psi}) = r.\frac{\pm Y}{\pm X}(X\ Z\bar{X})$$

…Y = -604.25+0.42X
This shows that cash balance is estimated to increase 0.42 per units increase in receivable.

4.2.7 Analysis of Karl Pearson's coefficient of correlation (r) between "Current Assets and Cash Balance"

To find out the correlation between current assets and cash balance, Karl Pearson's coefficient of correlation (r) is determined. For this purpose current assets and cash balance are assumed to be interrelated economic variables. Let us assume current assets as 'X' are dependent variables and cash balance 'Y' are independent variables.

Table: 4.18
Analysis of Karl Pearson's Coefficient of Correlation (r) between Current Assets and Cash Balance

(Rs. In Millions)

Year	Current Assets(X)	Cash Balance(Y)	(X- $\bar{\varepsilon}$)	(Y- $\bar{\psi}$)	«¬	«^{2}	¬^{2}
2004	7883.41	1036.42	(4497.14)	(687.66)	3092503.29	20224268.18	472876.28
2005	8740.90	1322.60	(3639.65)	(401.48)	1461246.68	13247052.12	161186.19
2006	9322.70	1258.60	(3057.85)	(465.48)	1423368.02	9350446.62	216671.63
2007	10322.97	1447.58	(2057.58)	(276.50)	568920.87	4233635.46	76452.25
2008	11178.08	1337.15	(1202.47)	(386.93)	465271.72	1445934.10	149714.82
2009	11233.03	1724.76	(1147.52)	0.68	(780.31)	1316802.15	0.46
2010	14359.98	1244.65	1979.43	(479.43)	(948998.12)	3918143.12	229853.12
2011	14367.52	2016.58	1986.97	292.50	581188.73	3948049.78	85556.25
2012	16647.13	2697.48	4266.58	973.40	4153088.97	18203704.90	947507.56
2013	19749.73	3155.00	7369.18	1430.92	10544707.05	54304813.87	2047532.05
Total	**123805.45**	**17240.82**			**21340516.88**	**130192850.31**	**4387350.62**

$$\text{Mean } (\bar{\varepsilon}) = \frac{X}{N} = \frac{123805.45}{10}$$

= 12380.55 million

$$\text{Mean } (\bar{\psi}) = \frac{Y}{N} = \frac{17240.82}{10}$$

= 1724.08 million

$$\text{Karl Pearson's Correlation (r)} = \frac{«¬}{\sqrt{«^2 \quad ¬^2}}$$

$$= \frac{21340516.88}{\sqrt{(130192850.31)(4387350.62)}}$$

= 0.89

This shows that there exists positive correlation between current assets and cash balance. But according to the theory increase in current asset should be followed by a decrease in cash balance and vice-versa. So, the above calculation of NEA is not applicable according to the theory. The correlation should be statistically significant to ascertain that there practically exists correlation between the two variables. For this purpose, probable error r has been calculated as follows.

r = 0.89

Now,

Calculation of probable Error (P.E.) = $\frac{0.6745(1 Z r^2)}{\sqrt{N}}$

= $\frac{0.6745(1 Z 0.89^2)}{\sqrt{10}}$

= 0.04

6 x (P.E.) = 6 x 0.04 = 0.27

Now, if r> 6 (P.E.), it is indicative of statistically significant positive correlation. Likewise, if r< (P.E.), it is indicative of statistically insignificant positive correlation.

Here, r > 6(P.E.), which shows that there exist an significant positive correlation between current assets and Cash & bank balance.

The upper and lower limits within which the correlation coefficient is expected to lie are given by;

r+ P.E. = 0.89 + 0.04= 0.93 (upper limit)

r- P.E. = 0.89 - 0.04= 0.85 (lower limit)

So, the correlation coefficient is expected to lie between 0.93 and 0.85 of Current assets and Cash balance.

4.2.8 Regression Analysis Current Assets & Cash Balance

A regression line can also be fitted to show the degree of relationship value of current assets. For this purpose, cash balance and current assets have been assumed interrelated economic variables.

The regression line of current assets (X) on cash balance (Y) is given by,

$$(X-\bar{\varepsilon}) = r.\frac{\pm X}{\pm Y}(Y\ Z\bar{Y})$$

Where,
$\bar{\varepsilon}$ = Mean current assets = 12380.55
$\bar{\psi}$ = Mean cash balance = 1724.08
± x = Standard deviation of current assets
± y = Standard deviation of cash
r = Karl Pearson's coefficient of correlation = 0.89

…X = 4001.52 + 4.86Y

This equation shows that current assets are estimated to increase by 4.86 per unit increase in cash balance.
Likewise, the regression line of cash balance(Y) on current assets (X) can be computed as follows.

$$(Y-\bar{\psi}) = r.\frac{\pm Y}{\pm X}(X\ Z\bar{X})$$

…Y = -256.81 +0.16X

This shows that cash balance is estimated to increase by 0.16 units per increase in current assets.

4.2.8 Analysis of Karl Pearson's coefficient of correlation (r) between "Current Liabilities and Cash Balance"

To find-out the correlation between current liabilities and cash balance, Karl Pearson's coefficient (r) is determined. For this purpose current liabilities and cash balance are assumed to be interrelated economic variables. Let us assumed current liabilities as 'X' are dependent variables and cash balance 'Y' are independent variables.

Table: 4.19
Analysis of Karl Pearson's Coefficient of Correlation (r) between Current Liabilities and Cash Balance

(Rs. In Millions)

Year	Current Liabilities(X)	Cash Balance (Y)	(X- $\bar{X}$)	(Y- $\bar{Y}$)	«¬	«²	¬²
2004	14559.82	1036.42	(15757.56)	(687.66)	10835843.71	248300697.15	472876.28
2005	17466.39	1322.60	(12850.99)	(401.48)	5159415.47	165147943.98	161186.19
2006	19854.19	1258.60	(10463.19)	(465.48)	4870405.68	109478344.98	216671.63
2007	23067.30	1447.58	(7250.08)	(276.50)	2004647.12	52563660.01	76452.25
2008	27759.55	1337.15	(2557.83)	(386.93)	989701.16	6542494.31	149714.82
2009	32983.00	1724.76	2665.62	0.68	1812.62	7105529.98	0.46
2010	39766.25	1244.65	9448.87	(479.43)	(4530071.74)	89281144.28	229853.12
2011	36082.68	2016.58	5765.30	292.50	1686350.25	33238684.09	85556.25
2012	44198.56	2697.48	13881.18	973.40	13511940.61	192687158.19	947507.56
2013	47436.05	3155.00	17118.67	1430.92	24495447.28	293048862.57	2047532.05
Total	**303173.79**	**17240.82**			**59025492.15**	**1197394519.54**	**4387350.62**

Mean ($\bar{X}$) = $\frac{X}{N} = \frac{303173.79}{10}$

= 30317.38 million

Mean ($\bar{Y}$) = $\frac{Y}{N} = \frac{17240.82}{10}$

= 1724.08 million

Karl Pearson's Correlation (r) = $\frac{«¬}{\sqrt{«^2 \; ¬^2}}$

$= \frac{59025492.15}{\sqrt{(1197394519.54)(4387350.62)}}$

= 0.81

Since, correlation coefficient is positive, it indicates that there exists positive correlation between current liabilities and cash balance.

r = 0.81

Now,

Calculation of probable Error (P.E.) = $\frac{0.6745(1 - r^2)}{\sqrt{N}}$

$$= \frac{0.6745(1 - 0.81^2)}{\sqrt{10}}$$

$$= 0.07$$

6 x (P.E.) = 6 x 0.07 = 0.44

Now, if r> 6 (P.E.), it is indicative of statistically significant positive correlation. Likewise, if r< (P.E.), it is indicative of statistically insignificant positive correlation.

Here, r > 6(P.E.), which shows that there exist an significant positive correlation between the two variables of Current Liabilities & Current Balance.

The upper and lower limits within which the correlation coefficient is expected to lie are given by;

r+ P.E. = 0.81 + 0.07= 0.88 (upper limit)

r- P.E. = 0.81 - 0.07= 0.74 (lower limit)

So, the correlation coefficient is expected to lie between 0.88 and 0.74 of Current liabilities and Cash balance.

4.2.10 Regression Analysis Current Liabilities & Cash Balance

A regression line can also be fitted to show the degree of relationship value of current liabilities. For this purpose, cash balance and current liabilities have been assumed interrelated economic variables.

The regression line of current liabilities (X) on cash balance (Y) is given by,

$$(X - \bar{\varepsilon}) = r.\frac{\pm X}{\pm Y}(Y - \bar{Y})$$

Where,
$\bar{\varepsilon}$ = Mean current liabilities = 30317.38
$\bar{\psi}$ = Mean cash balance = 1724.08
± x = Standard deviation of current liabilities
± y = Standard deviation of cash
r = Karl Pearson's coefficient of correlation = 0.81

…X = 7128.50 + 13.45Y

This equation shows that current liabilities are estimated to increase by 13.45 per unit increase in cash balance.

Likewise, the regression line of cash balance(Y) on current liabilities (X) can be computed as follows.

$(Y-\bar{\psi}) = r.\frac{\pm Y}{\pm X}(X\ Z\bar{X})$

…Y = 208.21 +0.05X

This shows that cash balance is estimated to increase by 0.05 units per increase in current liabilities.

4.2.9 Analysis of Karl Pearson's Coefficient of Correlation (r) between "Net Profit After Tax and Cash Balance"

To find-out the correlation between net profit after tax and cash balance, Karl Pearson's coefficient of correlation (r) is determined. For this purpose, Net profits after tax and cash balance are assumed to be interrelated economic variables. Let us assumed Net Profit after tax as 'X' are dependent variables and cash balance 'Y' are independent variables

Table: 4.20
Analysis if Karl Pearson's Coefficient of Correlation (r) between Net Profit After Tax and Cash Balance

(Rs. In Millions)

Year	Net profit after tax(X)	Cash Balance(Y)	(X-$\bar{\varepsilon}$) ƒ«	(Y-$\bar{\psi}$) ƒ¬	«¬	«^{2}	¬^{2}
2004	(1415.40)	1036.42	2463.80	(687.66)	(1694256.71)	6070310.44	472876.28
2005	(1092.91)	1322.60	2786.29	(401.48)	(1118639.71)	7763411.96	161186.19
2006	(1565.00)	1258.60	2314.20	(465.48)	(1077213.82)	5355521.64	216671.63
2007	193.26	1447.58	4072.46	(276.50)	(1126035.19)	16584930.45	76452.25
2008	(2467.53)	1337.15	1411.67	(386.93)	(546217.47)	1992812.19	149714.82
2009	(4930.04)	1724.76	(1050.84)	0.68	(714.57)	1104264.71	0.46
2010	(6961.82)	1244.65	(3082.62)	(479.43)	1477900.51	9502546.06	229853.12
2011	(6089.22)	2016.58	(2210.02)	292.50	(646430.85)	4884188.40	85556.25
2012	(9947.88)	2697.48	(6068.68)	973.40	(5907253.11)	36828876.94	947507.56
2013	(4515.48)	3155.00	(636.28)	1430.92	(910465.78)	404852.24	2047532.05
Total	**(38792.02)**	**17240.82**			**(11549326.70)**	**90491715.04**	**4387350.62**

Mean ($\bar{\varepsilon}$) = $\frac{X}{N} = \frac{(38792.02)}{10}$

= (3879.20) million

Mean ($\bar{\psi}$) = $\frac{Y}{N} = \frac{17240.82}{10}$

= 1724.08 million

Karl Pearson's Correlation (r) = $\frac{«¬}{\sqrt{«^2 \quad ¬^2}}$

$= \frac{(11549326.7)}{\sqrt{(90491715.04)(4387350.62)}}$

= 0.58

Since, correlation coefficient is negative, it indicates that there exists negative correlation between net profit after tax and cash balance.

r = 0.58

Now,

Calculation of probable Error (P.E.) = $\frac{0.6745(1 Z r^2)}{\sqrt{N}}$

$= \frac{0.6745(1 Z 0.58^2)}{\sqrt{10}}$

= 0.14

6 x (P.E.) = 6 x 0.14 = 0.85

Now, if r < 6 (P.E.), it is indicative of statistically insignificant positive correlation. Likewise, if r< (P.E.), it is indicative of statistically insignificant positive correlation.

Since, r = 0.58, which is lower than probable error 6(P.E.) = 0.85, i.e. r < 6P.E., it indicates that positive correlation between these two variables is not practically significant. In other words, when cash balance held decrease, the net profit after tax increase, and vice-versa.

The upper and lower limits within which the correlation coefficient is expected to lie are given by;

r+ P.E. = 0.58 + 0.14= 0.72 (upper limit)

r- P.E. = 0.58 - 0.14= 0.44 (lower limit)

So, the correlation coefficient is expected to lie between 0.72 and 0.44 of Net profit after tax and Cash balance.

4.2.12 Regression Analysis Net Profit after Tax & Cash Balance

A regression line can also be fitted to show the degree of relationship value of Net profit after tax. For this purpose, cash balance and Net profit after tax have been assumed interrelated economic variables.

The regression line of Net profit after tax (X) on cash balance (Y) is given by,

$$(X-\bar{\varepsilon}) = r.\frac{\pm X}{\pm Y}(Y\ Z\bar{Y})$$

Where,
$\bar{\varepsilon}$ = Mean Net profit after tax = -3879.20
$\bar{\psi}$ = Mean cash balance = 1724.08
± x = Standard deviation of Net profit after tax
± y = Standard deviation of cash
r = Karl Pearson's coefficient of correlation = 0.58

…X = 655.13 – 2.63Y

This equation shows that Net profits after tax are estimated to increase by 2.63 per unit increase in cash balance.

Likewise, the regression line of cash balance(Y) on Net profit after tax (X) can be computed as follows.

$$(Y-\bar{\psi}) = r.\frac{\pm Y}{\pm X}(X\ Z\bar{X})$$

…Y = 1219.78 – 0.13X

This shows that cash balance is estimated to increase by 0.13 units per increase in Net profit after tax.

4.2.13 Analysis of Cash flow statement

Cash From Operating Activities (CFOA); From appendix v all in the fiscal year from 2004 to 2013, operating activities is positives. So, it indicates that company able to perform its daily activities. The highest cash from operating activities is Rs. 24728.52 million in fiscal year 2011, the lowest cash from operating activities is Rs. 2824.23 million in fiscal year 2010 & average cash from operating activities is Rs. 6982.98 million. It shows the efficiency of the management for managed cash. Most of the cash obtained from operating activities has been used for a acquiring inventories, prepaid, advance, loans, deposit & granting credit to customers.

Cash From Investing Activities (CFIA); The investing activities are negatives which indicate that the company is investing its fund in long term & short term project. The highest cash flow from investing activities is Rs. 14361.94 million in fiscal year 2013, the lowest cash flow from investing activities is Rs. 7273.42 million in fiscal year 2006 & the average cash flow from investing activities is Rs. 10061.43 million. The company is investing on fixed assets, capital work in progress & investment which show that the company is in the condition of expansion of the company. But for the investment, the company is using cash either from operating activities or financing activities in all fiscal year.

Cash From Financing Activities (CFFA); Financing activities are desirable. It is positive which indicates that the company is collecting funds from various sources like equity shares, borrowing long term & short term loans from bank. But in fiscal year 2011, the financing activity is negative (i.e. Rs.-12104.53). The cause of this reason is decrease of share capital of the company on the basis of fiscal year 2010. The highest cash from financing activities is Rs. 11321.44 million in fiscal year 2013, the lowest cash from financing activities is Rs. -12104.53 million in fiscal year 2011 & the average cash from financing activities is Rs. 3313.85 million. The company is receiving its bank loan in all fiscal year. The company is using fund of cash either from financing activities for investment.

The ratios analysis of cash flow statement as follows;

a) **Operating cash to capital employed,** the ratio indicates that operating cash flow covered up to calculated percentage of the capital employed by the company. Cash inflows from operating activities in all fiscal year are satisfactory. The highly covered by 90.34% in fiscal year 2011 & the lowest covered by 7.01% in fiscal year 2010.
b) **Debt affordability ratio,** the ratio indicates that the operating cash flow is calculating times of the financing cash flow it indicates that company can

easily repay the debt if need raise as its operating activities are generating sufficient cash flow. There will be no difficulty to repay the debt and the company can easily without any financial constraint repay its debt. In fiscal year 2006 the highest ratio is 2.82 times then the company has easily repay the debt. But in fiscal year 201,1 the ratio is lowest & negative (i.e. -2.04 times) then the company is very poor for repay the debt.

c) **Quality income ratio,** cash flow from operation and interest is given calculating times of the net income interest and depreciation. The quality income ratio in fiscal year 2005, 2006, 2007, 2008, 2011 & 2013 are 2.39, 2.54, 1.91, 4.60, 52.83 & 2.63 respectively which are positive. It indicates the satisfactory or just comfortable cash position but in fiscal year 2009, 2010 & 2012. The quality income ratios are -102.10, -16.64 & -2.63 which are negative. It indicates the company is not satisfactory for comfortable cash position.
d) **Investing-inflow ratio,** the calculating ratios are indicates that cash outflow or used in investing activities is given percentage of both cash flow from investing and financing activities. In all fiscal year, there are no problems for financing for expansion and growth in the company. The highest investing inflow ratio is 472.35 percent in fiscal year & the lowest investing inflow ratio is 49.47 percent in fiscal year 2011.
e) **Capital expenditure ratio,** the operating cash flow to investing cash outflow indicates that the operating cash flows are more than support the expansion and growth program of the company at present. In fiscal year 2005, 2006, 2007, 2008, 2009, 2010, 2012 & 2013 are positive times (i.e.2.49, 2.82, 1.84, 1.37, 1.07, 0.48, 0.46 & 0.31). It indicates that the ratios are satisfactory for easily expansion and growth the company but in fiscal year 2011is negative time (i.e. -2.04 time). In this fiscal year, the company is not satisfactory. Similarly, the investing cash flow to financial cash flow ratios (time) are -3.37, -3.85, -2.78, -2.40, -1.99, -1.56, -1.37 & -1.27 in fiscal year 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2012 & 2013 restively. It indicates that the company is not depending on in financing for investment to expansion and growth the program of the company. Whereas the ratio of CFIA/CFFA is in all fiscal year expect 2011, the ratio is positive i.e. 0.98 time. It indicates the company depends on financing to investment for business expansion or growth the program.

4.3 Major Finding of the study

Basically, in this research work, all data has been obtained from secondary sources. Data has been analyzed by using financial & statistical tools. The study mainly focuses on two objectives. First one is to determine the liquidity position. Similarly,

second objective is to determine profitability of NEA. The major finding of the study derived from the analysis of financial and statistical tools of NEA are given below:

Liquidity Position of NEA

- The cash and bank balance shows greater fluctuation in FY 2004, 2005, 2007, 2008, 2009 and 2010 but after FY 2010, fluctuation was quite low in comparison to the previous FYs and again in the last year there is a great fluctuation. Holding of optimum cash and bank balance is the rational cash management practice of a business firm. There is lower coefficient of variation of NEA (i.e. 38.42%) which signifies that holding cash balance is highly consistence and stable. The trend line shows positives figure of cash balance in future.
- In case of cash turnover ratio, due to the unavailability of information regarding credit policy of the company the credit days allowed its debtors was not known. So, no peruse analysis could be carried out for cash turnover cycle. Karl Pearson's correlation shows that there exists positive correlation between the cash & sales (i.e. 0.92). According to PE, It conclusion could be derived as to statistically significant /insignificant.
- In case of total cost of holding cash & bank balance, more fluctuate in all fiscal year. It found that in FY 2007, the cost of holding cash & bank balance is lowest i.e. Rs.10.05 million where the total opportunity & total transaction cost is equal i.e. Rs.5.03 million. In FY 2012, the highest cost of holding cash & bank balance is Rs.135.84 million where the total opportunity cost & total transaction cost is equal i.e. Rs.67.92 million.
- In case of analysis of cash flow statement & those ratios, the company is going on satisfactory in all fiscal year expect 2011. The company depending on financing activities & operating activities to investment for expansion of business & growth the program of the company and sufficient funds through operating activities to investment for expansion & growth of business except of fiscal year 2011 (i.e. CFOA/CFIA is -2.04 times & CFIA/CFFA is 0.98 times).
- In case of current ratio, the ratios in FY 2004 is near about 1:1 which are moderate satisfactory and in 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 and 2013 the ratios are below the standard ratio and unsatisfactory for the company.
- In case of receivable turnover ratio, Since the information regarding credit days extended to customers are not available, and moreover, such credit days are likely to vary depending upon the nature of debtors, there is no absolute means of comparison available to compare the average collection days.

- In case of inventory turnover ratio, the highest ratio is in FY 2004 which indicates better inventory management and better liquidity position. Similarly, in FY 2012 and 2013 also the ratios are high which indicate the better liquidity position. The lowest ratio is in FY 2012 which indicates poor inventory management and poor liquidity position.
- In case of analysis of cash and bank balance to account receivable ratio. The percentage of account receivable is highest in FY 2012 (40.30%). This shows that the liquidity position is good in FY 2012. But the % of A//c receivable in 2010 is 20.41 which is the lowest per cent, this shows the liquidity position is not good. Analysis of Karl Pearson's coefficient of correlation between account receivables and cash balance shows there is positive relation. But according to PE, no conclusion could be derived as to statistically significant/ insignificant.
- In case of analysis of cash and bank balance to current assets, the company has undergone cash scarcity to meet short-term payments during the all FY. Analysis of Karl Pearson's coefficient of correlation (r) between current assets and cash balance shows positive correlation. But according to PE, no conclusion could be derived as to statistically significant/ insignificant. This shows that the company has not been practically following the general rule of higher current-assets, higher cash balance and vice-versa.
- In case of analysis of cash and bank balance to current liabilities the company is unable to meet its payment of current liabilities in time. Analysis of Karl Pearson's coefficient of correlation. But according to PE, no conclusion could be derived as to statistically significant / insignificant.

Profitability Position of NEA

- Analysis of net profit margin which shows the relation between net profit and sales. The ratios are all negative except in one FY i.e. in 2007 which indicates the company has been operating under loss in all of the FYs. Analysis of Karl Pearson's coefficient of correlation (r) between Net profit of tax and cash balance shows positive correlation. But according to PE, no conclusion could be derived as to statistically significant / insignificant.
- Analysis of return on working capital, all the ratios are in negative figure in every FY except in one FY i.e. in 2007. The company has not been utilizing its current assets effectively in earning profit. Overall, the return on working capital is disappointing indicating down fall of the company.
- Analysis of net profit after tax to quick assets, from FY 2004 to 2013 all ratios are negative except in FY 2007. The figures clearly indicate that utilized quick assets have not been earning profit in average rather incurring average loss.

CHAPTER-V
SUMMARY, CONCLUSION AND RECOMMENDATION

This is the final chapter that involves summary, conclusion and recommendation of the research work. The fact and findings from secondary data analysis are presented in this chapter. Beside summarizing and concluding research work, recommendations are made to concerned persons and organization.

5.1 Summary

The perception of the government and its role in public welfare has helped to establish public enterprises engaged in public utilities. Role of the government owned enterprises is supposed to be undermined in the present context of worldwide privatization, liberation and globalization. But in developing country like Nepal where private sector is not strong and in sound position to provide public utilities to the people, public utility concern's role cannot be undermined.

Though Nepal is rich in water resources, we Nepalese people are in the condition of "shadow under light". There is consensus that development of its abundant water resources could largely benefit the nation. Though hydro-electric potentiality of Nepal is 83,000 MW, only about 640 MW electricity is generated including from diesel and multi-fuel plant. Many changes are taking place in the power sector in the concept of completion, choice in the process of commercialization and management of our available water resources is essential for the al round development of the nation. In this regard, Nepal Electricity Authority is only an institution engaged for the development of power sector of our country. Sound and effective management of NEA is essential for the better utilization of available water resources of the country.

NEA has a challenge to operate in a manner that improves the key business processes, maximizes the revenue generation and profitability of the organization. The commercial goals of NEA should also be financially viable, fully autonomous, and accountable and majority owned government business entity. In this study is conducted to identify whether some of the theories of cash management are applicable or not in the Nepalese public enterprises. For this reason brief introduction about public enterprises, public enterprises in Nepal, role and objectives of PEs, historical background of NEA, cash management which is the most important part of company, statement of problem, objectives, scope and limitation of the study, plan of study and so no are made in first chapter.

In second chapter, theoretical review as well as review of previous research has been made. And so on are reviewed on that chapter. Different views about cash management, function of cash management, efficiency, different techniques, of cash management and so on are reviewed on that chapter. Determining the optimum cash balance, motives for holding cash where precautionary motives, transaction motives, speculative motives are reviewed. And lastly Government publications are also reviewed.

In third chapter, there is research methodology which will be helpful for the fourth chapter in data presentation and analysis. Out of the total financial system one service enterprise is chosen for a research purpose, mainly financial tools & statistical tools are set for the analysis. Lastly on fourth chapter, collected data are presented in tabular and graphic form and analyzed using various financial tools like cash & bank balance, cash turnover ratio, current ratio, quick ratio, receivable turnover ratio, cash & bank balance to account receivable. Cash & bank balance to current assets and current liabilities, inventory turnover ratio, return on working capital ratio, net profit margin ratio, net profit after tax to quick assets and statistical tools like mean, standard deviation, correlation coefficient, covariance, probable error. These all are analyzed whether or not the relationship between variable matches with the theories that have been studied on literature review part.

5.2 Conclusion

Based on the above summary and finding of the research, following conclusion can be point out after detail analysis of cash management. In conclusion, it can be said that cash management is an important part of the financial decision making variable. Many factors or determinants such as nature of business, level of sales, credit terms, quality of customers, economic condition etc have to be considered in cash management. Apart from the level of purchase, method of creating cash management, establish of credit terms, types of credit policy, motives for holding cash, efficiency of cash management, different technique of cash management etc. are to be considered.

- The cash and bank balance shows greater fluctuation in FY 2004, 2005, 2006, 2007, 2008, 2009 and 2010 but in other remaining FY, fluctuation was quite low in comparison to the previous FYs. Holding of optimum cash and bank balance is the rational cash management practice of a business firm. There is lower coefficient of variation of NEA which signifies that holding cash balance is highly consistence and stable. The trend line shows positive figure of cash balance in future.
- In case of cash turnover ratio, the highest cash turnover ratio is 13.79 where the cash conversion period is 26 days. And the lowest cash turnover ratio is 7.45

where the cash conversion day is 49. Due to the unavailability of information regarding credit policy of the company the credit days allowed its debtors was not knows. So, no peruse analysis could be carried out for cash turnover cycle. Analysis of Karl Pearson's Correlation shows that there exists positive correlation between the two variables i.e. cash or sales. According to PE, it could be derives as to statistically significant. Correlation coefficient between cash and bank balance and sales being positive of 0.92 and the relation r > 6(P.E.), suggested statistically inconclusive positive correlation as to significant, showing little complicity of cash and bank balance with sales variable.

- In case of current ratio, the ratios in FY 2004 is near about 1:1 which is satisfactory and in 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 and 2013 all of the ratios are below 1:1 which indicates that the NEA does not have a sound or satisfactory liquidity position.
- In case of analysis of cash and bank balance to account receivable ratio. The percentage of account receivable is highest in FY 2012 (40.30%). This shows that the liquidity position is good in FY 2012. But the % of A/c receivable in 2010 is 20.41 which is lowest percent, this shows the liquidity is not good. Analysis of Karl Pearson's coefficient of correlation between account receivables and cash balance shows there is positive relation i.e. 0.83 which suggests increase in cash and bank balance follows increase in account receivable and vice versa which is theoretically not match. it proves that in practical theory in not apply. But according to PE, no conclusion could be derived as to statistically significant/ insignificant.
- Proportion of cash and bank balance in its current assets is very small and the cash balance held shown positive relation to the amount of current assets of RDL. Average ratio of cash and bank to current assets is 13.80%, which is very small portion of cash in current assets. Correlation coefficient between the two is 0.89
- NEA has not been precisely meeting its current liabilities payment: In case of analysis of cash and bank balance to current liabilities, The Company being unable to meet its payment of current liabilities in time. This is yet another indication of management of cash. The highest ratio of cash and bank to current liabilities is 54.14% excess cash and bank balance compared to current liabilities in FY 2004 and the lowest ratio 34.06% in FY 2009. Analysis of Karl Pearson's coefficient of correlation (r) between current liabilities and cash balance is 0.81 shows the positive correlation. But according to PE i.e. 0.07 and 6PE is 0.44 which indicate r > 6PE, it be derived as to statistically significant.
- A large portion of NEA's current assets has been tied-up in the most liquid assets; i.e. inventory.

- The cross examination of the liquidity position suggested that current assets have been tied-up in slow moving and unsalable inventories. Analysis show that the average current ratio was found to be dissatisfying and calculated to be 0.54:1, which is lower than the conventionally accepted current ratio of 2:1. The average quick ratio was also found to be dissatisfying and calculated to be 0.47:1, which is lower than the conventionally accepted quick ratio of 1:1. This indicated the possibility of current assets being tied-up in show moving and unsalable inventories.
- Current assets and quick assets are not being maintained accordance with current liabilities: current assets are not maintained in the accepted pattern of i.e. increase in current assets following increase in current liabilities and vice-versa. Likewise, neither the quick assets has been maintained in the accepted pattern of i.e. increase in quick assets followed by increase in current liabilities and vice-versa.
- Profitability of NEA being in worsening trend, liquidity does not practically increase with increase in profitability and vice-versa: Average net profit margin ratio i.e. average ratio of net profit after tax to sales is -22.40%, average ratio of net profit after tax to current assets is -0.29%; and average ratio of net profit after tax to quick assets is -34.35%. These analyses indicate that profitability position of NEA is worsening in an alarming rate.

Conclusively, it can be stated that NEA's cash management is very poor. Liquidity position is dissatisfactory, Negative profitability of the company adds much to the worsening financial position of the company. The accumulated amount of account receivable which is increasing year by year denotes the inefficiency of the authority to collect its revenue in time. There is the absence of effective utilization of capital employed and liquidity position is also not satisfactory. The authority fails to analyze its strength and weaknesses in depth. Because of the absence of the competitors, authority has become monopolistic and, hence, it is not alert towards its possible threats and opportunities. Different statistical tools show the positives relationship with two variables like cash and sales, cash and account receivable, current assets and cash, current liabilities and cash. The authority is not able to maintain a proper co-ordination among various directorates in regards of the goals, objectives and strategies of the organization. The authority has been facing some problems in cash management. Management has the lack of adequate knowledge about the following facts nature and content of cash management. So, there is the necessity of change in the management system of the authority. Besides, cash management being one of the important elements in financial function, there are other numerous aspects of finance involved in the overall financial performance of the company. In addition to this, the overall performance of the company counts for other managerial aspects such as;

human resource management, organizational structure, markets management etc. However, above all disappointing down-falling trend of the financial position is indicative of the fact that NEA should immediately seek for drastic change in its managerial structure. So far cash management is concerned, the recommendation suggested above could, to a greater extent, uplift NEA's cash management situation.

5.3 Recommendation

Suggestion is the output of the whole study. It helps to take corrective action in their activities in future. Different analysis were done till arrive this step. On the basis of above analysis, findings of the study, summary and conclusion, following suggestions may be referred to overcome weakness, inefficiency. The following suggestions are recommended to improve the formulation and implementation of cash management system of NEA.

- NEA must follow the definite policy regarding the amount of cash to hold each fiscal year.
- The liquidity position is not satisfactory. So it should be correction for managing healthily cash & bank balance or liquidity position.
- NEA should develop efficient system of revenue collection. It should make well defined rules and regulations in regard of revenue collection and if the customer of any category delays or denies, it should be charged penalty. In revenue collection, any kind of pressure and biases should strictly be undermined. Huge amount of account receivable especially of municipality, metropolis, sub-metropolis consumed in street lights should be managed and receivable can be collected by imposing its expenditures to the neighboring community people.
- The enterprise should be well familiar with its strengths and weakness and it should not be indifferent about its competitors. Because of the liberalized economic policy of the government. That's why the enterprise should be aware of effective corporate planning system and strategic management. Hence, a systematic approach should be developed towards comprehensive cash management. This can considerable contribute to increase the profitability of the NEA.
- The company should have suitable credit policy to handle the cash management effectively. It should adopt liberal credit policy to handle the cash management effectively. It should adopt liberal credit policy to increase the sales. Next, it should adopt strength credit policy especially for its staffs and workers for effective credit and collection performance as low total receivable.

One of the reasons of lower turnover and high collection period arise due to more advances to company's employees.

- NEA should try to maximize its operating profit. For this, cost control program can be launched in one respect and the alternative for the replacement of long term loans should be searched.
- The installed capacity of NEA should be utilized fully. If it utilizes its full capacity, the operating expenses will down.
- Highly qualified, dynamic, energetic and skilled manpower inventory should be made available by the authority and staffs should be property and unwisely trained and motivated.
- There is inadequate electricity in the time of peak demand which creates the problem of load shedding and there is surplus of electricity in the rainy season due to the sufficient flow of water which helps to generate more. It is due to the lack of proper management and planning. This problem can be solved timely.
- Tariff rate for internal sales and external sales should be made equal so that all types of consumer can be benefited.
- There should be timely evaluation of strengths and weakness. Different aspects such as managerial involvement, organizational adoption, responsibility accounting, full communication, realistic expectations, time dimensions, flexible application, behavioral point of view and follow up programs should be made more effective, productive and result oriented for the successful operation of the organization.

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Appendixes

Nepal Electricity Authority

Statement of Financial Position as at July 15, 2013 (Balance Sheet)

Particulars	2013*	2012	2011	2010	2009	2008	2007	2006	2005
Assets									
Non Current Assets									
Property, Plant & Equipment	86251.65	85460.71	84725.47	83105.63	81238.50	52030.28	51781.76	51743.38	
Capital Work in Progress	39540.05	29905.45	22832.03	17040.47	13550.46	35699.71	29145.19	21991.50	
Investments	5776.51	5049.17	4855.07	3122.06	2139.92	1620.19	882.05	819.90	
Deferred Expenditure to be Written Off	0.00	0.00	0.00	323.68	361.22	423.33	130.94	32.40	
Total Non-Current Assets	**131568.21**	**120415.33**	**112412.57**	**103591.84**	**97290.10**	**89773.51**	**81939.94**	**74587.18**	
Current Assets:-									
Inventories	3061.91	3033.83	2502.93	2431.99	2159.12	1800.13	1498.45	1354.80	
Trade and other Receivables	7949.77	6693.17	6871.19	6097.74	4854.02	5721.08	5151.41	4415.40	
Cash and Cash Equivalents	3155.00	2697.48	2016.58	1244.65	1724.76	1337.15	1447.58	1258.60	
Prepaid, Advance, Loans and Deposits	5583.06	4222.65	2976.82	4585.60	2495.13	2319.72	2225.53	2293.90	
Total Current Assets	**19749.74**	**16647.13**	**14367.52**	**14359.98**	**11233.03**	**11178.08**	**10322.97**	**9322.70**	
Total Assets	**151317.95**	**137062.46**	**126780.09**	**117951.82**	**108523.13**	**100951.59**	**92262.91**	**83909.88**	
Equity and Liabilities									
Capital and Reserves									
Share Capital	36527.02	31422.44	25694.81	38651.77	33659.46	28609.97	26382.18	23113.10	
Reserves and Accummulated Profits:									
Reserve	1760.15	1706.03	1677.55	1631.30	1497.85	1407.83	998.92	550.49	

Accumulated Profits (Loss)	(14432.45)	(9866.97)	0.00	(21022.36)	(14098.83)	(8985.61)	(6650.04)	(6095.81)	
Total Equity	**23854.72**	**23261.50**	**27372.36**	**19260.71**	**21058.48**	**21032.19**	**20731.06**	**17567.78**	
Non-Current Liabilities									
Borrowings	79333.97	68909.20	62631.85	58231.66	53788.45	51368.84	47616.15	46487.91	
Deferred Tax	693.20	693.20	693.20	693.20	693.20	791.01	848.40	0.00	
Total Non-Current Liabilities	**80027.17**	**69602.40**	**63325.05**	**58924.86**	**54481.65**	**52159.85**	**48464.55**	**46487.91**	
Current Liabilities									
Borrowings	1200.00	3500.00	790.00	1280.00	250.00	1140.00	0.00	700.00	
Sundry Creditors and Other Payables	32621.18	29137.09	27825.95	32909.45	29402.22	24534.17	22374.17	18444.39	
Provisons	13614.87	11561.47	7466.73	5576.80	3330.78	2085.38	693.13	709.80	
Total Current Liabilities	**47436.05**	**44198.56**	**36082.68**	**39766.25**	**32983.00**	**27759.55**	**23067.30**	**19854.19**	
Total Liabilities	**127463.22**	**113800.96**	**99407.73**	**98691.11**	**87464.65**	**79919.40**	**71531.85**	**66342.10**	
Total Equity and Liabilities	**151317.94**	**137062.46**	**126780.09**	**117951.82**	**108523.13**	**100951.59**	**92262.91**	**83909.88**	

Note:- *Provisional Figures

(Source:- Published Annual Report of NEA)