

**CASH MANAGEMENT ANALYSIS OF NEPAL
WATER SUPPLY CORPORATION**

By

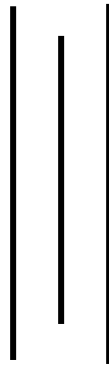
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**A Thesis Submitted to:
Office of the Dean
Faculty of Management
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*In partial fulfillment of the requirement for the degree of
Master of Business Studies (MBS)*

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RECOMMENDATION

This is to certify that the thesis

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Master of Business Studies (MBS)

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DECLARATION

I hereby declare that the work reported in this thesis entitled “**Cash Management Analysis of Nepal Water Supply Corporation**” 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 (MBS) under the supervision of **Joginder Goet** of Shanker Dev Campus, T.U.

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Bishnu Gajurel

ABBREVIATIONS

A/C	:	Account
BS	:	Bikram Sambat
EOQ	:	Economic Order Quantity
FY	:	Fiscal Year
i.e.	:	That is
KTM	:	Kathmandu
Ltd.	:	Limited
MBS	:	Master in Business Studies
MPES	:	Manufacturing Public Enterprises
NTC	:	Nepal Telecom
NWSC	:	Nepal Water Supply Corporation
P.E.	:	Probable Error
PEs	:	Public Enterprises
r	:	Correlation
Rs.	:	Rupees
S.D	:	Standard Deviation
T.U.	:	Tribhuvan University
WSSC	:	Water Supply and Sewerage Corporation

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CHAPTER - I

INTRODUCTION

1.2 General Background

Nepal has made great progress in recent decades transitioning from an isolated medieval kingdom with no infrastructure to a modern state. Poverty reduction remains the greatest development challenge for this nation of 23.1 million. More than 45% of population lies below the poverty line. Many of its social indicators are among the lowest worldwide: nearly 40% of its population lack access to basic healthcare and education; half Nepal's children under the age of five are malnourished; 80% of its citizens rely on subsistence agriculture, even as only 20% of Nepal's rugged Terrain is arable. Agriculture is the backbone of Nepalese economy, means of livelihood for the majority of population and the main source of gross domestic production, income and employment because half the country's population is crowded into the hilly, fertile southern Terai region. But non-agricultural sectors have also significant contribution in the national economy.

Economic growth of a country is directly related with its industrial growth. Expansion of industries leads to greater utilization of natural resources creation of employment opportunities, increase export and decrease the import of goods and services, getting enough income, which improve the general standard of living of people. About four decades ago, when the country was under Rana rule for more than a hundred years no significant initiatives were taken to improve the economic condition. There were few Rana prime minister who had shown their interest in establishing some industries and public companies for the first time in the country. During the rule of Ranas, few industries were established, for example: communication and ropeway transportation, Nepal Bank ltd, Morang sugar mills ltd and Nepal insurance and transport company ltd.

In fact, public sector and private sector are in dispensable basis for growth and development of the economy of the country. Actually these are two wheels of the economy where as public sector provides the base for development of private sector, Public sector and private sector both are internal parts of the national economy.

Nepal has abundant natural resources, but still is back work in term of socio economic development because of the inability in exploiting the resources. Exploitation of the available resources helps to make economy of a nation strong by flourishing various development works. Among the various resources available in the nation, water resource is the greatest one. It's the second richest country in the world in water resource. The physiographic of Nepal facilities to mime water in three forms as snow, rain fall and ground water. These forms have generated more than 6000 river and rivulets inter linked mainly in four major river systems carving to this tiny country Nepal. The perennial river systems carry out 225 billion cubic meter of water every year and follow down to Indian Ocean via India.

The water resources of Nepal can be considered as incomparable means of all round development if it is used wisely. From our rivers, we can not only generate hydro electricity but it can be multipurpose source of energy. This typical gift of nature has abundant potentiality of fresh water sources for drinking purpose and hydropower generation besides other uses.

Water is one of the most essential substances of human life, which is provided by nature. The existence of all living being that is plant; animal and human depend in water. According to the history, the civilization development around the abundant supply of water, which is derived from different sources and unevenly distributed, Water is equally important for other development activities. First of all we need it for drinking purpose. It is as important as we need air for breathing, we use water for different purpose such as drinking,

washing, protecting life and protect against fire, bathing cleaning, industrial purpose etc.

Therefore, the National water plan should focus on the utilization of water in two aspects as water resource developed to fulfill the related service of domestic need and for commercial purpose. Thus the integrate water resource development project for agriculture and vegetation growth, water induced disaster control, sustainable drinking water supply and electricity generation have the potential to overall development if the country.

Considering the multiple use of water resource, Nepal government has established the public enterprise that is Water supply and sewerage corporation (WSSC). It is an enterprise of public utility which is striving to achieve its objectives. The success and failure of this corporation in achieving its set goal depends on its strategy, planning of various budgets and financial performance.

1.2 Introduction of NWSC

Nepal Water Supply Corporation is an organization which came in to being in the month of February 1990 under the NWSS act 1990 of Nepal government. It operates as an important utility in providing its services in the field of drinking water and sewerage amenities in the urban centers of Nepal.

The first drinking water scheme in Nepal was called "Bir Dhara" in B.S. 1995 "Pani Goswara" is one of the oldest offices in the history of Nepal. It was based in Kathmandu. Later on, new schemes were also implemented in stages to provide drinking water in Patan and Bhaktapur and some augmented in Kathmandu with a new system popularly known as "Tri Bhim Line".

The department of irrigation and water supply was responsible body for water supply unit 1972. Then the department of water out more time bond programmer in the water supply and sewerage sectors throughout the country.

The water supply and sewerage board was constituted in July, 1973 under the development board act, 1957 to implement the project, financed under the International Development Association to provide improved water and sewerage facilities in Kathmandu valley and Pokhara systematically.

Water supply and Sewerage Corporation was established in 1985 July under the corporation act. 1965 with the objective of providing more autonomy in its operation and enabling it to function on a commercial basis by dissolving the "Water Supply and Sewerage Board". And since 1990 Water Supply and Sewerage Corporation was converted in to "Nepal Water Supply Corporation", a fully government owned public utility that establish under the corporation act 1990. Its main objectives are to provide pure drinking water

Some of the main challengers are as under maintained of NWSC

1. Need to complete with private utilities in the coming years.
2. Financial resources constraints to meet even growing demand aspiration of the public.
3. Very old network system in place but still in use, contribute to a high leakage percentage, demanding immediate up-grading.
4. Shortage of water for rapidly growing population, especially in urban areas.
5. Strengthen institutional capacity to fulfill customer's expectation in the new millennium.

1.3 Introduction of Cash Management

Cash is the most important current assets for the operation of the business. It's the basic input needed to keep the business. It is ultimate output expected to be realized by selling the services or products manufacturing by the firm as well. The firm should keep sufficient cash, which should be neither more nor less. Cash shortage will disrupt the firms manufacturing operation, while excessive

cash will simply remain idle unproductive. Thus the major function of financial manager is to maintain a sound cash position.

1.4 Efficient Cash Management Practices in PEs

Cash management has been the most intricate and challenging area of modern corporation finance as much the management always fine a tradeoff between the liquidity and profitability of a firm. Most of the enterprises in Nepal have been well recognized the importance and purpose of cash management although they are facing the problem of cash management. Most of the enterprises of Nepal are based on traditional practices. Large enterprises have periodic accumulation of surplus cash and corresponding cash shortage from time to time. However, most of the enterprises considered the implication of holding idle cash balance and few have taken in the account the potential benefit of investing surplus in marketable securities. In Nepalese firm's context, the theory of cash management has not been much effectively applied in practice, term such as cash flow analysis cash discount policy, cash equivalent has never been serious considered. Traditional approaches are feculent to adopt modern enterprises. One of the major coerces involved in the down falling trend of public and private companies in Nepal is obviously the mismanagement of cash balance level of cash for day to day operation or for the use in the short run has been one of the greatest shortcoming in the area of finance function. However use of sophisticated forecasting technique is not basic requirement of budgeting the inherent quality of a cash budget prepared at the beginning of a fiscal year, it untouched thereafter can be of no use, even if it was prepared with very sophisticated forecasting tool.

In order to remedy the current problem of cash management in public enterprises studies and researches are to be conduct to find out the reality so this study would be one those efforts and thus it will examine the cash management practice being employed in Nepal water supply corporation, one of the leading public enterprise in Nepal.

1.5 Statement of the Problem

The down falling trends of public enterprises, especially the industries public enterprise or the manufacturing enterprises have been the over cashing problem of our country. Hardly a handful of these public enterprises have provided satisfactory rest of all being a burden to the government. In the same of economic liberalization, many of these companies are either privatized or in the process of privatization to get rid of the burden.

With an objective to accelerate the movement of economic and social development of the country, Nepal government operates carious public enterprises by investing huge amount of resource. These PES were established when private sector was not fourth coming to people. in the past several PES were established under the foreign assistance as well. However weak position and unsatisfactory financial performance have made the huge government investment unproductive and the return on investment is in diminishing trend.

These bitter facts urged this researcher to find out the relation down falling trend of financial performance of these public manufacturing enterprises, what would be the underlying deficiency, which is hindering the financial success of public enterprises? can a public enterprise not service on its own efforts without being privatized? The movement of a public enterprise is privatized most coming gradually with draws obviously these are number of problems for the PES, interference of politically infected bureaucracy are not doubt the major causes, the poor financial performance is not doubt the effect. The current upsetting situation is obviously because of weak financial performance or rather a haphazard financial decision of the public enterprises. However such poor performance is to be verified on the grounds of globally accepted financial statistical tool.

1.6 Objectives of the Study

The main objectives of the study are as follows

1. To examine the existing internal control policy of cash transaction in NWSC
2. To analyze the cash flow structure and cash management techniques practiced by the company.
3. To examine the liquidity position of NWSC
4. To study the relationship of cash with other influencing variable of cash management

1.7 Scope of the Study

Nepal Water Supply Corporation has been chosen as sample among various public enterprises. Hence, the finding could not be extensively generalized to the existing public enterprises of the country. The research study will depend on the Nepal Water Supply Corporation. On the basis of this study we can imagine that the cash management of public enterprises of Nepal.

1.8 Limitations of the Study

As every research has its own limitations, this study is not biased. Basically the research is done for the partial fulfillment of Master in Business Studies program of Tribhuvan University. So, it has some limitations, which are listed below.

- Time constraint and unavailable of primary and secondary data on time might be limit the detail and depth of the study
- The study is mainly dependent on secondary data covering data of 10 years (2055/2065).
- Time and financial constraint are also the major limitation of the study.
- The study is based on the cash management of NWSC therefore the result may not applicable to other enterprises.
- The study is concentrated in cash transaction of NWSC It does not cover its other area.

- The researcher being the beginner in this area, this report cannot remain without flaws. Best effort has been done to make this report with minimum error. Being almost impossible without error, existence of unnoticed errors is also a major limitation of the study.

1.9 Significance of Study

Cash management is one of the most important functions in any organization. It is broad area having to do with the collection, concentration and disbursement of cash including measuring the level of liquidity, managing the cash balance and short-term investments. A proper cash management considerably contributes to improve the overall financial performance and leads the organization towards success. An organization cannot achieve its goal unless cash is controlled effectively and capital is allocated properly. Proper cash management helps an organization to manage the cash cycle efficiently with control and to forecast cash flows in multiple time periods. Also the study of and the concept of cash management helps the manager to plan for the unforeseen eventualities that nearly every organization and every business faces.

NWSC plays vital role to provide pure drinking water for many urban and rural area's people. The research on this enterprise will be beneficial for the same enterprise to know actual existing each management and financial performance and help to improve the financial performance. This research will be helpful to government to make different plans and policies regarding public enterprises as well.

1.10 Organization of the Study

The study is organized in sequence of five chapters which are presented in short as under.

Chapter – I Introduction

Chapter one will be introductory, background information on the subject matter of research, introduction of NWSS, introduction of cash management, efficient cash management practice in PES, statement of problem, object of the study, scope of the study, significance of the study and limitation of study.

Chapter – II Review of Literature

Chapter two deals with the review of literature for cash management, It includes the reviews of related previous thesis and study to find out the existing gap, so past studies in the cash management function as well as the public enterprises are reviewed to find out what new can be contributed. Review of text book thesis /dissertations, and government publication are included in this chapter.

Chapter – III Research Methodology

In this chapter, the research methodology of the study is described. It includes research design, the population and sample, nature and source of data, financial and statistical tools for the analysis of the data.

Chapter – IV Data Presentation and Analysis

In this chapter, the acquired data are presented and analyzed through the given in methodology. This is the core of the thesis. The systematic presentation and analysis of financial statements and statistical tools are presented in this chapter.

Chapter – V Summary, Conclusion and Recommendation

At last, in fifth chapter the summary of finding issues and constraints and recommendation are presented.

Reference of the bibliography consists of published and unpublished books, articles and dissertation etc. that the sources of information and will use as

reference. Appendix consists of relevant material when ever, however, how much with mentioning in the main body of the report, include profit and loss account, balance sheet and summary of statistical finding.

CHAPTER - II

REVIEW OF LITERATURE

2.1 Conceptual Framework

2.1.1 Meaning of Cash Management

The term cash has a definition according to the purpose for which it is used and persons with varying branches of knowledge conveying various meaning of cash. For instant, from an economist's viewpoint, cash is the legal tender of money issued by the government of the state which means to satisfy human wants. On the contrary, when it comes to the financial literature cash is defined in yet another fashion that is totally different from earlier definition. However according to the balance sheet, cash is an asset constituting the liquid items among all the assets, in need cash, which has a cost whether received internally through money procurement, is a liability and a wasted opportunity unless and it is not put to its optional use (Saksena, 1974: 54).

So such whether cash a corporation has must be utilized efficiently to meet obligations of interest payment if cash is obtained from borrowing. If it is receive through issue of share, the corporation has responsibility to owner in assuring them to pay favorable rate of return. Since cash is not easy to obtain, the available cash must be prudently spent without incurring loss (Shrestha, 1980: 147).

The term cash with reference to cash management is used in two senses. In a narrow sense broadly to cover cash (currency) and generally accepted equivalent of cash such as cheques, drafts, and demand deposits in bank. The broader view of cash also includes near cash assets. Such as, marketable securities and time deposits in banks. The main characteristic of these is that they can be readily sold and converted in to cash. They also provide a short-term investment out let for excess cash and also useful for meeting planned out flow of funds. We employ the term cash management in the broader sense.

Irrespective of the form in which it held a distinguished feature of cash, as an asset, is that it has no earning power.

The management of cash has been regarded as one of the conditioning factors in the decision making issues. It is no doubt, very difficult to point out as to how much cash is needed by a particular company but it is very essential to analyze and find out the solution to make an efficient use of funds. If any time a company fails to pay an obligation when it is due because of the lack of cash, the company is insolvent. Insolvency is the primary reason firm's go bankrupt. Moreover, efficient cash management means more than just preventing bankruptcy. It improves the profitability and reduces the risk which the firm is exposed. It is only natural that major business expenses are incurred in the production of goods or the provision of services. In the most cases, a business incurs such expenses before the corresponding payment is received from costumers. In addition, employee salaries and other expenses drain considerable funds from most business. These factors make effective cash management an essential part of any business.

Cash Management involves managing the monies of the firm in order to maximize cash availability and interest income on any idle funds. At one end, the function starts when a customer writes a check to pay the firm on its account receivable. The function ends when a supplier an employee or the government realizes collected funds from the firm on account payable or accrual (Van Horn, 1991:394).

Cash management has certain variables, which are directly related to cash. Diagram of cash flow and its related variables are shown (Blecke, 1981: 50).

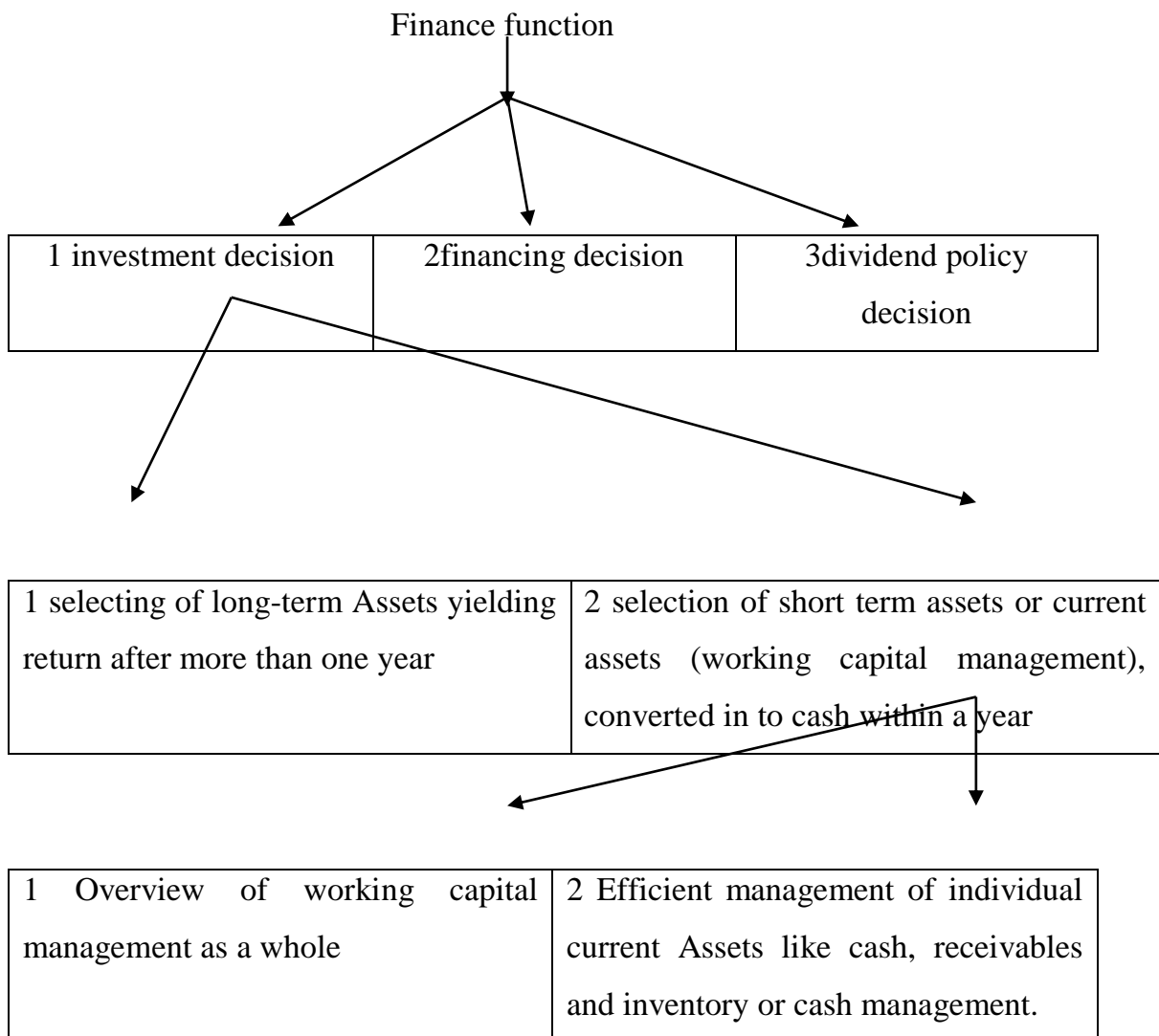
So, simple stating, management of near-cash assets, i.e. marketable securities, time deposits in bank are called management. Broadly speaking, the management of cash includes management of cash, receivables and inventory.

In broader sense, management of receivable and inventory is also termed as management of cash because receivables and inventory are also supposed to readily converting in to cash (Khan and Jain, 1986, p663-664)

2.1.1.1 Cash Management as a Function of Finance

Figure 2.1

Cash Management, A Function of Finance



(Source: Khan and Jain, 1986)

According to modern approach, financial management can be broken down in to three major decisions as functions of finance, which are:

- Investment Decision
- Financial Decision
- Dividend Decision

2.1.1.2 Cash Management Function Comes Under Investment Decision

Investment decision refers to two major decisions

- A. Selection of long term assets, which will yield a return over a period of time in future, i.e. more than a year, and
- B. Selection of short term assets or current assets, which can generally be converted into cash within a year.
- C. The latter function is also termed as working capital management which is concerned with the management of current assets. The two basic components of working capital are:
 - An overview of working capital management as a whole, and
 - Efficient management of the individual current assets like cash, receivable and inventory.

Cash management deals with the second component of working capital management, the management of cash or near-cash assets such as marketable securities and time deposits in banks, receivable and inventory

2.1.1.3 Principles of Cash Management

The size of cash balance in hand in account to be maintained depends on the behavior of operation cash flows of the firms. Each business operation is unique in the matter of cash collection and disbursement as such a firm needs to follow cash management strategies based on its own financial strength and objective in the matter of cash management. Financial managers are mainly concerned with the a) management of cash receipt. b) management of disbursement c) minimization of cash balance through the determination of optimum balance d) use of most inexpensive source of financing for cash balances and e) investment of excess balance of cash.

The standard principles of cash are as follows:

- To collect account receivable as soon as possible without establishment annoying and loosing potential customers by establishment a system of lack boxes electronic funds transfer, preauthorizes checks and deposit concentration
- To delay payment as long permitted without demanding the firms credit rating by establishing controlled disbursement system
- To minimize cash balance without adversely affecting the business operation by following the techniques to cash balance management such as Baumol and Miller Orr- models.
- To manage must inexpensive source of financing for meeting short term cash defacing by optimally balancing between cost and risk.
- To investment short term excess cash which is most efficient market portfolios of securities such as money market instruments (Pradhan, 1992:98).

2.1.1.4 Motives for Holding Cash

Cash is the common denominator to which all other current assets can be converted into readily or in near future and thus it is the most liquid current asset.

Kenes in his book has explained cash, when held, as an asset has no earning capacity. Never the less business firms have to hold cash for three different motives, which are:

- Transaction motive
- Precautionary motive and
- Speculative motive

In addition of three motives for holding cash, compensating motive is also a Motive of holding cash.

- **Transaction Motives**

The transaction motive requires a firm to hold cash to conduct its business in the ordinary course. The firm needs cash primary to make payments for purchases, wages, others operating expenses, taxes, dividends etc need to hold cash would not rise if there were perfect synchronization between cash and receipts and cash payment has to made. But cash receipts and payments are not perfectly synchronized. For that period when cash payment exceeds cash receipts the firm should maintain some cash balances to be able to made required payment. For transaction purpose, a firm may invest its cash in marketable securities, whose maturity corresponds with some anticipated payments, such as dividends or taxes in future. Notice that the transaction motive mainly refers to holding cash to meet anticipated payments whose timing is not perfectly matched with cash receipts.

- **Precautionary Motives**

The precautionary motive is the need to hold cash to meet contingencies in future. It provides a cushion or buffer to withstand some unexpected emergency, the precaution amount of cash depend upon the predictability with accuracy; less cash will be maintained for an emergency the amount precautionary cashes also influence by the firm's ability to borrow as such notice when the need arise.

- **Speculative Motive**

The speculative motive relates to the holding of cash for investing in profit making opportunities as an when they arise. The firm will hold cash, when it is expected that interest rates will arise and security prices will fall securities can purchased when the interest rate is expected to fall, the firm will benefit by the subsequent fall in interest rates and increase in security price (Pandey, 1999: 841).

- **Compensating Motive**

It is to compensate banks for providing certain services and loans. Usually, clients are requested to maintain a minimum balance of cash at the bank. Since this balance of cash at the bank by the firm for trisection purpose the banks they can use the amount to earn to return. Such balances are compensating balances.

Compensating balance is also required by some loans arrangement between a bank and its customers during period when the supply of the credits is restricted and interest rates are raising, banks require a borrower to maintain a minimum balance in his account a condition precedent to the grant of loan. This is presumably to compensating for a raise in the interest rate during the period when the loan will be pending.

These four are primary motives of holding cash balances. The two most important motives are transaction motives and the compensation motives. Business firm do not normally speculate and need not have speculate balance, the requirement of precautionary balances can be met out of short-term borrowing (Khan and Jain, 2003:302-308).

2.1.1.5 Objective of Cash Management

The basic objectives of cash management are to reconcile two mutually contradictory and conflicting tasks. They are:

- **Meeting Payment Schedule**

In the normal course of business, firm has to make payment of cash as a condition and regular basis to suppliers of good, employees and so on. At the same time, there is constant inflow of cash through collection from debtors. Cash is therefore, described as "oil to lubricate the ever wheels of business without it the process grinds to a stop." A basic of cash management is to meet the payment schedule, which is to have sufficient cash to meet the cash disbursement needs of firm.

- **Minimize Funds Committed to Cash Balances**

In the minimizing, the cash balances two conflicting aspects have to be reconciled. A high level of cash balance will ensure promote payment together with all the advantage. However, it also implies that large fund will remain idle, as cash in nonearning assets and firm will have to go for profit, a low level of cash balances, on other hand, may mean failure to meet the payment, therefore, and should to have an optional amount of cash balances (Khan and Jain, 1978:664).

2.1.1.6 Efficiency of Cash Management

Cash performs a number of functions as it makes payment possible and serves to meet emergencies. But if cash is kept idle it contributes directly nothing to earning of corporation. As such, corporation must adopt such a policy that makes optimum cash management possible. The financial manager of the corporation should try to minimize the corporation holding of cash. The efficiency of cash management, effective method of collection and disbursement should be adopted (Shrestha, 1980:62). The method of efficiency of cash management is briefly described as below:

2.1.1.6.1 Speedy Cash Collection

Efficient cash management is possible only when the collection of cash is accelerated.

Collection process may be speeded up in any of the following manners.

- The mailing time of payment from customers to the firm may be reduced.
- The time during which payments received by the firm remain uncollected may be minimized, it includes the time a company takes in processing the cheques internally and the time consumed in clearance of the cheque through the banking system.

Following techniques are considered to be useful to accelerate the collection.

i) Concentration Banking

To speed up collection, collections should be decentralized as far as possible. If, instead of one collection center, there are number of collection centers for the purpose, collections would certainly be speeded up. This procedure is named as concentration banking. Through this procedure, the mailing time of the customer is reduced. Customers of a particular region may be directed to deposit/remit their payments to a collection center will deposit the payments received in the local bank regularly, which is generally at the firm's head office. This concentration bank or central bank can get the payments by telegraphic transfer or by telex, as per instructions given by the firm. The collection centers may themselves collect the cheques or the cash payment from the customers, instead of customers remitting the payment to the collection centers.

ii) Lock Box System

Under this system, the time required in collecting the payments, processing them and finally depositing them in the local bank accounts is further reduced. Before determining the collection centers a feasibility study is made of the possibility of checks that would be deposited under alternative plans. In this regard operations research techniques have proved useful in the location of lock box sites. A lock box is hired by the firm at each collection center and the customers are instructed to mail through remittance of the box. The remittance is picked up by the local bank directly from the lock box as per instructions given by the firm. The bank can pick up mail several times a day and deposit the checks in the amount of the firm. A record is kept by the bank regarding the checks deposited and is sent to the firm as and when required. The main disadvantages of such system is the cost involved of making such arrangements hiring post office box and loading the bank with additional burden of work entail costs and sometimes it may be uneconomical for the firm to adopt such a system.

iii) Collection Through Messengers

Certain firms like to send messengers at the places of customers to collect the payments. It certainly reduces the mailing time but increase the cost of collection in terms of the travelling costs of messengers.

To conclude, whatever system of speeding up collection is adopted, the costs are to be compared with the benefits derived there from.

2.1.1.6.2 Slowing Disbursement

Disbursement is the opposite of collection. Here, the firm strives to slow down payments. Decentralized collection system is the best way to accelerate collections and centralized payment system is the best way to slow down the disbursements. Delaying the account payable to the extent possible can help the firm only if the firm's credit standing does not suffer. If an effective control over disbursements is exercised without losing goodwill, cash availability is certainly enhanced. There are some techniques to delay are; centralized payments, paying the float and payments on due dates only.

2.1.1.6.3 Cash Velocity

Efficiency of the use of cash depends upon the cash velocity, i.e. level of cash over a period of time.

$$\text{Cash Velocity} = \frac{\text{Annual Sales}}{\text{Average Cash Balance}}$$

2.1.1.6.4 Using Float

Float is an advantage to the firm as a buyer and disadvantage to the firm as a seller. Float is the lag between the time the cheque is written and the time the firm's bank receives it. A firm may have less balance in its bank account but the firm may issue a cheque to its supplier because the supplier would present the cheque to his bank for payment only when he receives it after few days.

2.1.1.6.5 Overdraft System

Overdraft is a system where by deposits may write cheque in excess of their balances with their books automatically extend loan to cover the shortage. Most of the foreign countries use overdraft system.

2.1.1.6.6 Minimum Cash Balance

Corporations are required to keep a minimum cash balance requirement of bank either for service it renders on in consideration of lending arrangement.

2.1.1.6.7 Synchronization of Cash Flows

With a perfect synchronization of cash inflows and outflows and a higher degree of predictability, Cash balance could be held to low levels. An example of synchronization demonstrate as low cash flows can be improved through more frequent requisitioning of fund to divisional offices from the firm's central office. If funds are requisitioned once a month, it helps to explore the possibility of requisitioning of funds on fortnightly, or weekly or daily basis. Moreover, effective forecasting can be achieved; it will enable the firm to economize on the amount of money it must borrow and thereby keeping interest expenses to a minimum.

2.1.1.6.8 Transferring Funds

There are two methods for transferring funds, Check Wire Transfer and Electronic depository transfer. With a Wire transfer, funds are immediately transferred from one bank to another even in a different city. It is the fastest way to move cash between banks, eliminating transit float. An Electronic Depository transfer check is a paperless electronic image transfer via the Automated Clearing house network. The EDTC avoids the use of the mails and has a uniform one business-day clearing time. Electronic Depository Transfer checks are generally initiated by central company management.

2.1.1.6.9 Special Holding of Cash

To meet the standards of the line of business in which firm is engaged, and to take the advantage of the available business opportunities, the firm may like to

have sufficient cash balance. Credit standing can be maintained if the firm has sufficient cash. Certain companies maintain cash balance to take advantage of the trade discount and cash discounts, which may be available to them on the basis of the terms of sale. Emergencies like strikes, floods, fire etc can be met out successfully only when the firm has sufficient liquidity.

2.1.1.7 Techniques for Effective Cash Management

2.1.1.7.1 Cash Planning

Cash planning can help anticipate future cash flows and needs of the firm and reduces the possibility of idle cash balance and cash deficits. The nature of business, credit position, the amount of sales, time required in conversion of accounts receivable etc are determine the normal cash requirement of a firm. Cash plans are very crucial in developing the overall operating plans of the firm. Cash planning may be done on daily, Weekly, or monthly basis. It depends upon the nature, size and status of the business and philosophy of management. “Cash planning is a technique to plan, for and control the use of cash” (Pandey, 1999:483). Therefore costs may be based on the present operations or anticipated future operation.

2.1.1.7.2 Cash Forecasting and Budgeting

Cash budget forecast is the most significance device to plan and control cash receipt and payments. A cash budget is a summary statement of the firms expected cash inflows and outflow over a projected time period. Cash forecasts are needed to prepare cash budget. Cash forecasting may be done on short term or long term basis. Generally, forecasts covering period of one year or less term cash forecast are:

- To determine operating cash requirement.
 - To anticipate short term financing.
 - To mange investment of surplus cash.
-
- **Receipt and Disbursement Method**

The prime aim of receipt and disbursement forecast is to summarize these flows during a predetermined period. In case of these companies where each items of income and expenses involve flows; this method is favored to keep a close control over cash.

- **Adjusted Net Income Method**

This method of cash forecasting involves the tracing of working capital flows. It's sometime called sources and uses approach. These are two objective of adjusted net income method. They are to Project Company's need for cash at a future date and to show whether the company can generate the required fund internally, and if not how much will have to be borrowed or raised in the capital market. It is a projected cash flow statement based on Performance financial statement. One popularly used method of protecting working capital is to use ratios relating account receivable and investing to sales.

- **Sensitivity Analysis**

One useful method of getting insights about the variability of cash flow is sensitivity analysis. Cash budget can be prepared under three conditions, they are optimistic, most probable and pessimistic. Knowledge of the outcome of extreme expectations will help the firm to be prepared with contingency plans. A cash budget prepared under worst conditions will prove to be useful to management of face these circumstances.

- **Long Term Cash Forecasting**

Forecasting those extending beyond one year are considered long term. Once a company has developed long-term cash forecast, it can be used to evaluate the impact of say, new product development or plant acquisition on the firm's financial condition four years in the future. The major uses of long-term forecasts are:

- To indicate as company's future financial needs especially for its working capital requirement
- To evaluate proposed as well as. Its pinpoint the cash required to finance these projects as well as the cash to be generated by the company to support them.
- To improve corporate planning long term cash forecast compel each division to plan for future and no formulate project carefully (Pandey, 1999:843).

2.1.1.7.3 Optimum Cash Level

The firm should decide about the appropriate level of cash balances. The cost of excess cash and danger of cash deficiency should be matched to determine the optimum level of cash balances.

2.1.1.7.4 Managing the Cash Flows

The flows of cash should be properly managed. The cash should be accelerated while, as far as possible the cash should be declared.

2.1.1.7.5 Investment Surplus Cash

The surplus cash balance should be properly invested to earn profits. The firm should decide about the decision of such between alternatively short term investment opportunities such as bank deposits, marketable securities, or incorporate lending (Pandey, 1997:89).

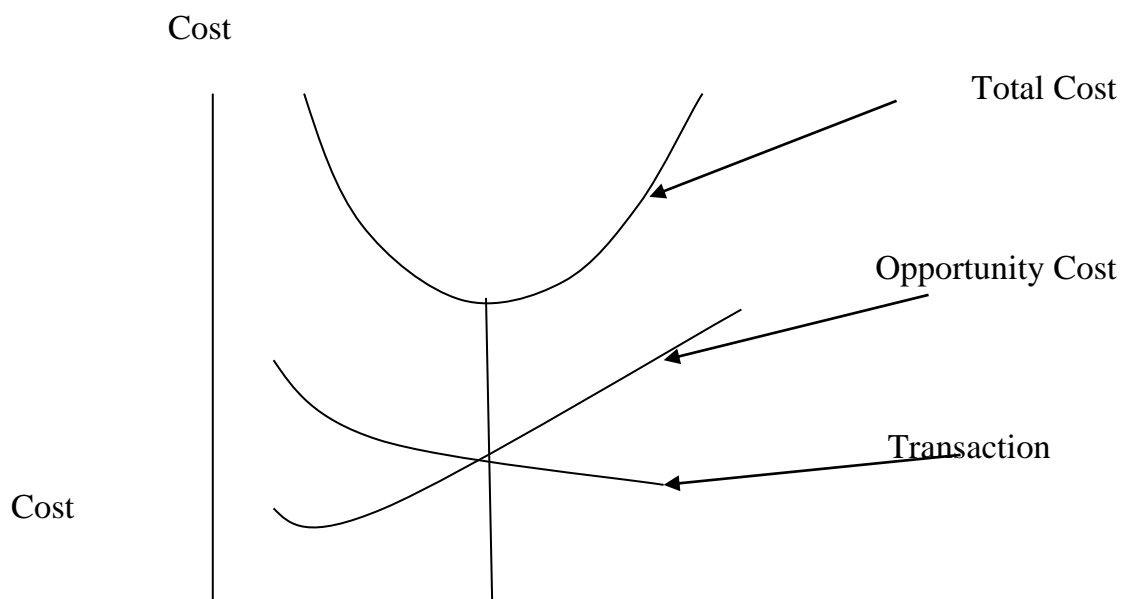
2.1.1.8 Determination of Optimum Cash Balance

One of the primary responsibilities of the financial manager is to maintain a sound liquidity position of the firm so that dues may be settled in time. The firm needs cash not only to purchase raw materials and pay wages, but also for payment of dividend, interest, taxes and countless purchase. The text of

liquidity is really the available of cash to meet the firm's obligations when they become due.

Thus cash balance is maintained for transaction purpose and an additional amount may be maintained as a buffer or safety stock. The financial manager should determine the appropriate amount of cash balance. Such a decision is influenced by tradeoff between risk and return, if the firm maintains a small cash balance its liquidity position becomes weak and suffers from paucity of cash to make payment. But a higher profitability can be attained by investing released funds in some profitable opportunities. When the firm runs out of cash it may have to sell marketable securities. If available to borrow. This involves transaction cost. On the other hand, if forgo the opportunity to earn interest. The potential loss on holding large cash balance involves an opportunity cost to earn interest. The potential loss on holding large cash balance involves an opportunity cost of the firm. Thus cash balance sounds with the opportunity cost of too large a balance. It can be shown by following graphs.

Figure 2.2
Cash Balance



Cash Balance

(Source: Pandey, 1992)

If the firm maintains large cash balances its transaction cost would decline, but the opportunity cost would increase. At point x the sum of the two cost is minimum. This is the point of optimum cash balance which a firm should seek to achieve, where is to minimize the total costs.

2.1.1.9 Cash Management Models

Boumol's Model (1952)

This model developed by William Boumol. Essentially applies a basic inventory model to determine the minimum cost amount of cash that a financial manager can obtain by converting securities to cash, considering the cost of conversion and the counter balancing cost of keeping idle cash balance which otherwise could have been invested in marketable securities. The total cost associated with cash management, according to this model, has two events. They are a) cost converting marketable securities into cash and b) cost opportunity cost. As such, the firm attempts to minimize the cost of holding cash. The conversion costs are included each time marketable securities are converted into cash.

$$\text{Total Conversion Cost Period} = \frac{TB}{C}$$

Where,

B = cost per conversion assumed to be independent of the transaction.

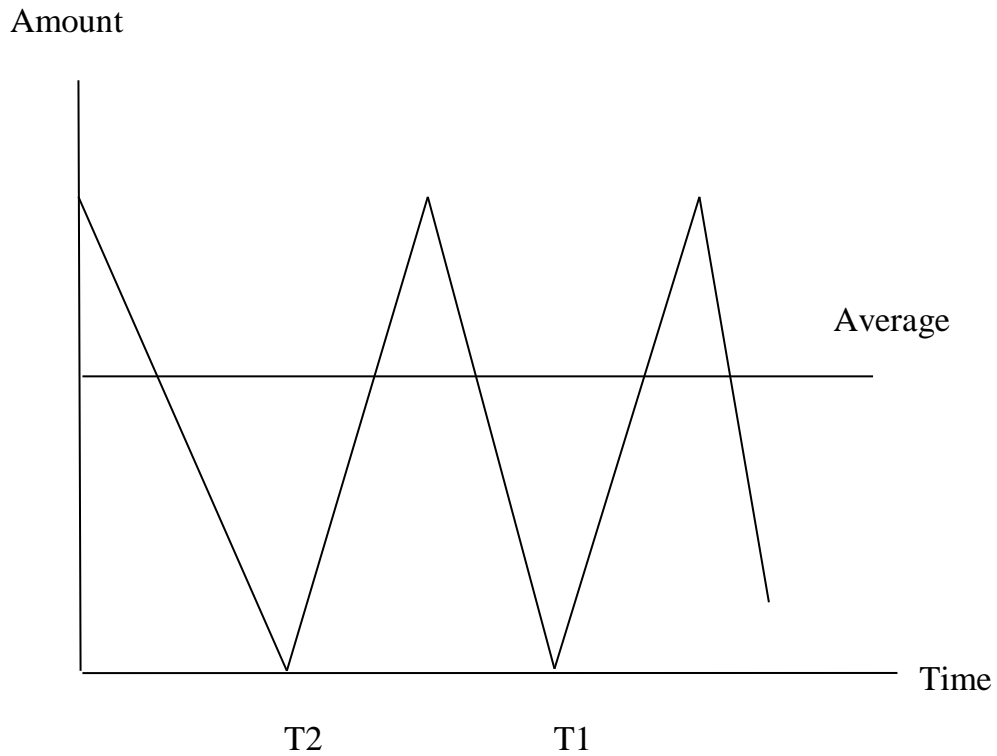
T = total transaction needs for period.

C = value of marketable securities sold at conversion.

The opportunity cost is derived from the cost/ for interest rate 1) that could have been entered on the investment of cash balances. Total opportunity cost in the interest rate times the average cash balance kept by the firm. The model assumes as constant and certain pattern of cash out flows. At the beginning of

cash period, the firm starts with until at the end of the period it has zero cash balances and must replenish its each supply to the level of cash in the beginning, which is shown graphically as:

Figure 2.3
Boumol's Model for Optimum Cash



Mathematically,

$$a) C^* = \frac{\sqrt{2bt}}{I}$$

Where C^* = The optimal size of the cash transfer

T = Total cash uses wage for the period of time involved

B = The cost of transaction in the purchases or sale of marketable securities

I = The applicable interest rate on marketable securities

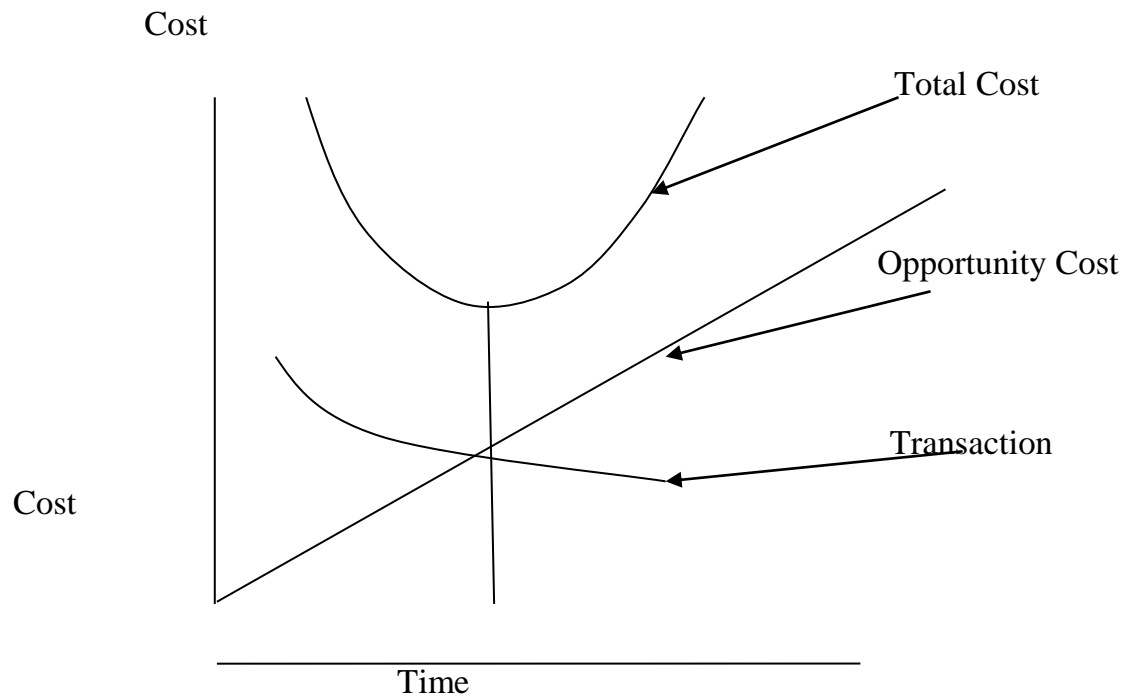
$$b) \text{Average Cash Balance} = \frac{C^*}{2}$$

$$c) \text{Number of Optimal Transfer} = T/C^*$$

$$d) \text{Total Annual Cost of Maintaining an Optimal Cash Balance} = T/C^* \times B + C^*/2 \times I$$

Figure 2.4

Cost of Trade Off, Baumal's



(Source: Pandey, 1992)

2.1.1.9.2 Miller Orr Model (Miller and Orr, 1966:413-435)

According to Miller Orr, The objective of cash management is to determine the optimum cash balance level, which minimize the cost management. It assumes that net cash flows are normally distribute with a zero value of mean and a standard deviation, each firms cash flows fluctuate randomly and hit the upper control limit, and then it buys sufficient marketable to come back level of cash balance. Similarly, when the firm's cash flows wander and hit the lower limit, it sells sufficient marketable securities to bring cash balance back to the normal level.

Mathematically

$$Z^* = \sqrt[3]{\frac{3B\sigma^2}{4i} + L}$$

Where,

B=fixed cost for transaction

σ^2 =variance of net daily cash flows

I=Daily interest

$L = \text{Lower limit}$

And average cash balance is comprised as follow:

$$C = 4z^* - L/3$$

Similarly, upper limit is computed by:

$$\text{Upper limit (v)} = 3z^* - 2L$$

$$\text{Purchase strategy} = V - Z^*$$

$$\text{Selling strategy} = Z^* - L$$

Orgler's Model (1970)

According to this model, an optimum cash management strategy can be determined through the use of multiple linear programming models. The construction of the model comprises three sectors. They are: 1) selection of appropriate planning horizon, 2) selection of appropriate decision variable and 3) formulation of cash management strategy itself. The advantage of linear programming model is that it enables coordination of optimum cash management strategy with other operation of the firm such as production and with less restriction on working capital balances.

Orgel,s objective function is to minimize the horizon value of the net revenues from the cash budget over the entire planning period. The objective function recognizes cash operation of the firm that generates cash inflows of outflows on adding or subtracting profit operation. In the objective functions, decision variables which cause inflow, such payments on receivable, have positive coefficient while decision variable which generate cash inflows, such as interest and short term borrowing have negative coefficient that the financial managers first specify an objective function and then specify a set of constraint.

The constraint of the model could be 1) Institutional or 2) policy constraint. The institutional factors that is, back required compensating balance. Policy

constraints are imposed on cash management by the firm itself. For instance, the financial manager may be prohibited from selling securities before maturity can occur in the model during one monthly period over several or all the months in one year planning horizon.

An example of linear programming model as follows:

Objective Function

Maximum profit: $a_1X_1+a_2X_2$

$b_1X_1 \leq$ Production

$b_2X_2 \leq$ constraint

$c_1X_1+c_2X_2 \leq$ cash available constraint

$d_1X_1+d_2X_2 >$ current assets requirement constraint

$X_1 > 0=1$, in non negatively constraint

A very important feature of the model is that it allows the financial manager to integrate cash management with production and aspect of the firm.

Monte Carlo' (1978)

Although the Boumol model and other theoretical models provides insights into the optimum cash balance, they are generally not for practical use, rather firms generally set their target cash balances based as some "safety stock" of cash that holds the risk of running out of money to some acceptability low level. One commonly used procedure is Monte Carlo simulation. Sales and collection are the driving forces in expected values for sales and collection as well as for other cash flows. However, it budget is constructed using a spreadsheet program with Monte Carlo add in software, then the key uncertain variable could be specified as continuous probability distribution rather point value.

2.1.1.10 Basic Strategies for Cash Management

The cash budget, as a cash management tool, would throw light on the net cash position: the management should work out the basic strategies to be employed to manage its cash.

Cash Cycle

The financial needs of the corporation are affected by the details of the cash cycle involved in the process of conversion from purchase, production and sales to ultimate collection. Opportunities to improve cash cycle helps in best management of cash. The cash cycle of the corporate is as follows (Soloman and Pringle, 1978:417-478)

Figure 2.5
Cash Cycle

A	B	C	D	E	F	G	H	I
---	---	---	---	---	---	---	---	---

(Source: Soloman and Pringle, 1978:417-478)

Figure No.2.4: Details of Cash Cycle

Where,

- A= Material Order
- B= Material received
- C= Payment
- D= Check clearance
- E= Goods sold
- F= Customer Mail Payment
- G=Payment received
- H=Check deposited
- I= Funds collection

In addressing the cash management strategies, we are concerned with their time period involved in strategies ABC and DEFG. A firm has no control over time involved between D and E is determined by the production process and

inventory policy. The time period between stages E and F is determined by the production process and inventory policy of customers.

Minimum Operating Cash

The higher the cash turnover, the less is the cash a firm requires. A firm should therefore try to maximize cash turnover. But it must maintain a minimum amount of operating cash balance so that it does not run out of cash, the minimum level of operating cash is determined by dividing the total operating. Annual out lays by the cash turnover rate. Cash management strategies that can be employed to do the needful and as follows:

- Stretching account payable
- Efficient inventory, production management
- Spending collection and account receivable
- Combined cash management strategy

2.1.1.11 Cash Conversion Cycle

The cash conversion cycle model diagrams the length of time between when the company makes payment and when it receives cash. The following terms are used in the model.

- Inventory conversion period
- Receivable collection period
- Payable deferral period

The cash conversion cycle net outs this period thus equals to the length of time between the firm actual cash expenditures for productive resources and its own cash receipt from the sale of production. The cash conversion cycle equals the average length of time dollar tied in current assets.

$$CCC=ICP+RCP-PDP$$

Where,

CCC=Cash conversion cycle

ICP=Inventory conversion period

RCP=Receivable conversion period

PDP=Payable deferral period

The cash conversion cycle can be shortened i) if the firm can reduce the inventory conversion period by processing and selling goods quickly. ii) if it can reduce the receivable collection period by speeding up collection. iii) if it can lengthen the payable deferral period by showing down its payment. To take extents that these actions can be taken without increasing cost of depressing sales they should be carried out.

2.2 View of Different Authors Regarding Cash Management

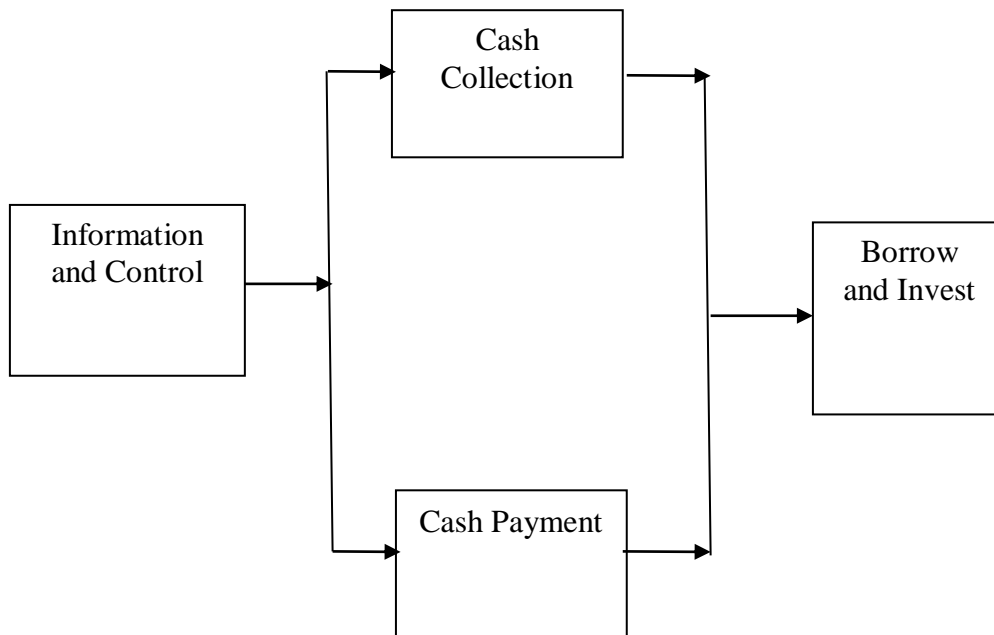
Various scholars as well as authors have given different views regarding cash management some of them are follows:

Cash is only one constituent of what is essentially a combination of business resources. It is the part of working capital and as such provides the means of earning of profit investment for business. The objective should aim to obtain an optimum level for each component of current assets figure and a smooth and rapid conversion of these assets to cash both of these leads to improve earning power. He again suggested consequences. In the short term it will be possible to cut back expenditure on marketing and other function, but future sales will probably suffer and consequently, there will be further denotation in cash flow. Further. He defined cash management as the process involved in the effective planning and control of cash management of a business (Batty, 1972).

Pandey (1993) suggested that the firm should keep sufficient cash neither more nor less. Cash shortage will disrupt the firm's manufacturing operation while excessive cash will simply remain idle, without contributing anything toward, the firm's profitability. According to him, the main function of financial manager has presented by him. He said that cash management is concerned with the managing i) cash flow into and out of the firm ii) cash flow into and within

the firm and iii) cash balances hold by firm at point of time by financing deficit or investing surplus cash. It can be represented by a cash management cycle. Sales generate cash, which has to disburse out. The surplus cash has to be invested while deficit has to be borrowed. Cash management seeks to achieve liquidity and control. Cash management assumes more important than other current because cash is the most significant and the least productive asset that a firm holds. It is significant because it is used to pay the firm's obligation. However cash is unproductive. Unlike, fixed assets or inventories it does not produce goods for sale. Therefore the aim of cash management is to maintain adequate control over cash portion to keep the firm sufficiently liquid and to use excess cash in some profitable way. The management cycle is shown as follows:

Figure 2.6
Cash Management Cycle



The management of cash is also important because it is difficult to predict cash flows accurately, particularly the inflows, and that there is no perfect coincidence between inflows and outflows of cash. During some period, cash out flows will exceed cash outflows because payment to taxes, dividend or seasonal inventory buildup. At other times, cash inflows will be more that cash payment inflows will be more that cash payment because there may be large cash sales and debtors, may be realized in large sum promptly. Cash management is also important because cash constitutes the smaller portion of the total current assets. Yet management considerable time is devoted in managing it, in recent past, a number of innovations have been done in cash management techniques. An obvious aim of the firm now a day is to manage its cash affairs in such a way as to keep cash balance at a minimum level to invest the surplus cash in profitable investment opportunity.

Jain and Narannng (1993) have described about cash management. He said that cash is crucial component of working capital of a concern ash like blood stream of human body, gives strength to business unit. He explained that cash is ultimate resource for a business. Therefore, management of cash business

unit should end ever to focus large cash at the end of cash working capital cycle then what it had at the beginning of working capital cycle. Further, the important object in managing cash should be trade of liquidity and profitability in order to maximize profits. By keeping large amount of cash of the firm is able to maximize profits. By keeping large amount of cash, the firm is to meet its obligation when they fall due and the risk of technical insolvency is reduced. However, cash is non-earning asset so unnecessary cash should not be kept as hand then the business efficiency. Liquidity and the same time maximize its profitability. They also stress that business transaction, without involvement of cash is mythical in this monetary world. Today the important of cash management is recognized by all segment of organization activities, If some of departments are handled independently without considering there implication of cash management are bound to create serious problem. The study of cash management is therefore considered as an integrated approach to management science.

Simmons and Kerrenbrock (1964) expressed that cash is more after than other assets, is the item involved in business traction. This is due to nature of business transactions, which include a price and condition calling for settlement in terms of medium of exchange.

In striking constant to activity of cash is unproductive in nature. Some cash is measured of values it cannot expose to grow unless it is converted into other properties. Excessive balance of cash on hand is often referred to as 'idle cash'. To be most useful to business enterprise, cash must be kept moving.

Hampton (1989) has given more suggestion for effective management of cash. He explained that net working capital is the adequacy of near cash to meet the firm's obligation. The highly liquid firm has sufficient cash to pay its bills at all time. An illiquid firm is unable to pay its bills when due. The investment of excess cash, minimizing of inventory, speedy collection of receivables, and

elimination of unnecessary and costly short term financing all contribute to maximizing the value of firm. In a period of high interest rate customer may be slow in paying their bills a fact that will be cause an increase in the level of sales , variable working capital may be changed.

Khan and Jain (2003) explained that cash management linkage with working capital management. A part from the fact is the most liquid asset, cash is the common denominator to which all current assets is receivable and inventories get eventually converted into cash. This underlines the significance of management cash , i.e. motive for holding cash objective of cash management, factor determine cash needs, cash management of cash and specific techniques to manage cash subsequently.

Shrestha (1980) has described some conceptual ingredients about cash management, which is based on his various research studies. We can learn lesson from it and also helpful for this study indeed. He adjusted the relation of cash with sufficient and in sufficient corporations. It does not matter whether cash inverses of devices of they are not in position to utilize them, but efficient corporations due to undertaking of more operations need more besides cash besides having profit.

Weston and Bringham (1978) have poured some views about cash management after their various studies on it. The bond conceptual finding of their studies provides sound knowledge and guidelines for the motives for holding cash, specific advantage of adequate cash synchronization of cash management, determine cash balance, compensating balances, marketable securities. Substitute for cash criteria for setting securities investment alternatives.

Van Horn (2002) has presented the knowledge about cash management. He said that cash management involves managing the money of the firm to maximize the cash availability and interest income to any idle funds. At one

end the function starts when a customer writes check to pay the firms its current receivable. The function ends when supplier, an employ or government realize collected fund from the form as amount payable or accruals. All activities between these two point fall within the real cash management. the firms efforts to get customers to pay their bills at a certain time fall within account receivable management on other hand, the firms decision about when to pay its bills involves account payable and accrual management. He again described an idea of cash, we should attempt to accelerate collection and disbursement of cash, we should attempt to acceleration collection and handle disbursement so that maximum cash is available. Collection can be accelerated by means of concentration banking a lock-box system and certain other procedures. Disbursement should be handled to give maximum transfer flexibility and the optimum timing of payment being mind full however of supplier relation. Methods of controlling disbursement i.e. electronic fund transfer are becoming increasingly important and most corporations use such transfer in one way or another.

Bringham, Gapenski and Ehrhard (2001) have described some conceptual insights which are be based on various research studies. They believed that case is offered called "non earning assets". It is needed to pay for pay labor and row material to buy fixed assets to pay taxes to survive debt to pay taxes to survive debt to pay dividend and so on. However, cash itself earn to interest. Thus the goals of the cash managers are to minimize the amount of cash. The firm must hold for sue in conduction its normal business activities. Yet, the same time, to have sufficient cash i) to take trade discount ii)to maintain its credit rating, and iii)to meet unexpected cash needs.

Pradhan (2004) explained about cash and its management. He told that cash includes coins, currencies, cheque hold by a firm, and balance in its bank account. This money is immediately useable to pay bills. Some time 'hear cash items" are also included in cash, e.g. marketable securities. If the firm has

excess cash, it may decide to convert it to short-term investment. The financial manager will purchase low risk; high liquidity money market instrument that can be converted bank to cash without delay if the need arise. The securities provide a small profit on cash that may not be needed immediately for the firms operation. These securities offer different characteristic that make it suitable for different characteristic that makes it suitable for the firms. He said cash management is also or currently in hand but also the readily convertible securities or other near cash items, e.g. time and demand deposits, readily available credit and so on. According to him concerning area of cash management are:

- Management of cash flows into and out of the firm
- Management of cash flow within the firm
- Management of cash balance held by the firm at a point of time.

Weston and Copland (1992) suggested about cash management firm various study and research. They said that relatively high level of interest rates have developed new techniques for optimizing cash balance and determining the appropriate relation between holding cash holding investment in marketable securities.

2.3 Review of Related Studies

In this section an attempt has been made to review some journals, thesis/dissertation and other related publications related to cash management.

2.3.1 Review of Journals

Baumol (1952), at his article "*The Transaction Demand for Cash: An Inventory Theoretic Approach*" on quarterly journal of economic (Vol. LXV) identifies cash maintenance as analogues to inventory and demonstrates that the model of economic order quantities that is applicable to inventory management is perfectly applicable in cash management too. He has presented model in view of minimizing the opportunity cost of holding cash and maximizing the return on available funds, the cash balance should be

maintained at a minimum level and the funds not required from immediate use be invested in the marketable securities.

Miller and Orr (1996), in their article "*A Model of the Demand for money in firms*" on quarterly journal of economic, (Vol. LXV) have developed a model known as Miller-Orr model, that takes into account the realistic pattern of cash flows and prescribed when and how much to transfer from cash to investment account and vice-versa.

Saksena (1974), at his article, "*Towards More Efficient Cash Management*" on quarterly journal of management quality (Vol.No. 5) identified that the term cash management has a meaning according to the purpose for which it is used and persons with varying branches of knowledge implies various meaning of cash. Economics considered cash, as the means to satisfy human want, the lawyer the view that cash is legal tender money issued by a determinate authority. However, our concern of the meaning of cash is an asset constituting the most liquid item among all the assets. But to obtain cash involves cost because corporation has to rise through issue to share or by borrowing with interest. In through generation money market procurement is liability and wasted opportunity unless it is not put to its optimal use.

Miltzer (1963), adjudged wealth as an explanatory variable of cash balance determination and sales as the measure of wealth. He hypothesized that the amount of money held by firms is the function of the market rate of interest and wealth. He concluded that "the results suggest strongly that the cross-section demand for money by firms is a function of sales, to a first approximation linear in the logarithms and unit elastic."

Whalen (1965), in his article "*A Cross Section Study of Business Demand for Cash*" on journal of finance, has found the speculative demand for money may be considered as a function of wealth. Assets and sales are the explanatory

variables to determine the cash balance of the firm. Since Whalen attempted to incorporate assets as well as transactions into the demand function, the analysis presented by him in order to determine the cash holding of the firm differed from Miltzer's model. He hypothesized that the cash holding of the firm is not only for transaction purpose but also as an investment.

Sprenkle (1967), in their article "*Large Economic Units, Banks and the Transactions Demand for Money*" on quarterly journal of economic, (Vol. LXXX, 436-442) have assumed that money had all the attributes of ordinary inventories goods.

Vogel and Maddala (1967), assumed that the demand for cash, government securities and liquid assets is a function of wealth determination. According to them the firm is assumed to allocate its financial holdings among assets so as to equalize the marginal rates of return, adjusted for risk involved. The results differ from Miltzer only in that Meltzer estimated the demand equation for individual industry for each year, whereas, Vogel and Maddala employed the dummy variables end estimated pooled regression with yearly data. They had also included assets as an explanatory variable in the demand for money equation and determined the economics of scale.

2.3.2 Review of Previous Research Work

The basic concept of cash management has been searched into this section of literature review. Textbook there have been prescribed under studies are the primary source of data under my study dissertations. After various research studies on cash management when browsed through computer record of these reports presented earlier in Tribhuvan university central library.

Sainju (2003), entitled "*A Cash Study of Royal Drugs*" conducted the poor cash management practices of Royal Drugs limited.

She conducts that:

- Overall cash management practice has been found disappointing
- Overall liquidity position of the firm has been found moderately dissatisfactory
- Overall, yearly cash inflow and out flow in RDL is not been properly employed. Surplus cash has not been properly employed to earn return by investing in short term investment opportunities.
- Profitability has been found in very weak position.
- Overall cash budgeting practice of RDL is very poor.

On this study payable deferral period investing conversion period and receivable collection period and their aggregate effect as cash management has not been identified i.e. cash conversion cycle of the company has not been identified which helps to analyzed overall status of collection of cash in an organization.

Neupane (2004), conducted the study of "*Cash Management in Nepalese Public Enterprises: A Case Study of Salt Trading Corporation Limited*". He had noticed some issues and constraints while analyzing the management of cash in STCL, which are as follows:

- Absence of forecast and plan: It is observed that the cash management is least concerned to forecast of cash for the coming period. The cash forecasting is completely lacking in the corporation. The fluctuating trend of cash deficit reveals the fact clearly.
- The lack of accurate and proper sales forecast is one of the important constraints that affect the financial performance of the corporation. If the corporation forecasts the expected sales accurately, it can manage the various activities accordingly.

- The quality of management itself is a scarce factor in STCL. The performance of STCL exhibits that the management lacks basic knowledge of financial management.
- Restrictive credit policy is one of the important constraints that affected the sales volume of the corporation. If it adopts liberal credit policy, it can increase the sales volume and the receivable turnover by employing a very restrictive credit policy.
- Due to certain constraints in management, STCL denied to provide information except balance sheet and profit and loss account, which are not sufficient for analysis of cash management.

He had concluded that 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.

Kunwar (2005), conducted a research topic "*Cash Management of Manufacturing Companies.*" He has studies cash management of five manufacturing companies. Nepal leer Ltd. Nepal lube Oil Ltd., Bottler Nepal (Terai) Ltd., Nepal Bansaspati Ghee Ltd., and Raghupati Jute Mill Ltd. Major objectives of the study are to identify the liquidity position, relationship of cash with other influencing variable of cash and Analysis of cash conversion cycle.

Major finding of the study are mention as under:

Listed manufacturing companies don't have any definite policy regarding how much cash balance to hold in each period. Companies have not been hold in each period. Companies have not been able to trade of liquidity and profitability. The CR and NPM are found with insignificant correlation. Companies are not been able to collect cash in considerable time span. The average cash conversion cycle of manufacturing companies have not been

obtain to be 114 days. Due to the high inventory conversion period the result was not satisfactory.

Conclusions derived from this research are cash management be the major element of financial function. It is said that main function of financial manager is to apply better technique to improve cash management in companies. There is other numerous aspect of finance involves in the overall financial performance addition of a firm. in addition to this, the overall performance of a firm counts for other management aspects. Such as human resources management, Organization structure, marketing management etc. however all down falling trend of financial position is indication of the fact that listed manufacturing companies should immediately seek for drastic change in its managerial structure. So far cash management is concerned the recommended and suggested above could to a great extent, uplift the listed manufacturing companies' cash management situation.

He recommended manufacturing companies should try to reduce cash conversion cycle. Cash conversion cycle of the companies has been found to be higher. However RCP and PDP have been found to be considered period. Inventory conversion period was found too long. High level of inventory has affected to make CCC longer. It is recommended that the companies should improve their inventory management system. Manufacturing companies should try to trade off liquidity and profitability in order to increase profit.

Shrestha (2005), conducted a research on the topic, "*Cash Management in Public Manufacturing Enterprises of Nepal: A Case Study of Royal Drugs Limited*". His major objective is to examine the management of cash in RDL. The other objectives of this study are to make the analysis of cash flow of RDL, To examine the liquidity position of RDL and to analyze the cash budgeting practice. From the study he had found that the current assets and quick assets are not being maintained in accordance with current liabilities and

large portion of RDL's current assets has been tied up in the most liquid asset i.e. inventory. He had suggested adopting the following recommendation for better cash management.

- Recommend to maintain optimum cash balance every year.
- Recommend to prepare cash flow statement
- Recommend not tie-up current assets in unsaleable inventories
- Maintain optimum current assets variables and current liabilities every year.

Chataut (2008), conducted the study on “*Cash Management in Nepal Telecom*”. The objectives of his study are as follows:

- To observe devices of planning and control of cash in NT.
- To examine the existing internal control policy in NT regarding cash control practices.
- To identify the shortage of excess of cash in the company and the procedures of financing for the shortage and investment of excess cash.
- To study the liquidity position of the company.
- To analyze the gap between budgeted and actual sources and uses of cash and its trend.
- To review cash flow from operating, financing and investing activities.
- To suggest and recommend NT based findings.

Bhandari (2008), conducted the study on “*Cash Flow Analysis of Nepal Telecom*”. The main objectives of his study are as follows:

- To analyze the trend of cash flow of NTC.
- To identify the strengths and weakness of cash management of NTC.
- To reflect ability to generate cash flow in future periods
- To provide suggestions and recommendations for future improvement of cash flow and cash management.

According to his study he concluded that,

- Regular financing activities of NTC are long term debt receipt/payment, dividend payment and repayment of retained earning to Nepal Government.
- Operating profit before adjustment of working capital is in positive growth for every year.
- There is not scarcity of cash during the period to operate its general activities.
- Overall activities are satisfactory.

Ban (2009), conducted the study on “*Cash Management in Public Manufacturing Company: A Case Study of Bottlers Nepal Limited*”. The objectives of his study are:

- To study of existing cash management system in BNL.
- To critically review the cash management technique practiced by BSNL.
- To suggest appropriate cash management policy for the future.

The major findings, which may be drawn on the basis of this study are as follows:

- Cash Management in the BNL is primarily based on the practices lacking in scientific approach.
- 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.
- No optimum cash balance is maintained. The cash and bank balance with respect to current assets is in the fluctuating trend.

Shrestha (2009), conducted the study on “*Cash Management Practices in Nepal Telecom*”. The major objective of the study is to examine the

management of cash in Nepal Telecom. The major findings of his study are as follows:

- Public sector enterprises play backbone role for economic development of the nation.
- The main sources of cash of NTC are international trunk telephone, local telephone and domestic trunk telephone both of PSTN and mobile.
- The actual cash balances were higher than approved budgeted amount. It shows that there was no effective implication of budgeted amount.
- When comparison is made between actual cash source and actual cash uses, there was big deviation resulting surplus. So, it shows that budget was not implemented properly and surplus was not used in productive investment.
- Total budgeted sources involved closing cash balance of previous year, external and internal source. Internal source of cash was main portion of the total cash source to meet the budget.
- Current ratio shows that NTC is efficient in maintain the good liquidity position.
- Cash flow analysis shows strong financial position of the company.
- Cash budgeting practice of NTC is poor.

Nepal telecom is non-manufacturing company and most of its transaction is done in cash basis. It is one of the major contributors to the revenue of the government. Besides this, stakeholders have various level of interest on the company. Cash management of Nepal Telecom; a service oriented company has great importance in overall planning and control of the company. So this is legitimate reasons for studies in some aspects of cash management practices of NTC and the researcher has chosen this topic of interest. The researcher mainly focuses the study on the analysis of cash budget, cash position, surplus/deficit, liquidity position and internal control policy regarding cash management practices of the company.

2.4 Research Gap

The review of above relevant literature has contributed to enhance the fundamental understand and knowledge, which is required to make study meaning and positive.

There has been lots of article published related to management of Public Enterprises. There are various researches conducted on cash management of Public Enterprises. While reviewing other studies on cash management analysis related to public Enterprises. The researcher found that the ratios are not properly analyzed. What actually the ratios indicate is not clear. So, this study has tried to analyze the different ratios in order to make fruitful analysis on the cash management of Nepal Water Supply Corporation.

Apart from this study will be fruitful to those interested person, parties, scholars, professor, students, businessman and government for academically as well as policy perspective. Hoping that, this study will help to others in the related field.

CHAPTER - III

RESEARCH METHODOLOGY

The basic objective of this study is to analysis the cash management of the NWSC. A methodology state the method with data has been used in interpretation of such data is to fulfill the objectives. Thus in this chapter, research design, the population and the sample, nature and sources of data and processing procedure tool and techniques which are required for cash management to analysis data will be presented.

3.1 Research Design

This study is a case study research of NWSC. Historical data last ten fiscal years from fiscal year 2055/56 to 2064/65 of the corporation have been the basis of this study. The balance sheet and profit and loss account for last ten years have been compared to analyze the cash manage of the corporation.

3.2 The Population and Sample

Total public enterprises in Nepal are total of 36 (according to economic survey 2005/6) NWSC is one of them. So the existing numbers of public manufacturing enterprises in Nepal refers to the population and Nepal Water supply Corporation, the sample. Since NWSC is the oldest public manufacturing company. It is most 59 likely to represent all other public manufacturing enterprises, However, this is a case study and thus the finding could not be extensively generalized to all other public, manufacturing enterprises.

3.3 Nature and Sources of Data Collection

This study will be based upon the secondary data. Basically secondary data will be collected from annual report which comprises the financial statements such as balance sheet, profit and loss account. Thus this will be the main source of data and other necessary data concerning with thesis research authorized staff at center office of NWSC, Tripureswor Kathmandu. Some of these data will be from published and unpublished sources. The balance sheet and profit and loss account will be obtained for the last ten years.

3.4 Financial and Statistical Tools and Techniques

To find out the true picture of "Cash Management" of NWSC the financial and statistical analytical tools will be used. For quantitative analysis of secondary data are as follows:

3.4.1 Ratio Analysis

The relationship between two calculating figures are expressed mathematically is known as a financial ratio large quantitative figure.

3.4.1.1 Current Ratio/Liquidity Ratio

Current assets includes cash and those assets which can be converted into cash within a year such as marketable securities debtors and inventories, prepaid expenses and current liabilities includes creditors, bills payable accrued expenses, short term borrowing, income tax and term debt in the current year.

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

Current Ratio of 2:1 as more is considered satisfactory

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

Quick Ratio is most liquid assets. A financial analyst may examine this ratio. Trade investment as marketable securities are equivalent of cash, therefore, they may be including in the computation of cash ratio.

3.4.2 Turnover Ratio

3.4.2.1 Cash Turnover Ratio

Cash turnover ratio explain how quickly the cash is received from the sale or in other words it measures the speed with cash more through an company's operation, cash turnover ratio is obtained by the following formula:

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

3.4.2.2 Inventory Turnover Ratio

This ratio indicates the number of times inventory is converted in sales during the year.

$$\text{Inventory Turnover} = \frac{\text{Sales}}{\text{Average Inventory}}$$

$$\text{Inventory Conversion Period} = \frac{\text{Sales}}{\text{Closing Inventory}}$$

It indicates that the gap of the period which the inventory to be sold in each time of conversion.

3.4.2.3 Receivable Turnover Ratio

Receivable turnover or debtors are converted into cash. In other words, the receivables turnover ratio is the test of liquidity of debtors of a firm.

$$\text{Receivable Turnover Ratio} = \frac{\text{Sales}}{\text{Account Receivable}}$$

$$\text{Receivable conversion period/Average collection period} = \frac{\text{Days in a year}}{\text{Receivable Turnover Ratio}}$$

The higher turnover ratio and shorter the receivable collection period, the better is trade credit management and the better is the liquidity of the debtors as short collection period and higher turnover ratio imply prompt payment on the part of debtors. On the other hand, Low turnover ratio and long collection period reflect delayed payment by debtors. In general, therefore, short collection period is preferable.

3.4.3 Cash and Bank Balance to Other Aspects

3.4.3.1 Cash and Bank Balance to Current Liabilities

It indicates the cash balance available with the firm in meeting payment of current liabilities. Moderately higher ratio indicates good liquidity. Too high and too low ratio both are unfavorable for the firm since too high indicates excess cash balance held idle, too low ratio means the firm unable to meet current liabilities.

Symbolically,

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

$$\text{Cash and Bank Balance to A/C Payable} = \frac{\text{Cash \& Bank Balance}}{\text{Account Payable}}$$

3.4.3.2 Cash and Bank Balance to Total Assets

It indicates the position of cash with relation to total assets. It measures ratio of productive assets with unproductive assets moderately high is best. Too much high measures the idle cash which is losing opportunity income and vice versa.

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

3.4.4 Net Profit Margin Ratio

It indicates the percentage of net profit under sales where higher ratio is good for a company.

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

3.4.5 Return on Working Capital Ratio

Return on working capital ratio shows the profit generate by working capital where higher ratio is favorable.

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

3.4.6 Net Profit after Tax to Quick Assets Ratio

It indicates the proportion of quick assets to earn profit. Higher return shows the good management of quick asset to generate the net profit.

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

3.5 Statistical Tools

Regression is the statistical tool which is used to determine the statistical relationship between two (or more) variables and make estimation (or prediction) of one variable on the basis of other variables. It helps to calculate the unknown value of one variable can be estimated on the basis of known values, the more accurate the estimated value is the unknown variables to be estimated is called dependent variable and the known variable is called independent variable. Correlation analysis indicated to what degree the variables are related the variables are related.

Regression line of 'X' variable on 'Y' variable i.e. (X on Y)

$$X - \bar{X} = b_{yx} (Y - \bar{Y})$$

Regression line of 'Y' variable on 'X' variable i.e. (Y on X)

$$Y - \bar{Y} = b_{xy} (X - \bar{X})$$

Where

\bar{X} and \bar{Y} = Arithmetic means of X and Y series respectively.

$$b_{yx} = \frac{N \sum XY - \sum X \sum Y}{N \sum X^2 - (\sum X)^2}$$
$$b_{xy} = \frac{N \sum XY - \sum X \sum Y}{N \sum y^2 - (\sum y)^2}$$

3.5.1 Straight –Line Trend

This is one of the time series analyses, which gives the best estimate of one variable for any value of other variables, which is analyzed specially for the average mathematical relationship between two variables.

In this method, a trend line $Y_c = a + bX$ is fitted to the given data such $\sum(Y - Y_c) = 0$ and $(\sum Y - Y_c)^2$ is least.

Where,

Y_c = value of y computed from relationship for a given 'x'

a = Numerical constant measures the distance of the fitted line directly above or below the origin or y - intercept

b = Numerical constant which measures the change in y per unit change in x .

The value of a and b can be found out by solving the following numerical equation.

X = Time in case of time series analysis.

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

$$\sum XY = n \sum X + b\sum X^2$$

Where,

N is the number of years or any period, on which the data are given, the normal equations are obtained by using above conditions and some mathematical manipulations

3.5.2 Karl Pearson's Coefficient of Correlation (r)

Correlation analysis in the statistical tools generally used to describe the degree which our variable is related to another. This tools is used for measuring the intensity or the magnitude of linear relationship between two variable X and Y is usually denoted by 'r' can be obtained as:

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

Where,

N = no of observation in series X and Y

$\sum X$ = Sum of observation in series X

$\sum Y$ = Sum of observation in series Y

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

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

$\sum XY$ = Sum of the product of observation in series X and Y

However in this thesis work, while computing correlation coefficient, the above formula has been used only once manually. For rest of the computations will be done. The value of r lies between +1 to -1. Value +1 refers the positively relationship between two variables and -1 refers to the negatively correlated between two variables. And near to 0 is refers no correlated between two variables. Together with Karl Persons coefficient of correlation, probable error (PE) of the correlation coefficient is also computed. This probable error of correlation coefficient is the basis for the interpretation of its value. It is given by

$$P. E. = 0.6745 \frac{1 - r^2}{\sqrt{n}}$$

Where,

PE = Probable error of correlation coefficient

N= Number of pair of observation

r = correlation coefficient

It is used in interpretation whether calculated value of 'r' is significant or not.

1. If $r < P.E.$, it is insignificant. So, perhaps there is no evidence of correlation.
2. If $r > P.E.$, it is significant.
3. In other cases nothing can be concluded.

When $r < PE$, the value of r is not statistically significant at all, i.e. there is no evidence of correlation. $r < 6PE$, the value of r is significantly i.e. practically. But when $PE < r < 6 (PE)$ the value of r is inconclusive as to statistically significant/insignificant correlation. The upper limit and lower with in which the correlation coefficient is expected to lie are given by:

$r + PE$ (upper limit) and

$r - PE$ (Lower Limit) respectively

But when r is of negative value i.e. $-1 < r < 0$ in order to compare r with PE which is always in positive value, r modulus i.e. $|r|$ is calculated. $|r|$ is nothing but is the positive value r itself for example if r is calculated as $r = 0.5$ then $|r| = 0.5$

3.5.3 Standard Deviation

Standard deviation measures the scatter, spread or variation and provides idea of the homogeneity or heterogeneity of the distribution. Out of various methods of studying dispersion such as Rang, Inter quartile range and quartile most popular method is the standard deviation and variation and variance method.

Standard deviation is represented by the symbol sigma (σ) and is given by:

$$SD (\sigma) = \frac{\sum(x-\bar{x})^2}{N}$$

Where,

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

In conjunction with standard deviation coefficient of variation (CV) is also computed which is relative measure based on standard deviation to the mean expressed in percent.

Coefficient of Variation

CV calculated by:

$$CV = \frac{\bar{X}}{\sigma}$$

The ratio σ / \bar{X} is called coefficient of variation. CV has no unit. Distribution with lower CV is said to be less variables (or more) consistent or more uniform

and the distribution with higher CV is indicative of more variable or (less consistent or less uniform) The limitation of using CV is that when distributions being compared have negative observation, It provides underline way to compare variability across data sets.

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

This chapter includes analysis of data collection and their presentation with reference to various readings and literature reviews in their preceding chapters. To meet the objectives, which is stated in chapter I is to have true insight in to ‘Cash Management of Nepal Water Supply Corporation. For accomplishment of these objectives, a definite course of research methodology has been followed, which is described in chapter III. Now in this study, the effort has been made to access and analysis the cash management to disclose the actual position of cash management in NWSC.

In this chapter, efforts have been made to process the obtained data from Nepal Water Supply Corporation, presentation, analysis and interpretation them by the use of methodology. The available data which are collected and tabulated in the appropriate categories on the basis of their homogeneous nature, These tabulated data are analyzed with the help of financial, statistical and cash management tools are finally interpreted to explore the facts.

4.1 Analysis of Cash and Bank Balance

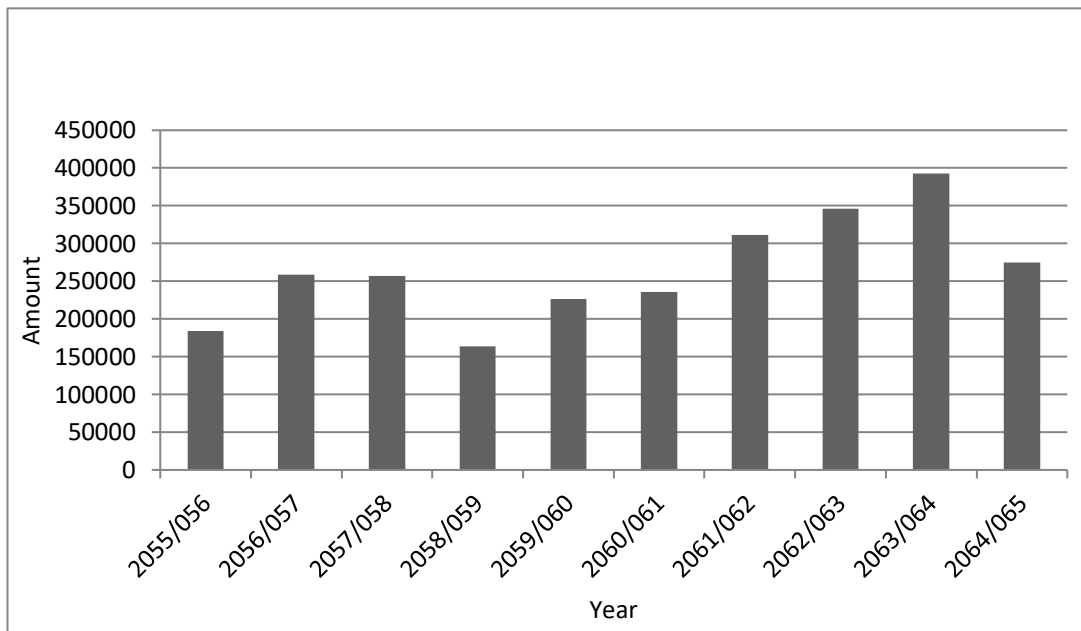
Holding of optimum cash balance is the rational cash management practice of a business form. Total cash balance refers to the cash in hand, cash at bank and cash in transit, near cash assets such as marketable securities and time deposit in bank. In this way management of cash plays a significant role in current assets of NWSC. Following table shows the amount of cash and bank balance of NWSC during the period under study. The cash balance of each fiscal year has been compared to preceding year analyze fluctuations.

Table 4.1
Analysis of Cash and Bank Balance

(Rs. in thousand)

FY	Cash and Bank Balance	Increase /Decrease (%)
2055/056	184402	0
2056/057	258569	40.22
2057/058	257050	-0.59
2058/059	163435	-36.42
2059/060	226244	38.43
2060/061	236083	4.35
2061/062	311413	31.91
2062/063	346103	11.14
2063/064	392682	13.46
2064/065	274971	-29.98
Average	265095.2	

Figure 4.1
Analysis of Cash and Bank Balance



From above table and chart, we can analyze trend of cash and bank balance as under. In fiscal year 2055/56, the cash balance of the company is Rs 184402 thousand, which is increase by only 40.22 %, to Rs. 258569 thousand in the following year. In this way above table and figure show that the cash balance of next year is going to be sharply decreased by 0.59% in the fiscal year 2057/058 as compared to preceding year, such trends come up to fiscal year 2058/059 by -36.42% and in fiscal year 2059/060 the cash and bank balance

increase by 38.43%. Likewise there is increase in cash balance in 2061/062 by 31.91 and that after the cash balance in FY 2062/ 63 is in increasing trend. From next i.e. FY 2063/64 it is increase by 13.46%. In FY 2064/2065, the cash balance is sharply decreased by 29.98%.

However, most deviation in increment of cash balance occurred in 2056/057 when the company holds cash by 258569 thousand and the most deviation in decrement of cash balance occurred in 2058/059 by 36.42%.

Such fluctuation states that decision regarding holding cash balance at year end is rather a haphazard decision without any substantial logic and policy. Regarding cash balance, it is current asset. Holding more cash indicates passive decision (policy). Likewise holding less current asset is aggressive decision (policy). But vast fluctuation is found.

4.1.1 Analysis of Dispersion in Cash and Bank Balance

Table 4.2
Dispersion in Cash and Bank Balance

(Rs. in thousands)

F/Y	Cash and bank balance(X)	$(X - \bar{X})$	$(X - \bar{X})^2$
2055/056	184402	-80693.2	6511392526
2056/057	258569	-6526.2	42591286.44
2057/058	257050	-8045.2	64725243.04
2058/059	163435	-101660.2	10334796264
2059/060	226244	-38851.2	1509415741
2060/061	236083	-29012.2	841707748.8
2061/062	311413	46317.8	2145338597
2062/063	346103	81007.8	6562263661
2063/064	392682	127586.8	16278391534
2064/065	274971	9875.8	97531425.64
Total	2650952		44388154028

$$\text{Mean } (\bar{X}) = \frac{\sum X}{N} = \frac{2650952}{10} = 265095$$

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum(X-\bar{X})^2}{N-1}} = \sqrt{\frac{44388154028}{10-1}} = 70228.32$$

Above calculation shows that NWSC held cash without any basic policy i.e. some time so high some time very low, the standard deviation has been found Rs. 70228.32 which indicates that there is no normal degree of uniformity in holding cash balance in the fiscal year ends.

Calculation of coefficient of variation (CV) further shows that whether the uniformity or homogeneity of cash balance held id poor, good or excellent.

$$\text{Coefficient of variation (CV)} = \frac{\sigma}{\bar{X}} \times 100 = 26.49\%$$

Lower CV means higher consistency or higher stable cash balances where as higher CV indicates just opposite situation. In this way, the CV off NWSC i.e. 26.49% definitely signifies that the homogeneity in holding cash balance is poor.

4.1.2 Cash and Sales

4.1.2.1 Analysis of Cash Turnover Ratio

The following table shows that cash turnover during the study period of NWSC.

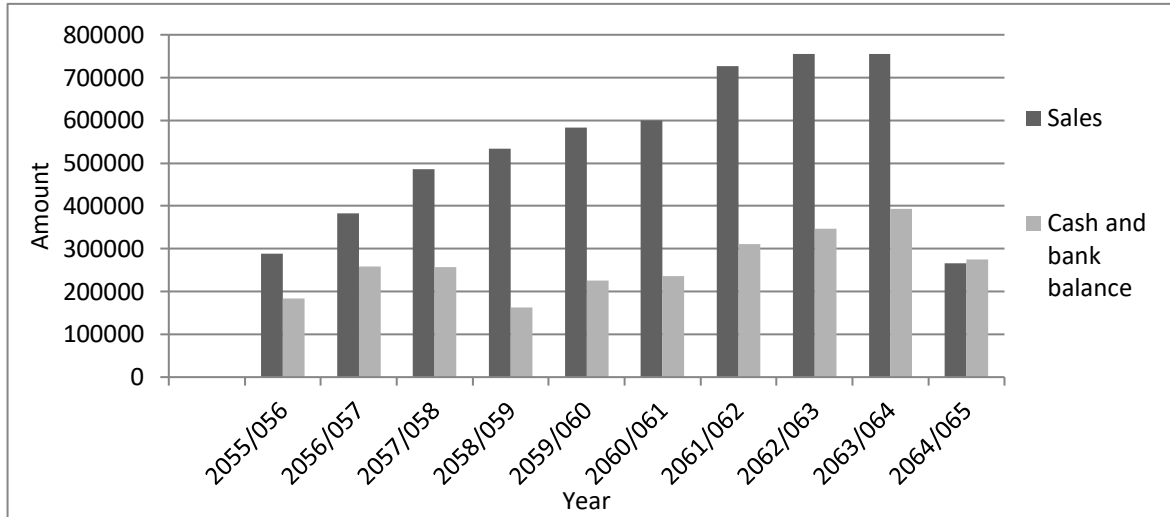
Table 4.3
Analysis of Cash Turnover Ratio

(Rs. in thousands)

F/Y	Revenue	Cash and Bank Balance	Ratio(times)
2055/056	287809	184402	1.56
2056/057	382523	258569	1.47
2057/058	486667	257050	1.89
2058/059	533961	163435	3.26
2059/060	582706	226244	2.57
2060/061	598894	236083	2.53
2061/062	726478	311413	2.33
2062/063	755619	346103	2.18
2063/064	755958	392682	1.92
2064/065	265907	274971	0.96
Average			2.067

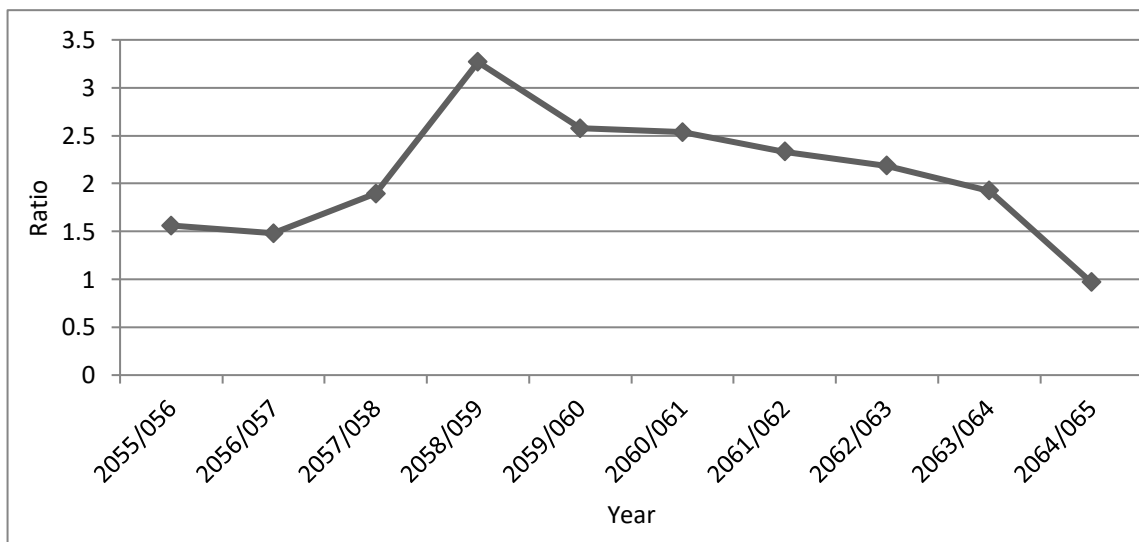
There is fluctuations have been observed in cash turnover ratio analysis. The fluctuations of cash turnover ratio is the indication of no definite policy holding cash balance in relation to sales volume, is applied by NWSC. The average cash turnover ratio of NWSC is 2.067.

Figure 4.2
Analysis of Cash Turnover Ratio



Where the higher ratio is 3.26 times has been observed in FY 2058/59. Likewise, the lowest ratio of 0.96 times has been observed in FY 2064/65. In FY 2058/59, 2059/60, 2060/61, 2061/62 and 2062/63, the cash turnover shows the higher than average and remaining all fiscal year i.e. 2055/56, 2056/57, 2057/58, 2063/64 and 2064/65, the cash turnover shows the lower than the average. This shows that cash turnover is not so fluctuation in NWSC.

Figure 4.3
Analysis of Cash Turnover Ratio



4.1.2.2 Analysis of the Relation between Cash and Bank Balance and Revenue

To analyze the relationship between cash and bank balance and Revenue, Karl Person's correlation coefficient has been determined as general rules i.e. if revenue grows higher, the cash balance held tend to be higher too and vice versa. Generally, cash balance held and revenue volumes are positively correlated.

Table 4.4
Correlation between Cash and Bank Balance and Revenue

F/Y	Revenue	Cash and Bank Balance
2055/056	287809	184402
2056/057	382523	258569
2057/058	486667	257050
2058/059	533961	163435
2059/060	582706	226244
2060/061	598894	236083
2061/062	726478	311413
2062/063	755619	346103
2063/064	755958	392682
2064/065	265907	274971
Correlation Coefficient (r)		0.607
Probable Error (P.E)		0.043
6 × P. E.		0.256

Source: Annual Reports of NWSC (2055/56 to 2064/065 and Appendix 1)

The calculated correlation between sales and cash and bank balance has been observed to be 0.607. Generally, it indicates the positive relationship between sales and cash and bank balance. To make confirm, whether it is real or not for NWSC, it is compared with probable error. The probable error multiplied by six found to be 0.256. Since $r > 6 * PE$, it is significant and there is significant correlation between cash and bank balance.

4.2 Analysis of Liquidity Position

Liquidity of a firm indicates the position to meet its current short-term obligation when it becomes due for payment. Therefore, in cash management, the study of liquidity position of an enterprise constitutes an important role. If a

firm is adequately liquid or solvent, the short-term creditors are interested in such firms and therefore such firms get their short-term requirements easily. However, too much liquidity or in other words, holding more than enough cash an indication of mismanagement of cash balance such cash balance remained other meeting payments would remain idle. So an optimum liquidity is to necessity of the firm.

The liquidity ratio measures the liquidity of enterprise to meet their short term obligations and reflect the short term financial strength of a firm.

4.2.1. Analysis of Current Ratio

One of the reliable methods to examine liquidity position of a company is by means of current ratio. It is calculated by dividing current assets by current liabilities, which is a measure of the firm's short-term solvency. The standard current ratio is to measure by 2:1. If the ratio is higher than 2, it is very comfortable for the creditors but it is the indicator of idle funds and the ratio is less than 2, difficulty may be experienced in the payment of current liabilities and day to day operations of the business may suffer.

Thus too much reliance should not be placed on the current assets should be carried. However, the current ratio is a crude and quick measure of the firm's liquidity. The current ratio of NWSC is shown as under.

Table 4.5
Analysis of Current Ratio

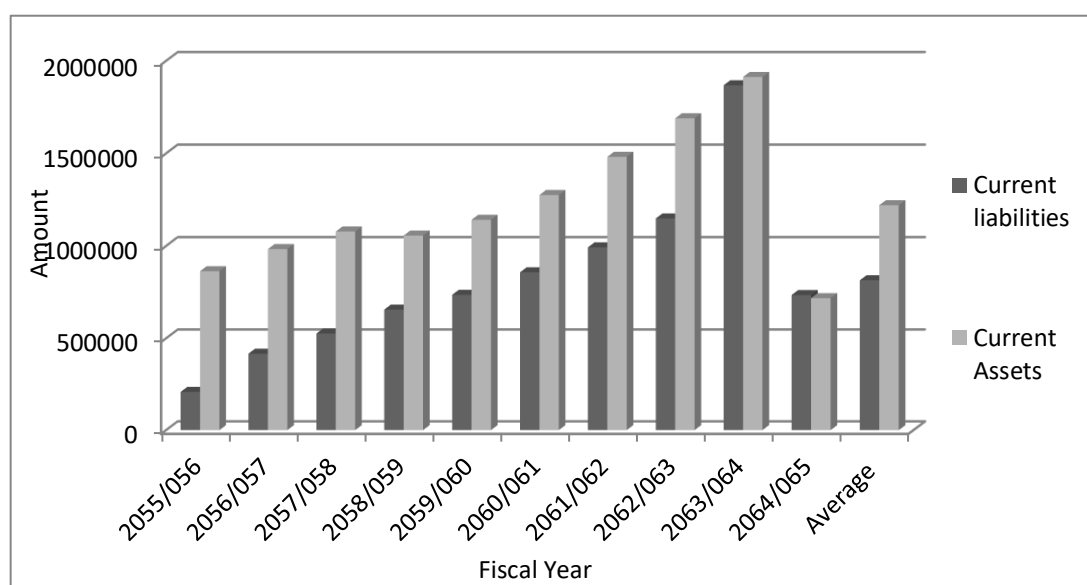
(Rs in thousand)

Fiscal Year	Current Assets	Current Liabilities	Ratio (Times)
2055/056	863333	208252	4.15
2056/057	982970	416175	2.36
2057/058	1077909	525891	2.05
2058/059	1056131	655954	1.61
2059/060	1141260	735655	1.55
2060/061	1275089	857546	1.47
2061/062	1481586	992420	1.49
2062/063	1689762	1148268	1.47
2063/064	1912819	1868361	1.02
2064/065	717824	734723	0.98
Average	1219868.3	814324.5	1.82

Source: Annual Reports of NWSC (2055/056 to 2064/065)

Figure 4.4

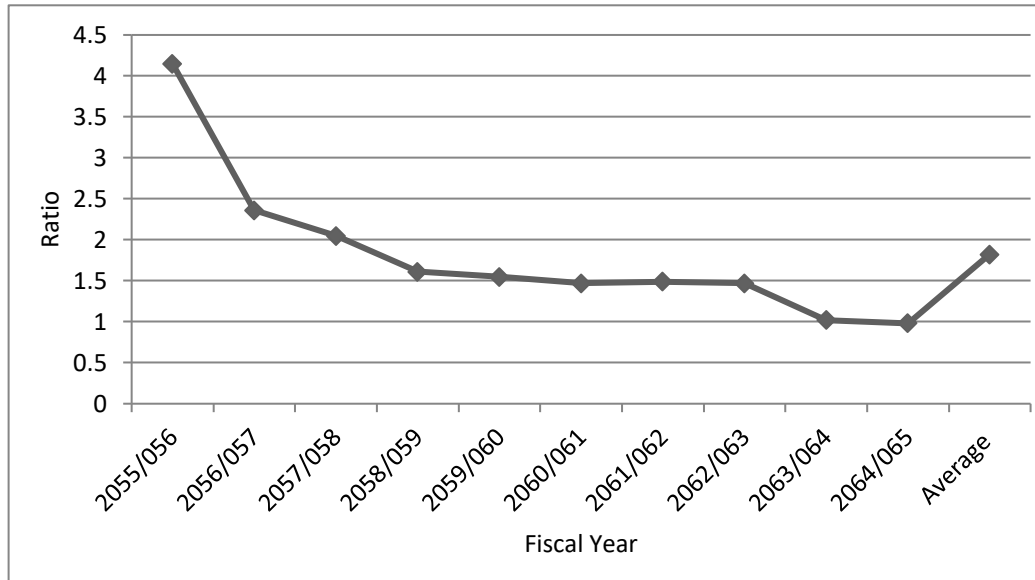
Analysis of Current Assets and Liabilities



Above table and figure indicates that there might have been prevailed a little bit slack management practice. The figure shows that the average current ratio is 1.82, which is normally less than the satisfactory level; however satisfactory level is 2:1.

Overall, the average ratio signals a little bit unsatisfactory position of the NWSC, which should be little bit above the average ratio to reach near to 2:1.

Figure 4.5
Analysis of Current Ratio



4.3 Profitability Analysis

A company should earn profits to survive and to grow over a long period of time. Profits are essential, but it would be wrong to assure that every action initiated by management of a company should be aimed to maximize profits, irrespective of social consequences. It is unfortunate that word 'Profit' is looked upon as a maximize profits at the cost of employees, customers and society. Expect such infrequent cases, it is a fact that sufficient profits must be earned to sustain the operations of the business to able to obtain funds from investors for expansion and growth and to contribute towards the social over heads for the welfare of the society. The profitability ratios are calculated to measure the operating efficiently of the firm. Creditors want to get interest and repayment of principal regularly; owners want to get a reasonable return on their investment. This is possible only when the company earns enough profit.

4.3.1 Analysis of Net Profit Margin Ratio

It measures the relationship between the net profit and sales and indicates management efficiently in manufacturing administering and selling of the firm's ability to turn each rupee sales into net profit.

Table 4.6

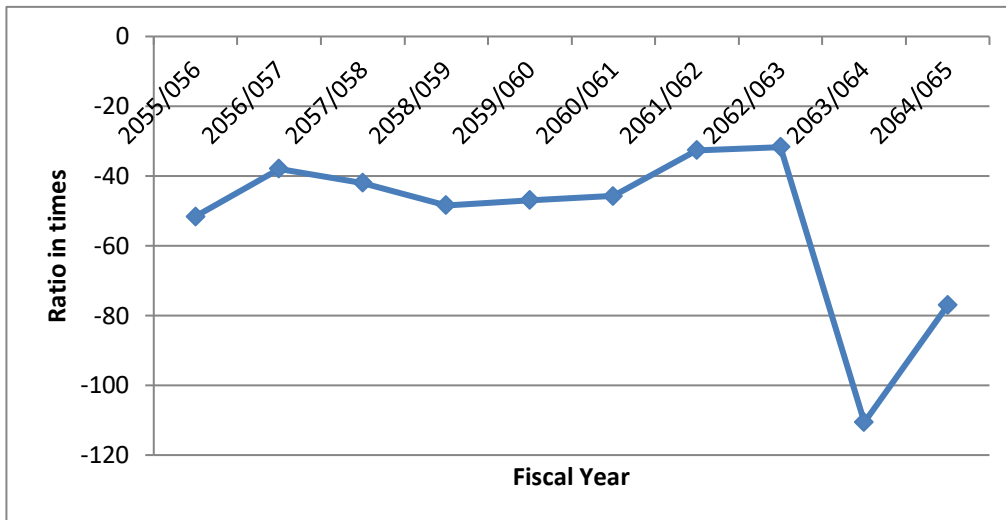
Analysis of Net Profit Margin Ratio

F/Y	Revenue	NPAT	Ratio (%)
2055/056	287809	-148653	-51.65
2056/057	382523	-145115	-37.94
2057/058	486667	-204296	-41.98
2058/059	533961	-258443	-48.40
2059/060	582706	-273318	-46.90
2060/061	598894	-274118	-45.77
2061/062	726478	-236970	-32.62
2062/063	755619	-239728	-31.73
2063/064	755958	-836184	-110.61
2064/065	265907	-204746	-77.00
Average	537652.2	-282157.1	-52.46

Source: Annual Reports of NWSC (2055/056 to 2064/065)

Figure 4.6

Analysis of Net Profit Margin Ratio



The above figure shows that NWSC has been operating in loss in all fiscal year during the research period. Net profit (loss) margin ratio in FY 2055/56 is -51.65% .Similarly, FY 2056/057 is seen little better because net profit margin is minimum i.e. -37.94%. In FY 2063/064 there was heavy loss i.e. -110.61% but after that year, loss is decreased continuously. Very poor performance has been seen also in FY 2057/58, 2058/59, 2059/060, 2060/061 which are -41.98%, -48.40%, -46.90 and -45.77% respectively.

In overall, NWSC has been operating under loss and the average net profitability margin has been calculated -52.46%.

4.3.2 Analysis of Net Profit after Tax on Current Assets

It is computed by dividing net profit (loss) after tax by current assets. Higher ratio indicates higher utilization of current assets to earn profit and vice versa.

Table 4.7

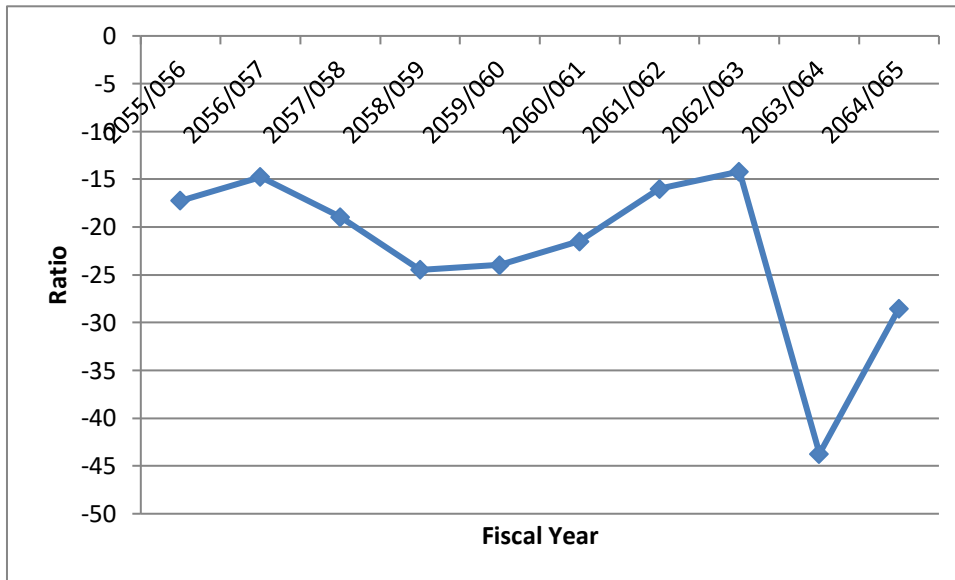
Analysis on Return on Current Assets

Fiscal Year	Current Assets	NPAT	Ratio (%)
2055/056	863333	-148653	-17.22
2056/057	982970	-145115	-14.76
2057/058	1077909	-204296	-18.95
2058/059	1056131	-258443	-24.47
2059/060	1141260	-273318	-23.95
2060/061	1275089	-274118	-21.49
2061/062	1481586	-236970	-15.99
2062/063	1689762	-239728	-14.18
2063/064	1912819	-836184	-43.71
2064/065	717824	-204746	-28.52
Average	1219868.3	-282157.1	-23.13

Source: Annual Reports of NWSC (2055/056 to 2064/065)

Figure 4.7

Analysis on Return on Current Assets



This Analysis shows that NWSC has not utilizing its current assets effectively in earning profit. The overall ratios are dissatisfying, indicating loss in each fiscal year. Overall, the return on working capital i.e. current assets is disappointing indicating drastic downfall of the corporation. The average return on working capital has been calculated as -23.13%.

4.4 Analysis of Relation between Cash and Bank Balances and Current Assets

Cash is the most liquid current assets. More cash indicates the enterprise is capital for facing current obligation but the excess cash always remain idle. So this ratio indicates the proportion of cash balance is the current assets.

Table 4.8

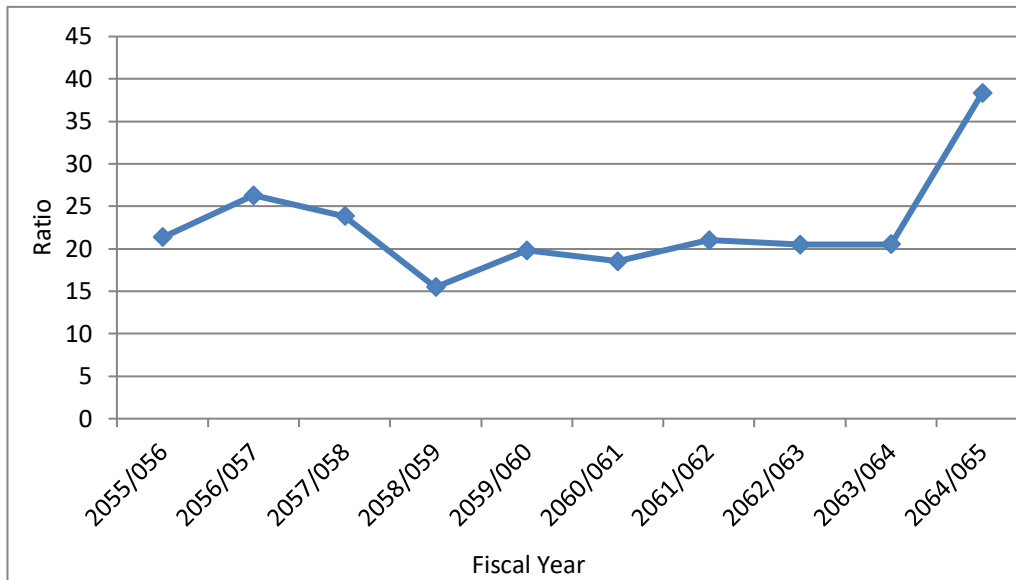
Relation between Cash and Bank Balances and Current Assets

Fiscal Year	Cash and Bank Balance	Current Assets	Ratio (%)
2055/056	184402	863333	21.36
2056/057	258569	982970	26.31
2057/058	257050	1077909	23.85
2058/059	163435	1056131	15.47
2059/060	226244	1141260	19.82
2060/061	236083	1275089	18.51
2061/062	311413	1481586	21.02
2062/063	346103	1689762	20.48
2063/064	392682	1912819	20.53
2064/065	274971	717824	38.31
Average	265095.2	1219868.3	22.57
Correlation Coefficient (r)			0.7743
Probable Error (P.E)			0.027
6 × P. E.			0.162

Source: Annual Reports of NWSC (2055/056 to 2064/065) and Appendix

Figure 4.8

Cash and Bank Balances to Current Assets Ratio



Above calculation shows the proportion of the cash in current assets of NWSC. The lower ratio is 15.47% in FY 2058/059 and highest ratio 38.31% in FY 2064/065. The average ratio of cash and bank balance and current assets is 22.57%. The above ratio indicates NWSC not follow the basic policy about the cash balance in current assets.

Since, coefficient of correlation between cash and bank balance and current assets is 0.7743. This shows that there exists positive correlation between the two variables. To examine its significance, probable error multiplied by six found to be 0.162. Since $r > 6 * PE$, it is significant and there is correlation cash and bank balance and current assets. This implies that there is positive correlation between two variables.

4.5 Analysis of Cash and Bank Balance to Current Liabilities

The analysis of cash and bank balance to current liabilities indicates the proportion of cash balance available to meet the payment of current liabilities. A moderate ratio is considered satisfactory, too high ratio indicates excess cash

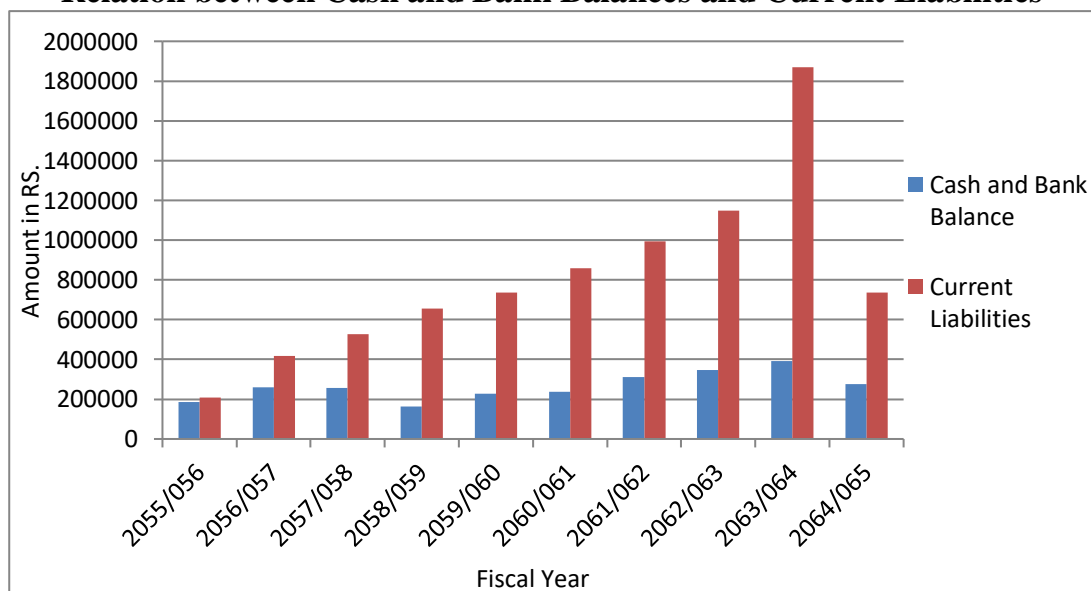
balance held idle and too low ratio is indicative of company being unable to meet its payment of current liabilities in times.

Table 4.9
Cash and Bank Balance to Current Liabilities

Fiscal Year	Cash and Bank Balance	Current Liabilities	Ratio (%)
2055/056	184402	208252	88.55
2056/057	258569	416175	62.13
2057/058	257050	525891	48.88
2058/059	163435	655954	24.92
2059/060	226244	735655	30.75
2060/061	236083	857546	27.53
2061/062	311413	992420	31.38
2062/063	346103	1148268	30.14
2063/064	392682	1868361	21.02
2064/065	274971	734723	37.43
Average	265095.2	814324.5	40.27
Correlation Coefficient (r)			0.8283
Probable Error (P.E)			0.021
6 × P. E.			0.127

Figure 4.9

Relation between Cash and Bank Balances and Current Liabilities



Above calculation shows the fluctuation of ratio occurred from lower 21.02% to 88.55% which indicate the significant cash balance to meet the current obligation. But on the other hand most of the ratios are less than 30% which shows the excess cash and deficit in making payment during the study. It has

clearly indicated that NWSC has not been following a systematic cash management practices.

Since, coefficient of correlation between cash and bank balance and current liabilities is 0.8283. This shows that there exists positive correlation between the two variables. To examine its significance, we can use probable error (PE). The probable error multiplied by six found to be 0.127. Since $r > 6 * PE$, it is significant and there is correlation between cash and bank balance and current liabilities

4.6 Major Findings of the Study

- NWSC have not any definite policy regarding how much cash balance to hold in each period. Cash and bank balance hold during the deferent period of study were observed to be highly fluctuated and thus the fact indicates the definite policy regarding how much of each balance to be hold each period. Average cash balance of NWSC during the study period is 265095200.
- There is fluctuations have been observed in cash turnover ratio analysis. The fluctuations of cash turnover ratio is the indication of no definite policy holding cash balance in relation to sales volume, is applied by NWSC. The average cash turnover ratio of NESC is 2.067.
- Correlation between sales and cash and bank balance has been observed to be 0.607. Generally, it indicates the positive relationship between sales and cash and bank balance.
- The average current ratio is 1.82, which is normally less than the satisfactory level; however satisfactory level is 2:1. Overall, the average ratio signals a little bit unsatisfactory position of the NWSC, which should be little bit above the average ratio to reach near to 2:1.
- NWSC has been operating in loss in all fiscal year during the research period. In overall, NWSC has been operating under loss and the average net profitability margin has been calculated as -52.46%.

- NWSC has not utilizing its current assets effectively in earning profit. The overall ratios are dissatisfying, indicating loss in each fiscal year. Overall, the return on working capital i.e. current assets is disappointing indicating drastic downfall of the corporation. The average return on working capital has been calculated as -23.13%.
- Cash and Bank Balances and Current Liabilities ratio occurred from lower 21.02% to 88.55% which indicate the significant cash balance to meet the current obligation. But on the other hand most of the ratios are less than 30% which shows the excess cash and deficit in making payment during the study. It has clearly indicated that NWSC has not been following a systematic cash management practices.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The study focuses on the cash management of NWSC. It attempts to analyze the cash management of NWSC for last 10 years from 2055 to 2065. NWSC has been growing concern of greater national importance in the area of providing water. It contributes significantly to the economic development of the country. However, NWSC is found to be suffered from cash management. So the objective of this study is to have true insight into its cash management. An effect has been made to assess and analysis the cash management of the corporation. An attempt has also been made in the study to provide a possible suggestive frame work for the better cash management of NWSC. As state in earlier cash management refers to the management of cash, receivable and inventory. Likewise as stated in the introduction section, the objectives of the study are:

To examine the cash management practice in NWSC, to examine the liquidity position of NWSC, to study the relation of the relationship of cash with other related variables of cash management and to provide necessary recommendation for improvement of cash management on the basis of analysis.

To make research fulfill, review of related studies has been concerned in second chapter. To make major findings and to reach closer to conclusion, explanation of the tools and techniques has implemented in chapter four.

Hence, an effort has been made in this chapter to present major findings on overall cash management practice in NWSC recommendation and make conclusion.

5.2 Conclusion

Cash management is the major element in financial function. It is said that main function off financial manager is to apply better techniques to improve cash management in companies. There is other numerous aspect of finance involved in the overall financial performance addition of a firm. In addition to this, the overall performance of a firm counts for other managerial aspects such as human resource management, organizational structure, marketing management etc. However, all down falling trend of the financial position is an indication of the fact that NWSC 's cash management practices is a poor and not so effective due to the lack of mobilizing excess cash on profitable sector and lack of awareness of the employees for practicing better cash management inside NWSC.

Negative profitability of the firm adds much to the worsening financial position of the firm. Besides such management being one of the major elements of financial functions.

Finally, Overall condition of the Corporation is found very poorly operating. To overcome this situation, the NWSC has to improve management practice. If unused cash is utilized efficiently in profitable area, if estimation and forecasting system is done properly, if different policy is implemented to collect credit sales timely the corporation might improve this situation.

5.3 Recommendation

Financial efficiency is one of the key elements to achieve the goal of any business enterprises. The major finding of the study shows that NWSC is not followed any specific and appropriate financial principal and techniques. Following recommendation are given for better financial performance and good cash management of the company on the basis of the finding of the study.

- The study has identified that NWSC has not been maintaining optimum cash balance. The balance held are at time too high and too low in other time without definite purpose as to why the firm has held excess or deficit balance of cash. Holding optimum cash as per its sales, profit and other influencing variable should be recommended.
- NWSC should prepare the cash budget and cash planning on a formal basis as to project cash surplus or as deficit for a period not exceeding one year and broken up into shorter intervals. Cash budget should be prepared with considering influencing variable on cash management.
- Company should manage its cash affairs in such a way as to keep cash balances at a minimum level and to invest the surplus cash funds in profitable opportunities.
- NWSC should manage their cash in such way as to keep cash balance at a minimum level for daily operating purpose and invest surplus cash in profitable opportunities because idle cash increases opportunity cost and profit will be decreased.
- The relation of cash balance with respect to CA and CL insignificant. So, it is recommended that NWSC should plan to maintain cash balance with respected CA and CL.

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APPENDICES

APPENDIX - 1

Correlation between Cash and Bank Balance and Revenue

	Revenue(X)	Cash & Bank Balance(Y)	$x = X - \bar{X}$	x^2	$y = Y - \bar{Y}$	y^2	xy
6	287809	184402	-249843.2	62421624586	-80693.2	6511392526	2016064
7	382523	258569	-155129.2	24065068693	-6526.2	42591286.44	1012404
8	486667	257050	-50985.2	25994p90619	-8045.2	64725243.04	410186
9	533961	163435	-3691.2	13624957.44	-101660.2	10334796264	3752481
0	582706	226244	45053.8	2029844894	-38851.2	1509415741	-175039
1	598894	236083	61241.8	3750558067	-29012.2	841707748.8	-177675
2	726478	311413	188825.8	35655182746	46317.8	2145338597	8745995
3	755619	346103	217966.8	47509525902	81007.8	6562263661	1765701
4	755958	392682	218305.8	47657422314	127586.8	16278391534	2785293
5	265907	274971	-271745.2	73845453723	9875.8	97531425.64	-268370

5376522	2650952	0	299547796501.6	0	0	44388154028	7000357
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$$\bar{X} = 537652.2$$

	Cash and Bank	Current Assets	x	x^2	$y = Y - \bar{Y}$	y^2	xy
56	258569	2082570	-80693.2	6511392526	-356535.3	127117420146.09	28769974
57	184402	116175	-80623.2	6511392526	-606072.5	367323875256.25	48905920
58	257050	1077909	-8045.2	64725243.04	-141959.3	20152442856.49	11420900
59	258569	416175	-80623.2	6511392526	-398149.5	158523029350.25	25984000
60	163435	1056031	-101660.2	10334796264	-193747.2	37543872.784	19945360
61	257050	5926031	-80623.2	6511392526	-606072.5	367323875256.25	48905920
62	220244	1141260	-38851.2	1509415741	-78608.3	6179264828.89	3054026
63	163435	655954	-101660.2	10334796264	-158370.5	25081215270.25	16009976
64	236083	1275989	-29012.2	841707748.8	55220.7	3049475708.49	-1602073
65	276244	735655	-38851.2	1509415741	-78669.5	6188890230.25	3056400
66	311413	1481586	46317.8	2145338597	261717.7	68496154493.29	12122188
67	346103	1689762	81007.8	6562263661	469893.7	220800089299.69	38065054
68	392682	1912819	127586.8	16278391534	692950.7	480180672630.49	88411362
69	274971	717824	9875.8	97531425.64	-502044.3	252048479162.49	-4958089
70	2650952	12198683	0	44388154028	0	1260954557080.10	1831961460

$$\bar{Y} = 265095.2$$

$$r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{70003575986}{\sqrt{299547796501.600} \times \sqrt{443881540280}} = 0.607090754$$

$$P. E. = 0.6745 \times \frac{1-r^2}{\sqrt{10}} = 0.6745 \times \frac{1-0.60709054^2}{10} = 0.0425906$$

$$6 \times P. E. = 6 \times 0.042590683 = 0.255544098$$

Relation between Cash and Bank Balances and Current Assets

$$\bar{X} = 265095.2$$

$$\bar{Y} = 1219868.3$$

$$r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{183196146602.40}{\sqrt{44388154028} \times \sqrt{1260954557080.10}} = 0.774342461$$

$$P. E. = 0.6745 \times \frac{1-r^2}{\sqrt{10}} = 0.6745 \times \frac{1-0.774342461^2}{10} = 0.027$$

$$6 \times P. E. = 6 \times 0.027 = 0.162$$

Relation between Cash and Bank Balances and Current Liabilities

61	236083	857546	-29012.2	841707748.8	43221.5	1868098062.25	-1253950
62	311413	992420	46317.8	2145338597	178095.5	31718007120.25	8248991
63	346103	1148268	81007.8	6562263661	333943.5	111518261192.25	27052028
64	392682	1868361	127586.8	16278391534	1054036.5	1110992943332.25	134481144
65	274971	734723	9875.8	97531425.64	-79601.5	6336398802.25	-786128
	2650952	8143245	0	44388154028	0	1902744597538.50	240723303

$$\bar{X} = 265095.2$$

$$\bar{Y} = 814324.5$$

$$r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{240723303932.00}{\sqrt{44388154028} \times \sqrt{1902744597538.50}} = 0.8283$$

$$\text{P. E.} = 0.6745 \times \frac{1-r^2}{\sqrt{10}} = 0.6745 \times \frac{1-0.8283^2}{10} = 0.021$$

$$6 \times \text{P. E.} = 6 \times 0.021 = 0.127$$