

CHAPTER – I

INTRODUCTION

1.1 Background of the study

Industrialization is an important (major) factor for achieving the basic objectives of a country's economic and social progress or in another words, industrialization is considered essential for economic development for the country these day. Industrialization not only provides goods and services but also creates employment opportunities. It facilitates an effective mobilization of resources of capital and skill, which might otherwise remain unutilized. Industrial development thus has a multiplier effect on the economy (Pant, 2003:17).

Industrialization plays a crucial role in the process of economic development and its importance is a means of achieving economic growth and prosperity within the country. Hence industrialization is universally accepted as a strategy of economic development as well as fundamental goals (Pradhan, 1994: 44).

Development plans of Nepal have been emphasizing the development of both public and private sector industries. In every plan the word industrialization has been maintained too frequently. It is stated that private sector hasn't been able to come forward in industrial investment despite the several facilities provided by the government. The policy of government to encourage industrialization in the private sector including financial support with establishing financial institution, tax concession, establishing other infrastructure. But there is also another view in this regard. It is mentioned that, that is not private sector which has not come foreword to stabilize industry. The development planner have felt that lack of industrial development strategy in Nepal has posed a curtail problem in designing an industrial program which is not most causes has been more listing of projects in the company's development plan (Pradhan,1994:68).

Both private and public sector have been contributing to our nation however the private sector is recognized as the driving force behind it with the dawn of multi party democracy. The Economic liberalization has made a sharp turn as the numbers of industries has increased greatly.

Public sector manufacturing companies has been quite unsatisfactory of capacity utilization. Most of the manufacturing units in Nepal run below its production capacity. The private as well as public sector company plays vital role of industrialization and economic growth of nation.

The government has to play a good attention and a very careful role to develop industrialization. Economic liberalization and privatization, tax rebates, developing infrastructures and other facilities is the main attraction for new establishment of industries. Many experts provided different policies and techniques for appropriate cash management. Due to inadequacy of knowledge, the policies and techniques have not been applied / implemented in Nepalese manufacturing companies.

Now the Nepal has adopted the policy of economic liberalization and privatization and also gets the membership of the world trade organization (WTO) through the globalization. For the strengthening the economy of any country both the private and public sector should play vital role. Now, Nepal government adopting foreign direct investment policy to encourage foreign investors. These policies create positive impact to the private manufacturing companies for industrial development. Nepalese Private Sector industries reaping low profit due to the poor performance in term of capacity utilization, productivity, efficiency and profitability. Nepalese public sector manufacturing company need to take competitive strategy innovation research and development to be alive in competitive environment of globalization. Today industries can sustain their existence and growth only through a continuous process of innovation in functions quality and cost of product and its importance is as a means of achieving economic growth and prosperity within the country.

Simply, cash refers assets continuing the most liquid item among all the assets. A firm has focus for cash management for smooth run. The size of cash balance in hand and in account to be maintained on the behavior of operating cash flows of firms. Each

business operation is unique in the matter of cash collection and disbursement, as such as, a firm needs to follow cash management strategies and policies.

A manufacturing company must maintain certain cash during production and sales.

The main objectives of cash management are as follows:

- 1) To meet payment schedule
- 2) To minimize funds committed to cash balances.
- 3) For speedy collection of usable cash.
- 4) To slowing disbursement.
- 5) Effective use of capital.
- 6) To maximize the profit of the origination.

1.1.1 Brief introduction of selected companies

a. Unilever Nepal Limited

Unilever Nepal limited was established in 1994 as a joint – Venture Company with an objective of establishing a factory to manufacture soap, detergents, cosmetics, toiletries, oleaginous, saponaceous, unguents and other chemical products under the brand name of the products of Hindustan Lever limited. Hindustan liver limited with 80 percent ownership has invested Rs. 73.7 million in equity. This is the first joint venture of Hindustan lever limited outside India.

b. Bottlers Nepal Limited.

Bottlers Nepal established as multinational company, its parent company is Coca-Cola (Asia) Ltd, a company incorporated in Dubai, UAE which holds 98.16 percent shares of Bottlers Nepal Ltd. The principal activity of the company is to manufacture and sell soft drinks under registered trademark of The Coca-Cola Company. It has listed its ordinary shares at Nepal stock exchange in 1984/06/21. It has two subsidiary company named Bottler (Terai) Ltd, and Troika Traders Pvt. Ltd. Troika Traders Pvt. Ltd involved in the distribution of the products of parent company. Company distributes its product through the "Manual Distribution Center" directly through the Troika traders. Four Boards of Directors of the company are nominated from Coca Cola Sabco (Asia) ltd and rest form the Nepalese Shareholders.

1.2 Statement of the problem

Cash management in manufacturing companies of Nepal is primarily based on traditional approach. A more serious aspect of cash management has been the absence of any formalized system of planning and budgeting.

Without proper management of cash even a profitable venture can be liquidate for not being able to meet its financial obligation on time. Poor cash management leads to bad reputation. Employee may be demotivated from not being paid on time. Supplier may refuse to extend credit facilities.

The study attempts to have a insights over the problem of cash management in listed manufacturing companies so that attempt has been made to identify the answer of following questions as a major problem.

-) What is the liquidity position of the company and are the companies able to maintain appropriate level of liquidity position?
-) What is the relationship between and among influencing variable of cash management?
-) Are the companies able to collect and to make payment at a considerable time span?

1.3 Objective of the study

The major objective of this study is to examine the management of cash in listed manufacturing companies. The basic objectives of the study are as follows:

- 1) To identify the liquidity position of the companies.
- 2) To study the relationship of cash with sales, total assets, current assets etc.
- 3) To make analysis of cash conversion cycle of the companies.
- 4) To provide necessary recommendation for improvement of cash management on the basis of analysis.

1.4 Significance of the study

The explosive growth of investing and raising capital in the global market has put new emphasis on a policy which strives for zero- working capital. The worldwide financial analysts, together with analyst's researchers, users, regulatory bodies are

involved in great effort in the management of working capital through efficient cash management. The primary goal of cash management is to reduce the amount of cash held to the minimum requirements to conduct business.

The study of cash would be a crucial study because suggests to manage cash more efficiently by the selected Nepalese manufacturing companies. The study would be significant equally to the related/unrelated parties who are interested on cash management as business people, financial analysts and academician. This study helps business people to impose better cash management practices whereas analysis and academician can make further researcher.

1.5 Limitation of the Study

The study has very limited area of investigation. It is only a part and partial analysis of cash management of the selected manufacturing companies. Comprehensive study of cash management is not possible in this dissertation due to its deadline of completion and availability of data and information. The study is not bounded by the fixed standard of measurement and relationship between two or more variable with cash. So cash relationship with other variables is analyzed on the basis of average cash increments.

So the limitation of the study is as follows:

- Two companies are chosen as sample out of the total listed manufacturing companies.
- Only five year data has been used.
- The study is totally based on the secondary data.
- Financial and statistical tools and techniques have been used for analyzing data.

1.6 Organization of the Study

This study has been organized into five different organs (chapters) which are as follow:

1. **Introduction**

This chapter includes background of the study, statement of the problem, objective and limitation of the study.

2. **Review of Literature**

The second chapter, review of literature, deals a theoretical frame work and review of related studies.

3. **Research Methodology**

This chapter deals with introduction, research design, population and sample, nature and source of data and tools and techniques for analysis data i.e. statistical and financial tools.

4. **Presentation and Analysis Data**

The acquired data are presented and analyzed, through the way of designed methodology in this fourth chapter to accomplish the research objective.

5. **Summary, Conclusion and Recommendation:**

The last chapter provides the summary, recommendation and conclusion of overall study.

At the end an extensive bibliography and appendices are also included at the end of the part of thesis book.

CHAPTER – II

REVIEW OF LITERATURE

2.1 Conceptual Framework

2.1.1 Meaning of Cash

The term cash has a meaning according to the purpose for which it is used and persons with varying branches of knowledge convey various meanings of cash. If you ask with an economist, he considers cash as the means to satisfy human wants. But a lawyer opines the view that cash is the legal tender money issued by a determinate authority. However, over concern of the meaning of cash is to look from a view point of the balance sheet. Cash is an asset constituting the most liquid item among all the assets. But to obtain cash involves cost because corporations have to rise through issue of share or by borrowing with interest. Indeed cash which has a cost, whether received internally through money market procurement is a liability and a wasted opportunity unless it is not put to its optimal use (Saksen,1974:54).

2.1.2 Meaning of Cash Management

Approximately 1.5 percent of the average industrial firm's assets are held in the form of cash, which is defined as demand deposits plus currency. Cash is often called a "non earning assets". It is needed to pay for labor and raw materials, to buy fixed assets, to pay taxes, to service debt, to pay dividends, and so on. However, cash itself (and also most commercial checking accounts) earns no interest. Thus, the goal of the cash manager is to minimize the amount of cash the firm must hold for use in conducting its normal business activities, yet, at the same time, to have sufficient cash (1) to take trade discounts, (2) to maintain its credit rating, and (3) to meet unexpected cash needs. (Brigham and Ehrhardt 2004 :847)

As such whatever cash a corporation has must be utilized efficiently to meet obligations of interest payment of Cash Corporation has responsibility to owners 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 although it is on possible to formulate a set of assets management policies of universal applicability, one rule or policy that appears to be unanimously accepted is that cash must be conserved. It is the rule of conversion of cash which holds the view that cash is expensive so it is ought to be acquired and used with adequate caution. If cash holding is bad for inefficient corporation, cash shortage is dangerous for efficient corporation. As for Inefficient Corporation it does not matter whether cash increases or decreases if they are not in a position to utilize them. But efficient corporation due to undertaking of more operation need more cash besides having profit (Shrestha, 1980: 147)

2.1.2 Principles of Cash Management

The size of cash balance in hand and in account to be maintained depends on the behavior of operating 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 manager are mainly concerned with the (a) Management of cash receipt, (b) management of disbursement, (c) minimization of cash balances, (d) use of most inexpensive source of financing for cash balance and (e) investment of excess balance of cash. The standard principles of cash management are follows:

- a) To collect account receivable as soon as possible without annoying and losing potential customers by establishing a system of lock boxes, electronic fund transfer, preauthorized checks, and deposit concentration.
- b) To delay payment as long as permitted without damaging the firm's credit rating by establishing controlled disbursement system.
- c) To minimize cash balance without adversely affecting the business operation by following the techniques of cash balance management such as Baumol & Miller Orr-Models.
- d) To manage most inexpensive source of financing for meeting short term cash deficiency by optimally balancing between cost and risk.
- e) To invest short term excess cash in most efficient market portfolios of securities such as some by market instruments. (Pradhan, 1992:98)

2.1.3 Motives for Holding Cash

The term cash with reference to cash management is used in two senses. In a narrow sense, it is used broadly to cover currency and generally accepted equivalent of cash, such as cheques, draft and demand deposits in bank. The broad view of cash is also includes near cash assets, such as marketable securities and time deposits in banks. The main characteristics of this are that they can be readily sold and converted in to cash. They serve as a reserve pool of liquidity that provides cash quickly when needed. They also provide a short term investment outlet for excess cash are also useful for meeting planned out flow of fund. Irrespective of the firm in which it holds a distinguishing feature of cash, as an asset, is that it has no earning power. Cash does not earn any return, why it is hold? There are four primary motives of cash balance, these are:

2.1.3.1 Transaction Motive

This refers to holding of cash to meet routine cash requirement to finance the transaction which a firm carries in the ordinary course of business. A firm enters in to a variety of transaction to accomplish its objectives which have to pay for in the form of cash. The requirement of cash balance to meet routine cash needs is known as transaction motive and such motive refers to the holding of cash to meet anticipated obligation whose timing is not perfectly synchronized with cash receipt (Khan and Jain 2003:302-308)

2.1.3.2 Precautionary Motive

The cash balance held in reserves for random and unforeseen fluctuation in cash flows are called as precautionary balances. In other words precautionary motives of holding cash implies the need to hold cash to meet unpredictable obligation. Thus, precautionary cash balance serves to provide a cushion to meet unexpected contingencies. The more unpredictable are the cash flows, the larger is the need for such balance. Another factor which has a bearing as the level of such cash balances is the availability of short term credit. If a firm borrows at short notice to pay for unforeseen obligation, it will need to maintain a relatively small balance and vice versa (Khan and Jain 2003:302-308).

2.1.3.3 Speculative motive

It refers to the desire of a firm to take advantage of opportunities which presents themselves at unexpected moments and which is typically outside the normal course of business. While the precautionary motive is defensive in nature in that firm must make provision to tide over unexpected contingencies, the speculative motive represents a positive and aggressive approach. The firm's aim to exploit profitable opportunities and keep cash in reserve to do so. The speculative motive helps to take advantages of

-) An opportunity to purchase raw materials at a reduced price on payment of immediate cash.
-) A change to speculate on interest rate movement by buying securities when interest rates are expected to decline.
-) Delay purchases of raw materials on the anticipation of decline in prices, and
-) Make purchases at favorable prices (Khan and Jain 2003:302-308)

2.1.3.4 Compensating Motive

It is to compensating banks for providing certain services and loans. Usually, clients are requested to maintain a minimum balance of cash at the bank since this balance can not be utilized by the firm for transaction purpose, the banks themselves can use the amount to earn a return. Such balances are compensating balance.

Compensating balance is also required by some loan arrangement between a bank and its customer. During periods when the supply of credit is restricted and interest rates are rising, banks require a borrower to maintain a minimum balance in his account as a condition precedent to the grant of loan. This is presumably to 'compensate' for a rise in the interest rate during the period when the loan will be pending.

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

2.1.4 Objective of cash Management

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

2.1.4.1 Meeting payment schedule

In the normal course of business, firm have to make payments of cash as a continuous and regular basis to supplier of good, employees and so on. At the same time, there is constant inflow of cash though collection from debtors. Cash is therefore, aptly described as “oil to lubricate the ever turning wheels of business: without it the process grinds to a stop “ a basic objective of cash management is to meet the payment, schedule, that is , to have sufficient cash to meet the cash disbursement needs of a firm.

2.1.4.2 Minimizing Funds Committed to Cash Balances

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

2.1.5 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 mousing to earning of corporations. As such corporations must adopt such a policy that makes optimum cash management possible. The financial manager of the corporation should try to minimize the corporation’s holding of cash while still maintaining enough to ensure payment of obligation. For improving the efficiency of cash management, effective

method of collection and disbursement should be adopted. The method of efficiency of cash management is described as:

2.1.5.1 Speedy Collection of Usable Cash

When a customer writes and mails a cheque, this does not mean that the funds are immediately available to the receiving firm (Weston and Copeland, 1992). So method of speeding collection of usable cash from customer payment of receivable should be used for optimization of cash management. This can be done through lock-box system concentration banking and special handling of the movement of fund (Shrestha: 1980 : 87).

Concentration Banking

Concentration banking is a system of centralizing corporate cash in order to control the firm's fund and minimize the idle cash balances. Under this system a concentration bank is designated to receive funds from lock-boxes or any of subsidiaries depository banks. Wire transfer can be made automatically, according to instruction given by the firm. The concentration bank reports available balances daily so the firm's treasures can take maximum advantages of investing opportunities.

A second method of concentration banking employs a depository transfer cheque (DTC), which is non-negotiable demand deposit instrument, used to transfer money from our bank account to another.

Special Handling of Cash

Special handling of cash enable corporations to have sufficient funds the a can be pit to profitable user it is often found that some corporations pen too many accounts in a bank and there by creating excessive idle fund in a bank such policy no doubt profitable in strengthening the4 degree of good will either bankers. Yet they make little sense in the overall cash management of the corporations. Moreover, the corporations should give special attention to the handling of large remittances with a view of get them quickly deposited in a bank and undertake, measures to pickup these cheques personally on the use of air mail and special delivery.

2.1.5.2 Slowing Disbursement

Apart from speedy collection of account receivable the operating cash requirement can be reduced by slow disbursement of account payable (Khan and Jain 2003: 662). Quick collection and slow disbursement accomplish the corporation with adequate cash on hand for larger period. Effective control of disbursement can result in a faster turnover of cash. The idea is to collect receivable as soon as possible, but pay account payable as late as it consist with maintaining the firm's credit standing with suppliers. In other word most firms desire to maintain reputations and good relation with suppliers by disbursing funds in a timely and accurate fashion. At the same time, a disbursement system should have a low operating cost, provide accurate management reports and extend disbursement float where practical and reasonable (Hampton, 1989:89).

Zero balance account disbursing

A number of banks offer a zero balance account (ZBA) services that allow the writing of cheques against individual operating accounts containing no fund. The cheque clear through regular banking channels and are then presented for collection. at the close of business, the bank automatically transfer funds from the company's concentration or master account to the different operating account in order to return each operating account to zero balance

Controlled Disbursing

In this method, checks ate drawn on bank, in areas that do not receive frequent clearing services from the Federal Reserve. Firm is not tying up funds before the checks are presented for payment.

Electric fund transfer

Transaction are recorded on magnetic tape and cleared directly through an automated clearing house. This will eliminate the need to print checks, will minimize float and will significantly reduce proper week and related expanses.

2.1.5.3 Cash velocity

Efficiency in the use of cash depends upon the cash velocity i.e. Level of cash over period of tine. But the amount of sales in crucial factor that determines the cash velocity. The greater amount of sales, is the greater would be the additional cash necessary to conduct the higher scale of operation.

$$\text{Cash Velocity} = \frac{\text{Annual sales}}{\text{Average cash balances}}$$

2.1.5.4 Minimum Cash Balance

Corporations are required to keep a minimum cash Balance requirement of bank either for services it renders of in consideration of lending arrangement. Every bank

calculates the average collected balances and the account deems to be profitable if the total cost is less than total income. But in practice cash balance of the corporation with the banks is higher than cash in hand. It is because corporation always finds it to keep large funds with bank otherwise it may be utilized or misappropriated if kept in hand. (Shrestha: 1980: 89).

2.1.6 Factors Determining Cash Needs

2.1.6.1 Synchronization of Cash Flows

With a perfect synchronization of cash inflows and out flows and a higher degree of predictability, cash balances could be held to low levels. An example of synchronization demonstrates that cash flows can be improved through more frequent requisitioning of fund to divisions offices from the firm's central office. if funds are requisitioned once a month, we may now 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. It is necessary to understand now that there are different types of float. We have seen that the float of the different between book cash and back cash, representing the net effect of changes in process of clarity. The first type of float is disbursement float. As we write check, it declares book balance but does not immediately change available balance. Similarly, the collection float refers to the result of cheque received, which increases book balance but not immediately change available balance. The net float is the overall difference between the firm's available and its book balance. (Pradhan, 2004: 420)

2.1.6.2 Short cost

Another general factor to be considered to determine cash need is the cost associated with a shortfall in the cash needs forecast presented in the cash budget would reveal periods of cash shortages. In addition, there may be some unexpected cost involved depending upon the security, duration and frequency of the shortfall and how the shortage is covered. Expense incurred as a result of shortfall are called short costs. Included in the short cost is the following:

-) Transaction cost associated with raising cash to tide over the shortage. This is usually the brokerage incurred in relation to the sale of some short term marketable securities.
-) Borrowing cost associated with borrowing to cover the shortages these include items such as interest on loan commitment charge and other expenses relating to the loan.
-) Loss of cash discount, which is a substantial loss because of temporary shortage of cash.
-) Cost associated with determination of the credit rating which is reflected a higher bank charges on loans , stoppages of supplies , demand for cash payments ,refusal to sale, loss of image and the attendant decline in sales and profits.
-) Penalty rates by bank to meet a shortfall in compensating balances.
(Khan and Jain, 2003: 82).

2.1.6.3 Excess cash balance cost

The cost of having excessively large cash balance is known as the excessive cash balance cost. If large funds are idle, the implication is that the firm has missed opportunities to invest those funds and has thereby lost interest which it would otherwise have earned. This loss of interest is primarily the excess cost

2.1.6.4 Procurement and management

There are the cost associated with the establishing and operating cash management staff and activities. They are generally fixed and are mainly accounted for by salary, shortage, handling of securities and so on

2.1.6.5 Uncertainty and Cash Management

Finally, the impact of uncertainty of cash management strategy is also relevant on cash flows can not be predicted with complete accuracy. The first requirement is a precautionary cushion to cope with irregularities in cash flows, unexpected delays in collections and disbursements, default and unexpected cash needs.

The impact of uncertainty on cash management can, however, be mitigate through (1) improved forecasting of tax payments, capital expenditure, dividend, and so on and (2) increased ability to borrow through overdraft facility.

2.1.7 Techniques for Effective Cash Management

2.1.7.1 Cash planning

Cash planning is a technique to plan and control the use of cash. It protects the financial condition of the firm by developing a projected cash statement from a forecast of expected cash inflows for a given period. Cash plans are very crucial in developing the overall operating plans of the firm (Pandey, 1999:839).

2.1.7.2 Cash forecasting and budgeting

Cash budget is the most significant device to plan and control cash receipt and payment a cash budget is a summary statement of the firm's expected cash inflows and outflows over a projected time period:

Cash forecast are needed to prepare cash budget generally forecasts covering period of one year or less are considered as short term forecast. The important functions of carefully developed short term forecast are to (a) determine operating cash requirement (b) anticipate short term financing and (c) manage investment surplus cash methods of short term forecasts are :

➤ 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 item of income and expenses involve flows of cash, 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 is same time called the sources and uses approach. There are two objectives of the 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 preformed financial statement one popularly used method of projecting working capital is to use ratios relating account receivable and inventory to sales

➤ Sensitivity analysis

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

➤ Long Term Cash Forecasting

Forecasts, these 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 acquisition on the firm's financial condition three, five or more 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 capital projects. It pinpoints the cash required to finance these project as well as the cash to be generated by the company to support the operation of the business.
-) To improve corporate planning long term cash forecast compel each division to plan for future and no formulate project carefully.(Pandey, 1999:843)

2.1.7.3 Managing the Cash Flows

The flow of cash should be properly managed the cash inflows should be steady and predictable, as far as possible, the cash out flow should be known.

2.1.7.4 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.

2.1.7.5 Investing Surplus Cash

The surplus cash balance should be properly invested to earn profits. The firm should decide about the decision of such cash between alternative short term investment opportunities such as bank deposits, marketable securities, or incorporate landing.

2.1.8 Determining the Optimum Cash Balance

The firm needs cash to purchase raw materials and pay wages and other expenses as well as for paying dividend, interest and taxes. There test of liquidity is the availability of cash to meet the firm's obligation when they become due. In other word firm require cash for various purpose, our or total requirement, how much to maintain in cash and how much in marketable securities is the question which needs a careful analysis of behavior of cash inflows and outflows may not synchronize all the time, the cash balance often fluctuates, and as a result, the balance could be sometime more and other time less than necessary. It is , therefore, necessary to adopt a system to correct such fluctuation and ,maintain an optimal balance at al time.

If the firm keeps high cash balance, it will have a strong liquidity but its profitability will be low. The potential profit forgone as holding large cash balance is an opportunity cost to the firm the firm should maintain optimum cash balance.

The models for maintaining optimal cash balances are described below.

2.1.8.1 Baumol's Model (Baumol 1952:545-556)

This model, developed by William Baumol (1952) essentially applies a basic Inventory model to cash management. The purpose of there model ids to determine the minimum cost amount of cash that a financial manager can obtain by converting securities to cash, considering the cist 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 the model, has two elements they are (i) cost of concerting marketable securities in cash and (ii) cost of opportunity cost as such the firm attempts to minimize the cost of holding cash and cost of holding cash and cost of marketable securities are converted in to cash. Symbolically total conversion cost fro period:

$$B = \frac{Tb}{C}$$

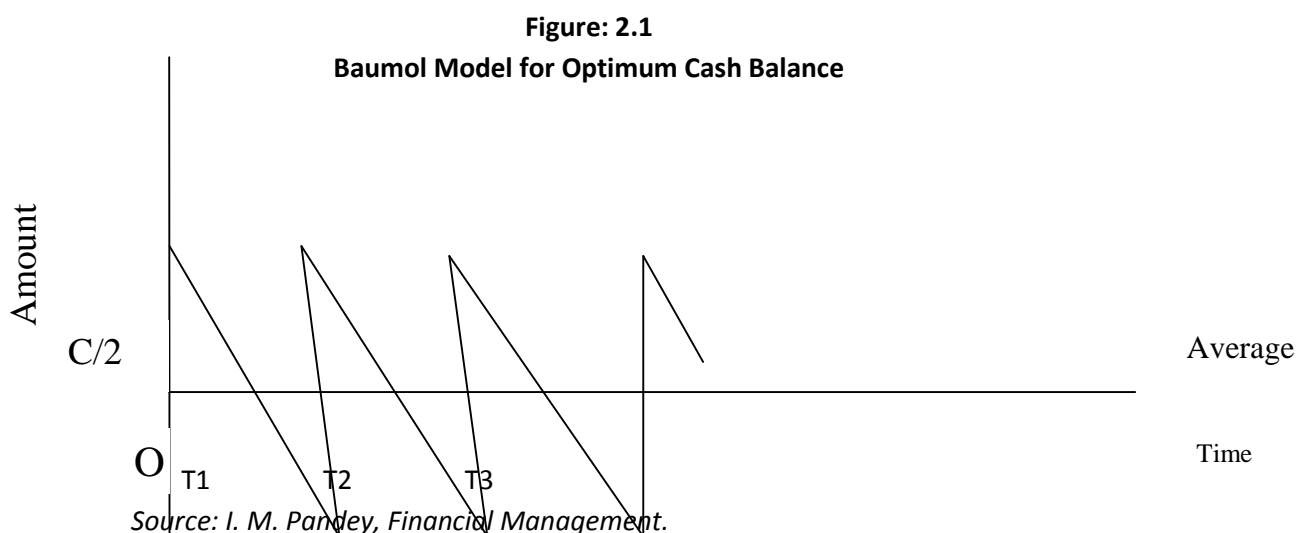
Where,

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

T = total transaction cash needs for period

C = value of marketable securities sold at each conversion.

The opportunity cost is derived from the cost / forfeited interest rate (i) that could have been earned 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 a constant and a certain pattern of cash out flows. At the beginning of watch period, the firm starts with a cash balance which is gradually spends until at the end of the period, the firm starts with a cash balance which is gradually spends until at the end of the period it has a zero cash balance and most replenish its each supply to the level of cash balance in the beginning which is shown graphically as



Mathematically,

$$\text{The Opportunity Cost of Holding Cost} = \left[\frac{C}{2} \right]$$

Where,

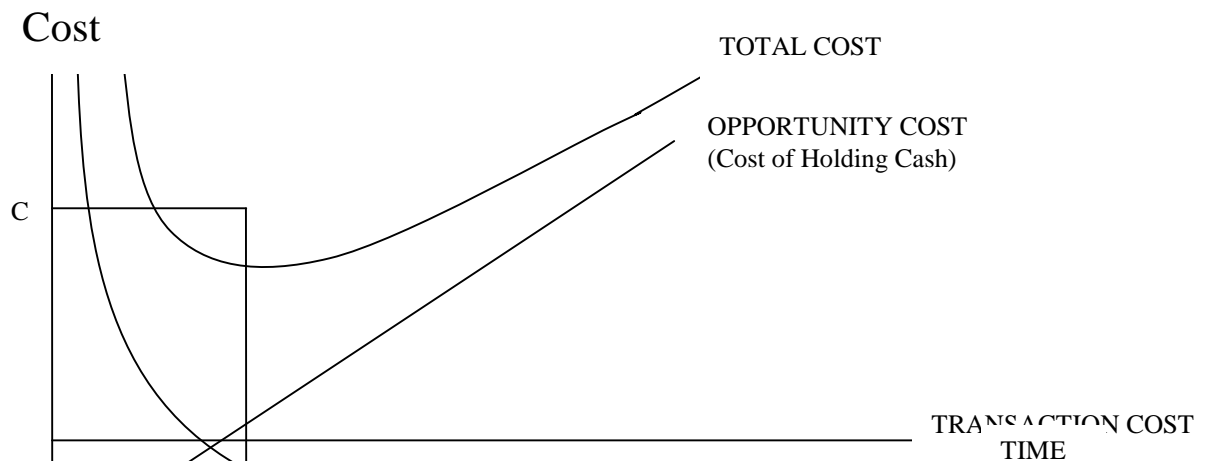
I = interest rate that could have earned.

$C/2$ = the average cash balance, the beginning cash plus the ending cash balance of the period (0) divided by '2'.

The total cost associated with cash management comprising. Total conversion cost plus opportunity cost of not investing cash until needed in interest bearing instruments can be symbolical

$$C = \sqrt{2bt/i}$$

Figure: 2.2
Cost Trade off, Baumol's



Source: I. M. Pandey, *Financial Management*

In sum ~~the Baumol model of cash management is very simplistic.~~ Further, its assumptions of certainly and regularity of withdrawal of cash do not realistically reflect the actual situation in any firm. Also the model is concerned only with transaction balance and not with precautionary balances. In addition the assumed fixed mature of cash withdrawal is not also realistic.

Nevertheless, the model does clearly and concisely demonstrate the economics of scale and the counteracting nature of the conversion and opportunity costs which are undoubtedly major consideration in any financial manager's cash management strategy.

2.1.8.2 Miller – Orr model (Miller – Orr model, 1966:413-435)

The objective of cash management, according to miller off (MO), is to determine the optimum cash balance level which minimizes the cost of cash management. It assumes that net cash flows are normally distributed with a zero value of mean and a standard deviation. each firm's cash floes fluctuates randomly and hit the upper control limit the it buys sufficient marketable securities to cone back a normal 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 modal level.

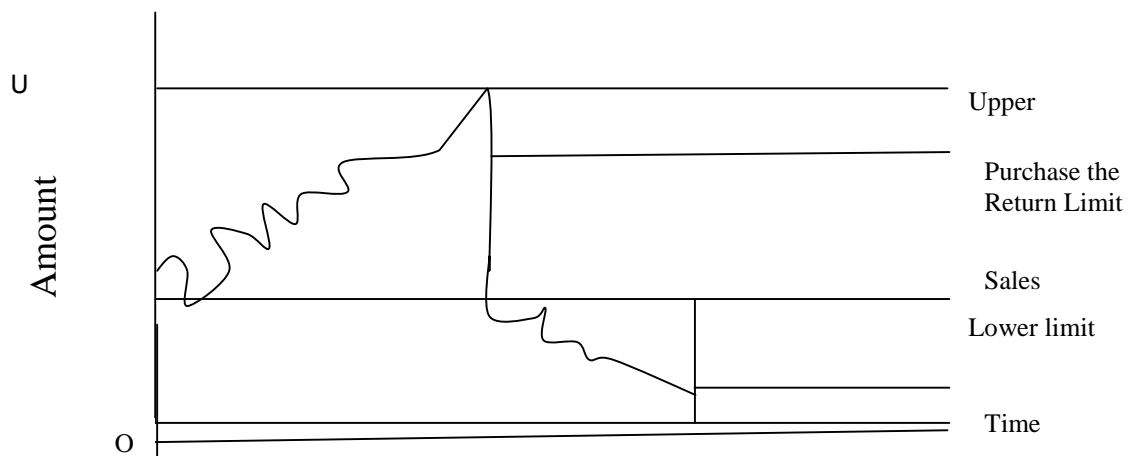
Symbolically: $C = \frac{bE(N)}{T} + i E(M)$

Where,

- b = the fixed cost per conversion
- E (M) = the expected average daily cash balance.
- $\frac{b}{E(N)}$ = the expected number of conversion
- t = number of days in the period
- i = cost opportunity cost
- C = total cash management cost

Graphically,

Figure: 2.3
Miller – Orr Model of Optimum Cash Management



Source: I. M. Pandey, Financial Management

According to Miller-Orr Model the optimal cash balance (Z) can be expressed symbolically as

$$Z = \sqrt[3]{\frac{3br^2}{4i}}$$

Where

- r² = the variance of daily change in cash balance.
- Miller – Orr model also specifies the optimum upper boundary (u) as
- U = lower limit + 3Z

Similarly return point

$$R = \text{lower limit} + z$$

If lower limit is zero,

Upper limit is three times of optimum level of cash and return point is equal to the optimal level of cash.

Further, the financial manager could consider the use of less liquid, potentially more profitable securities on investment for the cash balance excess of 'U'.

2.1.8.3 Orgler's model (Orgler, 1970)

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

Orgler'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 each operation of the firm that generate cash inflows or outflows on adding or subtracting profit opportunities for the firm from its cash management operation. In the objective functions, decision variables which cause inflows such payments of receivable, have positive coefficient while decision variable which generate cash inflows, such as interest and short term borrowing have negative coefficient. The formulation of the model requires that the financial managers first specify an objective function and then specific a set of constraint.

The constraint of the model could be (l) institutional of policy constraint. The institutional constraint are those imposed but external factors that is bank required compensating balance policy constraint are imposed on cash management by the firm itself. For instance, the financial manager may be prohibited from selling securitized before maturity either constraint can occur in the model during on monthly period for over several of all the month in one yea planning horizon.

An example of linear programming model is as follows:

Objective function

$$\text{Maximize Profit } Xa_1x_1 \Gamma a_2x_2$$

Subject to

$$b_1 \leq \text{production}$$

$$b_2 x_2 \leq \text{constraint}$$

$$c_1x_1 + c_2x_2 \leq \text{cash available constraint}$$

$$8x_1+8x_2 < \text{Current assets requirement constraint}$$

$$x_i \geq 0; \quad = n \text{ non- negatively constraint.}$$

A very important feature of the model is that it allows the financial managers to integrate cash management with production and other aspects of the firm

2.1.8.4 Monte Carlo simulation

Although the Baumol model and other theoretical models provides insights into the optimum cash balance , they are genera;;u not practical for use rather, firms generally sat they target cash balances based as some " safety stock " of cash that holds the risk of

running out of money to some acceptability law level. One commonly used procedure is Monte Carlo simulation. Sales and collections are the driving forces in cash budget and of course are subject to un certainty. In the cash budget we used expected values for sales and collection as well as for other cash flows. However, it would be relatively easy to use Monte Carlo simulation to introduce uncertainty. If cash budgets are constructed using a spread sheet program with Monte Carlo add in software, then the key uncertain variables could be specified as continuous probability distributions rather than point value.

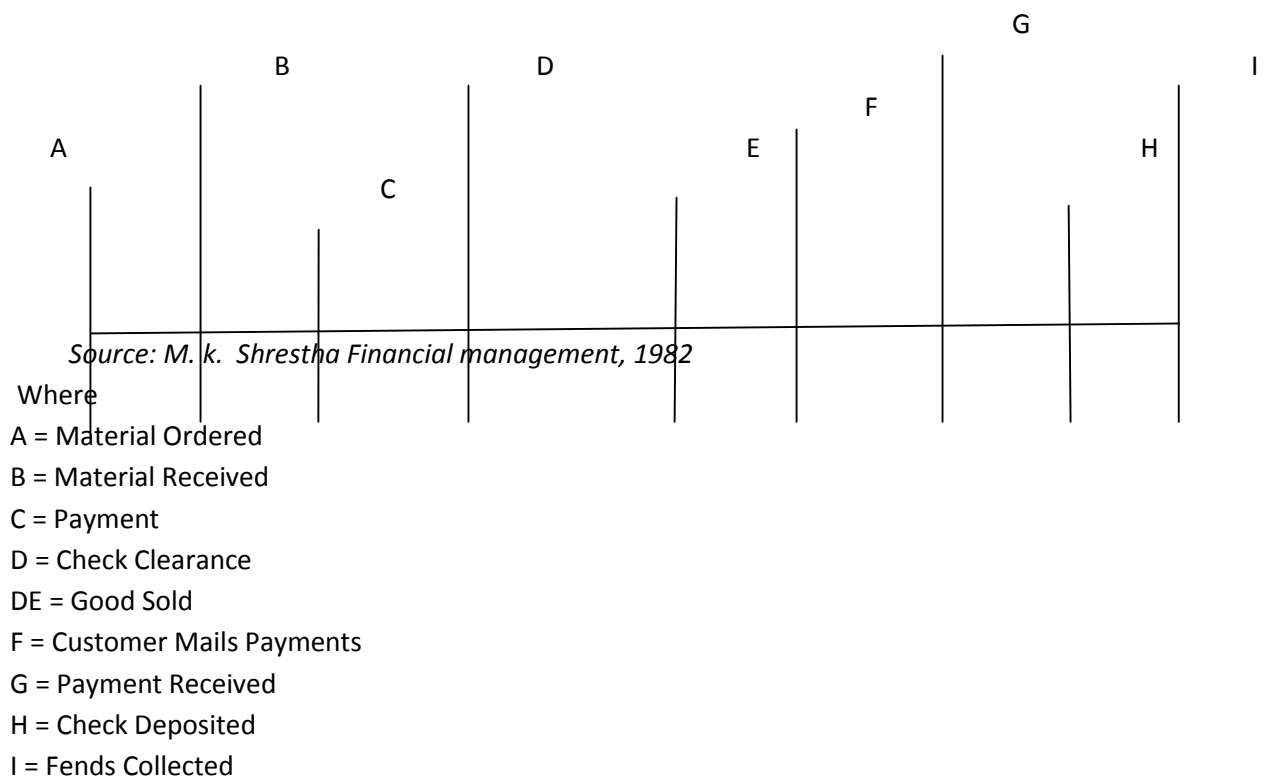
2.1.9 Basic Strategies for Cash Management

The 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.

2.1.9.1 Cash Cycle

The financial needs of the corporations 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 help in best management of cash. The cash cycle of the corporate is as follows

Figure: 2.4
Details of Cash Cycle



In addressing the issue of cash management strategies we are concerned with the time period involved in strategies BCD & FGHI. A firm has no control over time involved between stage A &B. The lag between D & E is determined but the production process and inventory

policy the time period between stage E and F is determined by credit terms and payment policy of customers.

2.1.9.2 Minimum Operating Cash

The higher the cash turnover the less is the cash a firm should, therefore try to maximize cash turnover. But it must maintain a minimum amount of operating cash balance so that it doesn't run out of cash the minimum level of operating cash is determined by dividing the total operating annual outlays by the cash turnover rate. Cash management strategies are intended to minimize the operating cash requirement. The basic strategies that can be employed to do the needful are as follows:

Stretching Account Payable

One basic strategy of efficient cash management is to stretch the account payable. In other words, a firm should pay its account payable as late as possible without damaging its credit standing. It should, however take advantages of cash discount available on payments.

Efficient Inventory, Production Management

This strategy is to increase the inventory turnover ratio, avoiding stock outs that are shortage of stock this can be done in following ways:

-) Increasing the raw materials turnover by using more efficient inventory control techniques.
-) Decreasing production cycle through better production planning scheduling and control techniques into will lead an increase in the work-in progress inventory turnover
-) Increasing finished good turnover through better forecasting of demand and a better planning of production.
-) Efficient inventory and production management cause a decline in operating cash, and hence, a saving in cash operating cost.

Speeding Collection of Account Receivable

Combined Cash Management Strategies

We spell out the implication of these strategies to minimum cash balance and the associated cost with the underlying assumption that a firm should adopt such cash management strategies as will lead to the minimizing of to operating cash requirement in other words efficient cash management implies minimum cash balances consistent with the need to pay bills when they become due (Khan & Jain 2003:352).

2.1.10 Cash Conversion Cycle

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

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

The cash conversion cycle net outs these three periods and thus equals the length of time between the firm's actual cash expenditures for productive resources and its own cash receipts from the sale of products. The cash conversion cycle w quails the average length of time a dollar is tied up in current assets:

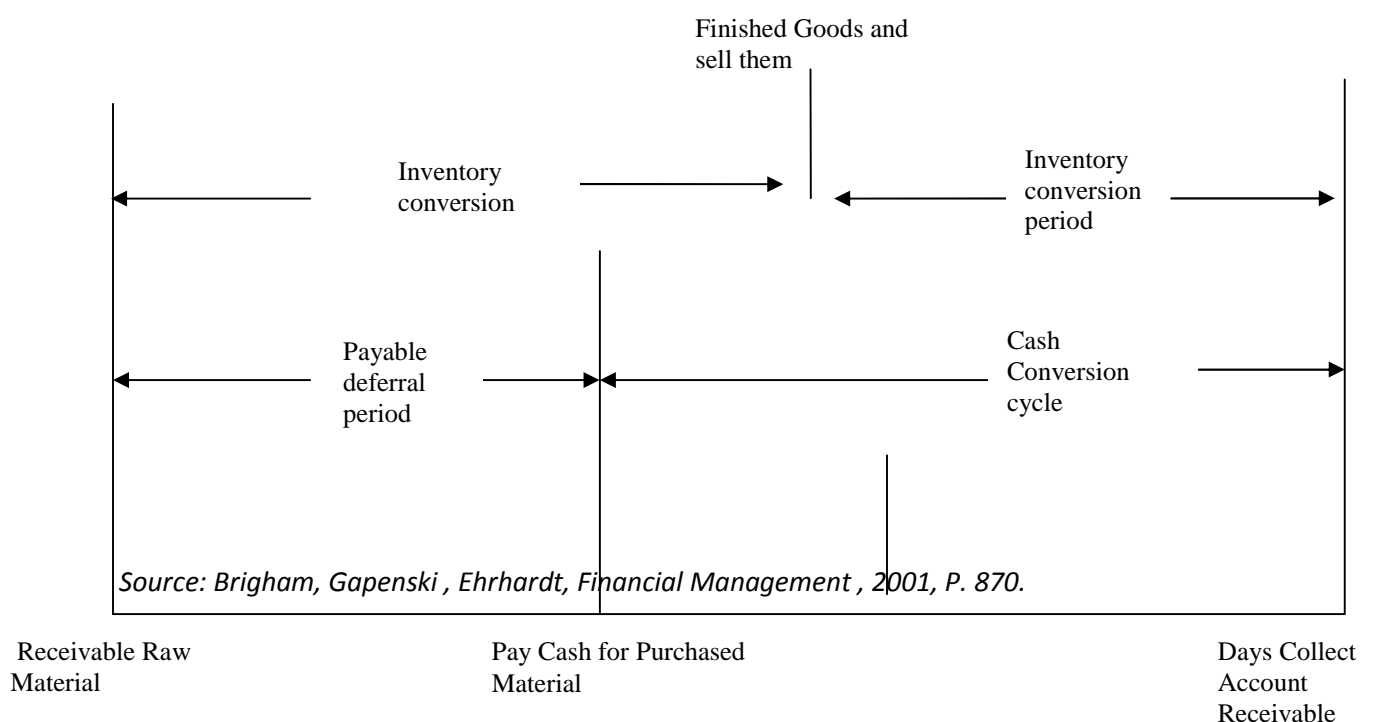
Symbolically,

$$\begin{array}{ccccccc}
 1 & + & 2 & - & 3 & = & 4 \\
 \text{Inventory} & & \text{Receivables} & & \text{Payables} & & \\
 \text{conversion cy} & + & \text{Collection Period} & - & \text{deferral period} & = & \text{Cash} \\
 & & & & & & \text{Conversion} \\
 & & & & & & \text{Cycle}
 \end{array}$$

In another way,

$$\text{Receipt delay} - \text{payment delay} = \text{net delay}$$

Figure: 2.5
Cash Management Cycle Model



The cash conversion cycle can be shortened (1) if the firm can reduce the inventory conversion period by processing and selling goods quickly (2) if it can reduce the receivable collection period by speeding up collection or (3) if it can lengthen the payable deferral period by slowing down its own payments. To the extent that these actions can be taken without increasing cost or depressing sales they should be carried out. (Brigham, Gape ski and Earnhardt: 2001)

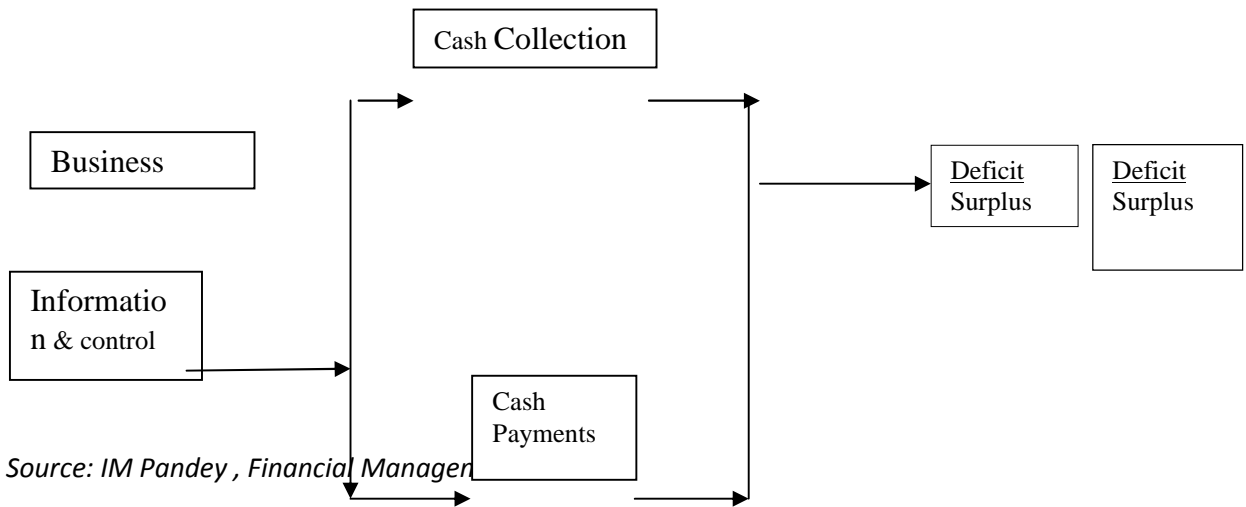
2.2 Review of Books

Various scholars as well as authors have given different views about cash management some of them have to be taken as review of books for cash management. According to Batty (1972) 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 a profit investment for use. 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 lead to improve earning power he again suggested that if care is taken for cash programme for improving cash may have unexpected consequences. In the short term it will be possible to cut back expenditure on marketing and other functions, but future sales will probably suffer and, consequently, there will be further detriments in cash flow further he defined cash management as the process involved in the effective planning and control of cash requirements of a business.

Similarly, **Pandey (1999)** suggested that the firm should keep sufficient cash either more or less. Cash shortage will disrupt the firm's manufacturing operations while excessive cash will simply remain idle, without contributing anything toward. The firm's profitability according to him the major function of financial manager is to maintain sound cash position. Some theoretical insights about cash management has presented by him. he said that cash management is concerned with the managing of , (1) cash flows into and out of the firm , (ii) cash flows within the firms, (iii) cash balance hold by the firm at point of time by financing deficit or investing surplus cash it can be represented by a cash management cycle. A sale generates cash which has to be disbursed out. The surplus cash has to be invested while deficit has to be borrowed cash management sees to accomplish this cycle at a minimum cost at the sometime, it also seeks to achieve liquidity and control cash management assumes more importance than other current assets because cash is the most significant and the least productive asset that a firm holds it is significant because it is used or 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 position to keep the firm sufficiently liquid and to use excess cash in some profitable way. The cash 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 there is no perfect coincidence between inflows and outflows of cash. During some period cash outflows will exceed cash inflows because payment of taxes, dividend or seasonal inventory builds up. At other times, cash inflows will be more than cash payment because there may be large cash sales and debtors may be realized in large sums promptly. Cash management is also important because cash constitutes the smallest portion of the total current assets. Yet management's 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 nowadays is to manage its cash affairs in such a way as to keep cash balance at a minimum level and to invest the surplus cash in profitable investment opportunities.

Jain & narang (1993) have described about cash management. He said that cash is crucial component of working capital of a concern. Cash like bloodstream of human body, gives strength to human body gives strength to business unit/. He explained that cash is ultimate resource for business, so management of each business unit should Endeavour to secure larger cash at the end of each working capital cycle than what it had at the beginning of working capital cycle. Further the important objective in managing cash should be trade off liquidity and profitability in order to maximize profits. By keeping larger amount of cash, the firm is able more to meet its obligation when they fall due and the risk of technical insolvency is reduced. However, cash is non warning assets, so unnecessary cash should not be kept as hand than the optimum required to continue the operation of the business efficiency. Liquidity and profitability must be balanced in such a way that the organization retains its liquidity and at the same time maximizes its profitability. They also stressed that business transaction, without involvement of cash is mythical in this monetary world. Today the importance of cash management is recognized by all segments of organization activities. If some of departments are handled independent without considering their implication of cash management the conflicting interest of these departments are bound to create serious

problem. The study of cash management is therefore considered as an integrated approach to management science.

Simons & Kerrenbrock (1964) expressed that cash is more often than other assets is the item involved in business transaction. This is due to nature of business transactions, which include a price and condition calling for settlement intervals of medium of exchange. In striking contrast to activity of cash it is unproductive in nature. Since cash is measure of value, it can not expand to grow unless it is converted in to other properties excessive balance of cash on hand is often referred to as "idle cash ". To be most useful to a 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 measure of liquidity, which is defined as the adequacy of net term 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 is evil because an increase in receivables. If the level of cash is linked to the level of sales, variable working capital may be changed.

Khan and Jain (2003) explained that cash management linkage with working capital management. He expressed that cash management is one part of the key areas of working capital management. Apart from the fact that is the most liquid current asset, cash is the common denominator or which all current assets can be reduced because the other major liquid assets, that is. Receivables and inventories get eventually converted into cash. This underlines the significance of management. He presented a detail account of the problem involved in managing cash and motive for holding cash, objective of cash management, factors determining cash needs, cash management models, cash budgets, basic strategies for efficient management of cash, and specific techniques to manage cash subsequently.

Shrestha (1980) has described some conceptual ingredients about cash management which are 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 efficient and inefficient corporations. He suggested that if cash holding is bad for inefficient corporations as for efficient corporations does not matter whether cash is invested or devised if they are not in a position to utilize them? But efficient corporation due to undertaking of more operations need more cash besides having profit.

Weston and Brigham (1978) have poured some views about cash management after their various studies on it. The basic conceptual findings of their studies proved sound knowledge and guide lines for the future studies in the field of cash management. They explained in the beginning the motives for holding cash, specific advantages of adequate cash, synchronization of cash flows, expanding collection and cheque clearing, using float, cost of cash management, determining minimum cash balance, compensating balance, marketable securities. Substitutes for cash criteria for setting securities investment alternatives.

Van Horne (2002) has prescribed the knowledge about cash management. He said that cash management involves managing the monies 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 a check to pay the firm on its account receivable. The function ends when a supplier, an employee of government realizes collected fund from the firm as an amount payable of accruals. All activities between these two points fall within the realm of cash management. The firm's efforts to get customers to pay their bills at a certain time fall within account receivable management on other hand, the firm's decision about when to pay its bills involves account payable and accrual management. He again described an idea of effective collection and disbursement of cash, we should attempt to accelerate collection & 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, heeding meaningful, however, of supplier relations. Methods of controlling disbursement i. e. Electronic fund transfer is becoming increasingly important, and most corporation use such transfer in one way or another.

Brigham, Gapenski and Ehrhardt (2001) described some conceptual insights which were based in various research studies. They believed that cash is often called non earning assets. It is needed to pay for labor and raw materials, to buy fixed assets, to pay taxes, to service debt, to pay dividend and so on. However, cash itself earns no interest thus the goal of the cash manager is to minimize the amount of cash the firm must hold for use in conducting its normal business activities. Yet, at 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, cheques held by a firm, and balances in its bank account. This money is immediately useable to pay bills. Some times "near 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 investments. The financial manager will purchase low risk, high liquidity money market instruments that can be converted back to cash without delay if the need arises. These securities provide a small profit on cash that may not be needed immediately for the firm's operation. These securities are widely used as short term investment by the firm in developed countries. Each security offers different characteristics that make it suitable for different firms. He said cash management is also called management of money position because cash includes not only the cash or currency in hand but also the easily 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 firms.
-) Management of cash flow within the firm
-) Management of cash balance held by the firm at a point of time

Weston & Copeland (1992) suggested about cash management from various studies and research. They said that relatively high level of interest rates have increased the importance

of cash management , while , at same time advances' in technology have changed the mature of cash management function . Financial manager have developed new techniques for optimizing cash balance and determining the appropriate relation between holding cash & holding investments in marketable securities.

2.2.2 Review of Independent Study in Nepal

The study conducted by Radhe Shyam Pradhan (1986) in a topic of "The demand for cash by corporations" has been useful to take knowledge regarding demand of cash.

There are two studies in which one is conducted by Radhe Shyam pradhan and Kundan Dutta Koirala in a topic of "Aspects of working capital management in Nepalese Corporations." Radhe Shyam pradhan conducts another in a topic of "Demand for working capital by Nepalese Corporations" .

Above studies has provide us a little but more knowledge for our research purpose. Reviewing various books, journals, and thesis.

2.3 Review of Previous Research Work

In this section an attempt has been made to review some thesis / dissertation and there related publications related to cash management. Only four dissertations have been found which are written on cash management in different categories in Nepal. No on dissertation has shown the significant result. In other word, cash management was found on very weak position in Nepalese companies.

Bajracharya, (1990) has studied the "*cash management practices in Nepalese public enterprises*"; he has taken 18 enterprises as a sample. According to his study, he concluded that,

- i. Cash management in public enterprises of Nepal is primarily based in the traditional practices, lacking in a scientific approach. A more serious aspect of cash management has been the any formalized system of cash planning and cash budgeting in many of enterprises, although the executive of some enterprises do have the practices of forecasting cash requirements on a formal basis.
- ii. Modern practices with respect to debt collection, monitoring the payment behavior of customers and relevant banking arrangement in connection with collection of receivable have been virtually ignored in May enterprises.
- iii. Majority of the enterprises didn't face a serious liquidity problem. However, this was not because of the effectiveness of cash planning and budgeting. The problem of liquidity actually didn't arise due to the coincidence of delay in payment to creditors.
- iv. By and large most enterprises have periodic accumulation of surplus cash and corresponding cash shortage from time to time. However, non of the enterprises

considered the Implications of holding idle cash balance and few took in to account the potential benefit of consider the cost of administering such investments.

- v. There had been wide variation over time in the state of financial health of enterprises in terms of the composition of current assets to current liabilities as revealed but the relevant financial ratios.
- vi. Neither nether interest rate nor the rate of inflation had any effect on the cash balance. Further there was very little evidence of effect of economy of scale on cash balance holding in most cases.

Further he recommended for developing appropriate strategies for cash management. He stressed on cash planning and budgeting to cash project cash surplus and cash deficit. Firm can accelerate the inflows as far as possible to decelerate out flow. He also stressed to maintain optimal level of cash and at last, it can be better to invest idle fund in marketable securities.

Similarly, **pradhan (2005)** conducted a research on topic “*cash management in STCL*”,

His major findings,

- i. STCL could not make the best are of available cash balance prudently.
- ii. The cash collection efficiency in this corporation is very low.
- iii. The collection of trade credit in the corporation is low during three years of study period.
- iv. Management has taken liberal credit policy; to sales of goods . Hence the cash and bank balance of study period is minimum AR.
- v. No, optimum cash balance is maintained. The cash and bank balance with inspect to current assets has been fluctuating trend. Similar in the case with respect to the total assets.

His major recommendations:

- a) Efficient management of cash
- b) Prepare monthly trail balance cash, fund statement and finical report.
- c) Design the effective A/R management adopts efficient credit policy.
- d) Invest surplus cash in profitable opportunities
- e) Prepare cash budge
- f) Maintain optimum cash balance
- g) Investment in marketable securities

Another research which submitted has been found to make the study easier. This study has concerned on “*cash management in public manufacturing enterprises of Nepal: a case study of Royal Drugs*” and studied by **Sanju (2005)**. Over ally, he concluded the poor cash Royal Drugs management practice of Royal Drugs limited.

His major findings:

- i. Overall cash management practices has been found disappointing
- ii. Overall liquidity position of the firm has been found moderately dissatisfactory
- iii. Overall, yearly cash inflow and out flow in RDL is not properly managed. surplus cash hasn't been properly employed to earn return but investing in short term investment opportunities
- iv. Profitability has been found in very weak position.
- v. Overall cash budgeting practice of RDL in very poor.

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

These studies were not able to represent overall status of the companies. So that the effort has been make on the study of cash management in listed manufacturing companies with taking 2 companies as a sample. Identification of cash conversion cycle is the uniqueness of the study.

Finally, the study of cash management in manufacturing companies has not been done yet. So that the researcher has chosen this topics “An analysis of cash management of manufacturing companies.”

Raymajhi (2006) conducted a study under topic "*Cash management of Nepalese Commercial Banks.*" Sample companies under study are NABIL Bank Ltd. and Himalayan Bank Ltd.

His major objectives:

-) To present overall cash management picture of the selected commercial banks in Nepal.
-) To examine their demand of cash.
-) To critically analyze the cash management techniques practiced by the commercial banks.

Secondary data are used for the research purpose. Various ratios and statistical used for data analysis purpose. Data from 2000/01 to 2004/05 are used. Major findings of the study are:

Analysis of cash turnover, share is no fixed trend (increasing/decreasing) of cash turnover for these banks during the study period.

Analysis of average collection period shows among five listed commercial banks SCBL and NABIL have less average collection days whereas HBL and EBL have more average collection days in the study period.

Regression analysis revealed that there was little effect of the opportunity cost of holding cash on the cash balances held by the banking sector. Neither interest rate nor the rate of inflation had any effect on the cash balance. Further there was very little evidence of the effect of economy of scale.

His major recommendations:

-) Cash planning and cash budget is needed on a formal basis so as to project cash surplus or cash deficit for a period not exceeding one year and broken up into shorter intervals.
-) Cash planning manager or experts should be appointed. The lack of knowledge of modern financial management tools and techniques among existing employees in the banking sector is one of the causes of poor financial performance of the banks. Therefore, commercial banks must ensure to upgrade the current financial management skills.

Kunwar, (2007) conducted a research on topic, "*Cash management of manufacturing companies.*"

He has studied cash management of five manufacturing companies: Nepal Lever Ltd., Nepal Lube Oil Ltd., Bottler Nepal (Terai) Ltd, Nepal Banaspati Ghee Ltd. and Raghupati Jute Mill Ltd. Major objectives of the study are to identify the liquidity position, relationship of cash with other influencing variables of cash and analysis of cash conversion cycle. Mainly secondary data are used, for analysis ratio analysis like current ratio; cash turnover ratio etc and statistical tools like mean, standard deviation, coefficient of variation and correlation coefficient are used for data analysis purpose. Data from 2002 to 2006 are used.

His major findings:

A listed manufacturing company doesn't have any definite policy regarding how much cash balance to hold in each period. Companies have not been able to trade off liquidity and profitability. The CR and NPM are found with insignificant correlation. Companies are not able to collect cash in considerable time span. The average cash conversion cycle of manufacturing companies has been obtained to be 114 days. Due to the high inventory conversion period the result was seen as not satisfactory.

Conclusion derived from this research is cash management being the major element in financial function. It is said that the main function of financial manager is to apply better techniques to improve cash management in companies. There are other

numerous aspects 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 resources management, organizational structure marketing management etc. However, all down falling trend of the 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 recommendations suggested above could to a greater extent, uplift the listed manufacturing companies cash management situation.

He recommends 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 considerable period. Inventory conversion period was 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.

Research Gap

Since the above mentioned studies offer limited findings, more extensive testing , and adjustment of necessary variables are needed in ordered to be more conclusive about the cash management of manufacturing companies.

Presently, this study aims to attempt to study about cash management of manufacturing companies. The previous relevant literature related to cash management has just reviewed to support the study. This study tries to fulfill this weakness. And there is also less research made in this topic especially in manufacturing sector.

The present study is based on five years data of manufacturing companies, which tries to achieve its objectives by analyzing secondary as well as primary source of data. Thus, the earlier studies on these issues need to be updated and validated because of the many changes taking place in Nepalese manufacturing sector. The current study is a supplement to overcome the weakness and limitation of previous studies.

CHAPTER -III

RESEARCH METHODOLOGY

3.1 Introduction

Methodology states the method with which data have been extracted and discuss the tools of that have been used in interpretation of such data to fulfill the objectives. More specifically, it describes about the research design. The population and sample nature of source of data and tools that will be used to analyze data.

3.2 Research Design

The research study attempts to analyze the cash management techniques adopted by the manufacturing companies in Nepal. Hence, analytical and descriptive research is applied. Descriptive research is essentially a fact finding approach relative largely to present and abstracting generalization by the cross section study of the current situation. Analytical approach is followed to parametric and non parametric test of data. It is the process of micro analysis and appraisal to the data

3.3 Population and Sample

The total numbers/ population of the manufacturing companies which are listed in Nepal Stock exchange of Nepal are 10, with different nature of production. Among them only two manufacturing companies ate selected as a sample for the study. They are:

- i. Bottlers Nepal ltd.
- ii. Unliver Nepal limited.

3.4 Nature and Sources of Data

Only secondary data are collected for the study. Financial statement, such as balance sheet and profit sheet and profit and loss account of the companies are major source of data.

The major sources of information collections are as follows:

- Annual reports of related companies and security board of Nepal.
- Financial statistics of listed companies, published by security board of Nepal.
- Journals, government and non-government publication other supportive books a mostly
- Website of the companies.

- Other related published and unpublished documents.

3.5 Methods of Data Analysis

Only financial and statistical tools are use for the analysis of data which is already stated in the limitation f the study. The producers of analyzing data are described as follows:

3.5.1 Financial Tools and Techniques

The focus of financial analysis is on key figures in the financial statements and the significant relationship that exist between them. The analysis of financial statements is a process of evaluating the relationship between component parts of financial statements to obtain a better understanding the firm's position and performance. Financial analysis is the process of selection, relation and evolution.

A. Ratio Analysis

i) Liquidity Ratio

Analysis of Current Ratio

This ratio examines the short term solvency, i.e. liquidity position of the firm. The higher the current ratio, the larger is the amount of rupee available per rupee of current liability, the more is the firm's ability to meet current obligations and the greater is the safety of funds of short term creditors. The ideal current ratio is 2:1 lesser the ratio indicates the lower liquidity position of the firm.

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

Analysis of Quick Ratio/ Acid – Test Ratio

It is a measure of liquidity designed to overcome the defect of current ratio. It is often referred as a quick ratio because it is a measurement of a firm's ability to convert its current assets quickly in to cash in order to meet current liabilities. The ideal quick ratio is 1 : 1

$$\text{Quick Ratio} = \frac{\text{quick assets}}{\text{Current liabilities}}$$

Where,

$$\text{Quick assets} = \text{current assets} - \text{inventory}$$

ii) Turn -Over Ratio

Cash Turnover Ratio

Cash turnover ratio explains how quickly the cash is received from the sales, or in other words it measures the speed with which cash moves through a company's operation.

Cash turnover ratio is obtained by the following:

Formula,

$$\text{Cash turnover ratio} = \frac{\text{Sales}}{\text{Cash in Hand} + \text{Bank Balance}}$$

Inventory Turnover Ratio

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

Mathematically,

$$\text{Inventory Turnover Ratio} = \frac{\text{Sales}}{\text{Closing Inventory}}$$

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

Receivables Turnover Ratio

Receivables turnover ratio shows how quickly receivables or debtors are converted into cash. In other words, the receivables turnover ratio is the test of liquidity of debtors of a firm. Symbolically,

$$\text{Receivables Turnover Ratio} = \frac{\text{Sales}}{\text{Receivables}}$$

Receivable Collection period / Average Collection Period

$$\text{Receivable Collection period} = \frac{\text{Days in a Year}}{\text{Receivable Turnover Ratio}}$$

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 high 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.

iii) Cash and Bank Balance to Other Aspects

Cash & Bank Balance to Current Liabilities

It calculates the cash balance available with the firm in meeting payment of current liabilities. A moderately higher ratio indicates good liquidity. Too high and too low ratio

is 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,

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

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 the best. Too much high measures the idle cash which is loosing opportunity income and vice versa

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

Cash and Bank Balance to Current Assets

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

C) Cash Conversion Cycle

It measures the length of time between when the company makes payment and it receive cash. Lower the conversion cycle is preferable.

Mathematically,

$$\text{Cash conversion cycle} = \frac{\text{Inventory Conversion Period}}{\text{Inventory Conversion Period}} + \frac{\text{Inventory Conversion Period}}{\text{Inventory Conversion Period}} - \frac{\text{Payable Deferral Period}}{\text{Payable Deferral Period}}$$

Payable deferral period is calculated as,

$$\text{Payable Deferral Period} = \frac{\text{A/C payable} * \text{days in year}}{\text{Cost of Good Sold}}$$

Higher the payable deferral period is preferred but credit rating of the companies towards suppliers must be maintained.

Average Collection Period

$$\text{Average Collection Period} = \frac{\text{receivable} * 360}{\text{Sales}}$$

3.5.2 Statistical tools

Statistical tools are the measures or the instruments to analyze the collected data from different sources. In statistics, there are numerous tools to analyze data of various natures. In this study, the researcher has used the following statistical tools to analyze the data:

Average/Mean

An average is a single value related from a group of values to represent them in some way, a value, which is supposed to stand for whole group of which it is a part, as typical of all the values in the group. There are various types of averages. Arithmetic

mean (AM, Simple & Weighted), median, mode, geometric mean, harmonic mean are the major types of averages. The most popular and widely used measure representing the entire data by one value is the AM. The value of the AM is obtained by adding together all the items and by dividing this total by the number of items.

Mathematically:

Arithmetic Mean (AM) is given by,

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

Where, \bar{X} = Arithmetic mean

$\sum X$ = Sum of all the values of the variable X

n = Number of observations

Standard Deviation

The standard deviation (σ) measures the absolute dispersion. The greater the standard deviation, the greater will be the magnitude of the deviations of the values from their mean. A small standard deviation means a high degree of uniformity of the observations as well as homogeneity of a series and vice versa.

Mathematically:

$$\sigma = \sqrt{\frac{1}{n} \sum (X - \bar{X})^2}$$

Coefficient of Variation

The standard deviation is absolute measures of dispersion; where as the coefficient of variation (CV) is a relative measure. To compare the variability between two or more series, CV is more appropriate statistical tool.

Mathematically,

$$CV = \frac{\sigma}{\bar{X}} \times 100$$

Correlation Coefficient

When the relationship is of quantitative nature, the appropriate statistical tool for discovering and measuring the relationship and expressing it in a brief formula is known as correlation. If the values of the variables are directly proportional then the correlation is said to be positive. On the other hand, if the values of the variables are inversely proportional, the correlation is said to be negative, but the correlation is said to be negative, but the correlation coefficient always remains within the limit of + 1 to - 1. By Karl Pearson, the simple correlation coefficient (between two variables, say X and Y) is given by:

$$r_{xy} = \frac{\text{Cov}(x, y)}{\sigma_x \sigma_y}$$

Where,

r_{xy} = is the correlation coefficient between two variables x & y

'r' lies between +1 to -1

When $r = +1$, there is perfect positive correlation

When $r = -1$, there is perfect negative correlation

When $r = 0$, there is no correlation

When r lies between 0.7 to 0.999 9 (or -0.7 to -0.999), there is high degree of positive or negative correlation

When r lies between 0.5 and 0.699, there is moderate degree of correlation

When r is less than 0.5, there is low degree of correlation.

Simple Regression

Regression and correlation analysis are the techniques of studying how the variations in one series are related to the variations in another series. Measurement of the degree of relationship between two or more variables is called correlation analysis and using the relationship between a known variable and an unknown variable to estimate the known one is termed as regression analysis. Thus, correlation measures the degree of relationship between the variables while regression analysis shows how the variables are related. Thus, regression and correlation analysis determines the nature and the strength of relationship between variables.

The equation of regression line where the dependant variables Y is determined by the independent variable X is given by:

$$Y = a + b x$$

$a = y - \text{intercept}$

Where:

$b =$ slope of the regression line (i.e. it measures the change in Y per unit X) or regression coefficient of Y on X .

Multiple Regressions

Assuming that all variables are closely related, we can estimate the unknown value of one variable from the given or known values of the other variables. Multiple regression analysis is a logical extension of the simple linear regression analysis. In multiple regression analysis, instead of single independent variable, two or more independent variables are used to estimate the unknown values of dependant variables. The multiple regression equation describes the average relationship between dependant variable and two or more independent variables and this relationship is very much useful for estimating (or predicting) the dependant variable. Thus, the multiple regression equation of X_1 on X_2 , X_3 and X_4 is an equation for estimating a dependant variable X_1 , from three independent variables X_2 , X_3 and X_4 .

The multiple regression equation of dependant variables X_1 on three independent variables X_2 , X_3 & X_4 is given by:

$$X_1 = a + b_1x_2 + b_2x_3 + b_3x_4$$

Where,

$a = x_1$ – intercept = the value of x_1 when three independent variables x_2 , x_3 and x_4 are zero.

b_1 = the partial regression coefficient of x_1 on x_2 when x_3 & x_4 are held constant

b_2 = the partial regression coefficient of x_1 on x_3 , when x_2 & x_4 are held constant

b_3 = the partial regression coefficient of x_1 on x_4 , when x_2 & x_3 are held constant

Coefficient of Determination

The coefficient of determination gives the percentage variation in the dependant variable that is accounted for by the dependant variable/s. In other words, the coefficient of determination gives the ratio of expected variance to the total variance.

The coefficient of determination is given by the square of the correlation coefficient, i.e. r^2

$$\text{So the coefficient of determination} = r^2 = \frac{\text{Expected variance}}{\text{Total variance}}$$

CHAPTER –IV

PRESENTATION AND ANALYSIS OF DATA

The presentation and analysis of data section is the main text the study to find out answer of research question and get objectives of the study. For the purpose of presentation of data, the published most recent financial statements of the listed companies of the study are analyzed. The collected and tabulated data have been analyzed using different financial and statistical tools. This chapter includes presentation, analysis and integration of collected data with organizing sequentially as per the objectives of the study.

4.1 Analyses 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.

The following table presents the level of cash, in sampled manufacturing companies, and the average, during the study period.

Table :4.1
Level of Cash and Bank Balance of selected manufacturing Companies

Level of Cash balance							
Ye Year	BNL			Ye Year	UNL		
	CB (X)	(X- E X)	(X-EX) ²		CB (X)	X- E X	(X-EX) ²
2004/05	46,015	20,075	403005625	2004/05	62,335	-214,716	46102874770
2005/06	22,165	-3,775	14250625	2005/06	317,404	40,353	1628380750
2006/07	25,190	-750	562500	2006/07	319,532	42,481	1804652353
2007/08	14,856	-11,084	122855056	2007/08	443,311	166,260	27642454104
2008/09	21,474	-4,466	19945156	2008/09	242,672	-34,379	1181901889
	129,700		560618962		1,385,254		78360263867
Average	25,940		140154740.5	Average	277,051		19590065967
		SD	11838.69674			SD	139964.5168
		CV	0.456387692			CV	0.505194415

Source: Annex I

The average cash balance held by BNL is 25950 and UNL is 277051. The cash balance of two companies varied widely in all year of study period. Here UNL hold more cash balance than that of BNL. Cash holding of BNL is highest in the fiscal year 2004/05 i.e. 46015 and lowest in the fiscal year 2007/08 i.e. 14856. BNL cash balance has been observed in a wide variation in different period of study poses high fluctuation on cash holding pattern.

Cash holding pattern of UNL ranges highest of 443331 in the fiscal year 2007/08 and lowest 62335 in the fiscal year 2004/05. Cash balance of UNL also has been observed in a wide variation and poses high fluctuation on cash holding pattern.

4.1.1 Analysis of changes in Cash Balance

Table: 4.2
Analysis of change in cash balance

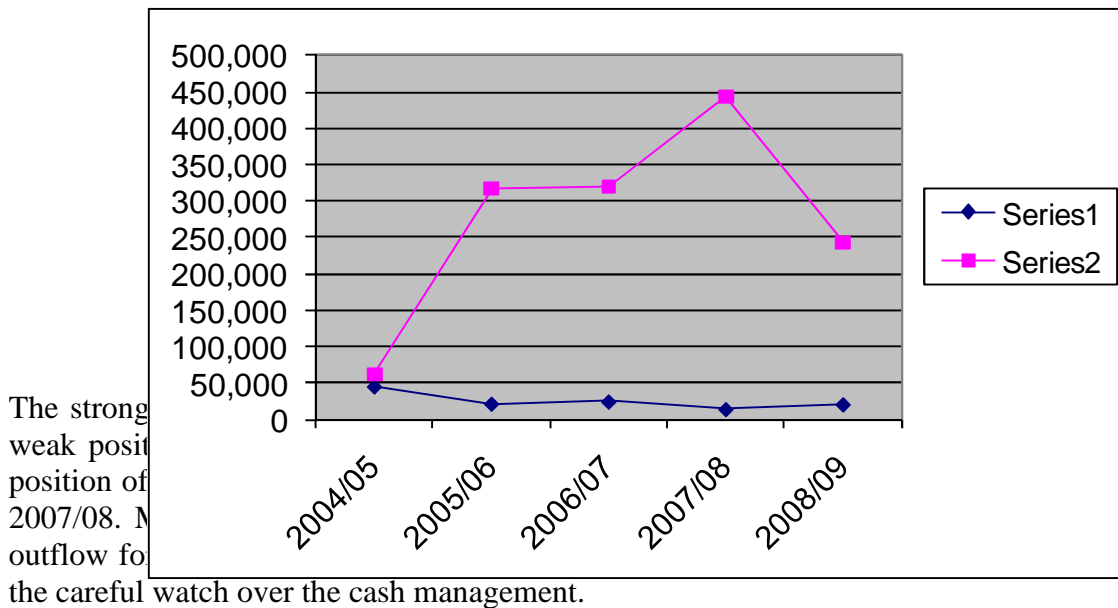
Year	BNL		UNL	
		Change in %		Change in %
2004/05	46,015		62,335	
2005/06	22,165	-0.5183	317,404	4.091907
2006/07	25,190	0.1365	319,532	0.006704
2007/08	14,856	-0.4102	443,311	0.387376
2008/09	21,474	0.4455	242,672	-0.45259

Source: Annex I

Above table shows the fluctuating trend in study period for both UNL and BNL. While for Maximum increase in holding cash for UNL is 409.19% and for BNL is 44.55% and a decrease in holding for UNL is -45.26% and for BNL is -51.83%.

4.1.2 Graphical Presentation of Cash Balance

Figure: 4.1
Cash and Bank balance of UNL and BNL



4.2 Cash and Sales

4.2.1 Analysis of cash turnover ratio

The cash balance of the company should be optimum to meet its current obligation in course of daily business transaction. The cash turnover ratio explains how quickly cash is received from the sales; in other words it measures the speed with which cash move through an enterprise's (company's) operation. Higher ratio represents sound liquidity and vice-versa. However, too high ratio indicates excess cash balance being held idle.

Table: 4.3
Cash Turnover Ratio of selected Manufacturing Companies

Cash Turnover Ratio							
BNL				UNL			
Year	CTR (X)	X- E X	(X-EX) ²	Year	CTR (X)	X- E X	(X-EX) ²
2004/05	10.03	-8.25	68.00	2004/05	19.83	12.24	149.94
2005/06	21.00	2.72	7.42	2005/06	3.92	-3.66	13.42
2006/07	16.84	-1.43	2.05	2006/07	4.77	-2.81	7.91
2007/08	27.01	8.74	76.37	2007/08	3.34	-4.24	18.00
2008/09	16.49	-1.79	3.19	2008/09	6.06	-1.53	2.33
	91.38		157.02		37.92		191.59
Average	18.28	S.D	6.27	Average	7.58	S.D	6.92
		C.V	0.34			C.V	0.91

Source: Annex I

Erratic fluctuations have been observed in cash turnover ratio of manufacturing companies. Fluctuation of cash turnover ratio is the indication of no definite policy on holding cash balance in relation to sales volume, is applied by selected manufacturing companies of Nepal. Average cash turnover ratio of BNL and UNL are 18.28 and 7.58 respectively. Cash turnover ratio of BNL varies highest 21 in the fiscal year 2005/06 to lowest 10.03 in the fiscal year 2004/05. Similarly cash turnover ratio of UNL varies highest 19.83 in the fiscal year 2004/05 to lowest 3.35 in the fiscal year 2007/08. From the above we can conclude that cash turnover ratio varied widely across the companies in all the year of study period.

As a fact the higher turnover ratio of cash indicates the sound liquidity position of the company and vice versa, but too much ratio indicates the excess cash balance being held idle. The fluctuating of this ratio interprets that the cash management practices of the companies has not done by any definite policy and any planned approach.

4.2.2 Analysis of the relation between Cash (y) and Sales (x)

	Coefficeint of correlation (r)	Relationship	Coefficeint of determination (r ²)	P.E.	Remarks
UNL	0.58	Positive	0.34	0.20	Insignificant
BNL	0.53	Positive	0.28	0.22	Insignificant

Source: Annex-II

To analyze the relationship between cash (y) and sales (x), Karl Pearson's correlation coefficient has been observed to be 0.5315 of BNL and 0.5818 of UNL. which, it indicates the positive relationship between cash and sales of UNL and BNL. To make

confirm, whether it is real or not selected companies, it is compared with probable error and $r < 6PE$ of BNL indicates that the correlation coefficient is not practically certain i.e. the value of r is not significant, it is said that it is not sure that of increment of one may not increase in other. Similarly, correlation coefficient of UNL (r) less than $6PE$ indicates that the correlation coefficient between cash and sales is not practically certain. That is the value of r is not significant.

4.3 Analysis of cash to total assets ratio

Investment in money assets differs not only from the industry to another but it also varies from one company to another within the same company thus making cash management task is more difficult.

Table: 4.4
Cash to total assets ratio

Cash to Total Assets Ratio							
BNL				UNL			
Year	CTAR (X)	X- E X	(X-EX) ²	Year	CTAR (X)	X- E X	(X-EX) ²
2004/05	0.07	0.02	0.00	2004/05	0.11	-0.19	0.04
2005/06	0.03	-0.01	0.00	2005/06	0.40	0.10	0.01
2006/07	0.05	0.00	0.00	2006/07	0.34	0.04	0.00
2007/08	0.02	-0.02	0.00	2007/08	0.40	0.10	0.01
2008/09	0.05	0.01	0.00	2008/09	0.25	-0.05	0.00
	0.22		0.00		1.51		0.06
Average	0.04	S.D	0.02	Average	0.30	S.D	0.12
		C.V	0.37			C.V	0.41

Source: Annex I

Above table shows the cash to total assets ratio of selected manufacturing over the study period. The average investment in cash by BNL and UNL has been observed to be 0.04 and 0.30 respectively.

According to above table same individual company's cash to total assets ratio has been observed in widely fluctuation trend in different study period. The ratio was highest for BNL i.e 0.07 in the fiscal year 2005/06 and lowest 0.02 in the fiscal year 2007/08. Similarly ratio of UNL was highest of 0.40 in the fiscal year 2005/06 and 2007/08 and lowest of 0.11 in the fiscal year 2004/05.

The strong variation in cash to total assets ratio explains that the company has not been adopted specific policy for investment of cash in total assets.

4.3.1 Analysis of the relation between Cash (x) and Total Assets (y)

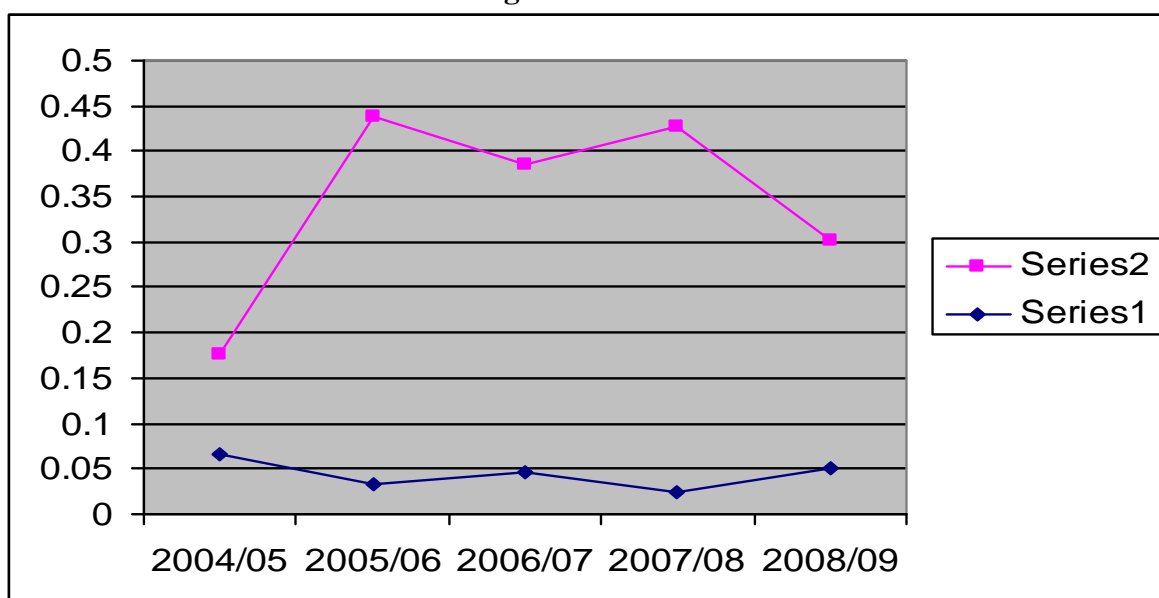
	Coefficeint of correlation (r)	Relationship	Coefficeint of determination (r ²)	P.E.	Remarks
UNL	0.87	Positive	0.76	0.07	Significant
BNL	0.42	Positive	0.17	0.25	Insignificant

Source: Annex-III

To analyze the relationship between cash (y) and sales (x), Karl Pearson's correlation coefficient has been observed to be 0.42 of BNL and 0.87 of UNL. Generally, it indicates the positive relationship between cash and sales of UNL and BNL. To make confirm, whether it is real or not selected companies, it is compared with probable error and $r < 6PE$ of BNL indicates that the correlation coefficient is not practically certain i.e. the value of r is not significant, it is said that it is not sure that of increment of one may not increase in other. Similarly, correlation coefficient of UNL $r > 6PE$, indicates that the correlation coefficient between cash and sales is not practically certain. That is the value of r is significant.

4.3.2 Graphical presentation of cash to total assets ratio

Figure 4.2



4.4 Cash and bank balance and current assets

4.4.1 Analysis of cash and bank balance to current assets ratio

Cash is the liquid current asset and as such more the amount of cash balance in a company, more liquid the company, liquid the company in meeting the current obligation. However bearing excess cash signifies cash balance being held idle without any motive.

Table: 4.5

Cash to Current Assets Ratio of Selected Manufacturing Companies

Cash to Current Assets Ratio							
BNL				UNL			
Year	CCAR (X)	X- E X	(X-EX) ²	Year	CCAR (X)	X- E X	(X-EX) ²
2004/05	0.08	0.02	0.00	2004/05	0.16	-0.23	0.05
2005/06	0.04	-0.02	0.00	2005/06	0.54	0.15	0.02
2006/07	0.06	-0.01	0.00	2006/07	0.44	0.05	0.00
2007/08	0.05	-0.02	0.00	2007/08	0.50	0.11	0.01

2008/09	0.10	0.03	0.00	2008/09	0.32	-0.07	0.01
	0.33		0.00		1.95		0.10
Average	0.07	S.D	0.02	Average	0.39	S.D	0.15
		C.V	0.34			C.V	0.40

Source: Annex I

Above table shows the cash to current assets of selected manufacturing companies over the study period. The average cash to current assets ratio has been observed in selected manufacturing companies in study period are 0.07 percent and 0.39 of BNL and UNL respectively.

The ratio varied widely over the study period. Ratio of BNL varies highest of 0.10 percent in the fiscal year 2008/09 and lowest 0.04 in the fiscal year 2005/06. Similarly ratio of UNL varies highest of 0.54 in the fiscal year 2005/06 to lowest 0.16 in the fiscal year 2004/05.

The erratic fluctuation suggest that the companies haven't been following the definite policy regarding how much cash balance to hold at the end of fiscal year. However, UNL seems to more competent than of BNL on making payment of shorts term obligation, being the ratios greater.

4.4.2 Relationship between Cash and Current Assets

	Coefficient of correlation (r)	Relationship	Coefficient of determination (r ²)	P.E.	Remarks
UNL	0.87	Positive	0.75	0.07	Significant
BNL	0.69	Positive	0.47	0.16	Insignificant

Source: Annex-IV

The correlation coefficient between cash and current assets 'CA' has been obtained to be 0.69 and 0.87 of BNL and UNL respectively. It shows the positive relation between cash and current assets in UNL and negative relationship in BNL. There is not significant relationship of cash and current assets of BNL, in other word there is no evidence that cash and CA are correlated. i.e. $r < 6PE$, explain that it is not sure that increase in cash result to increase in current assets and vice- versa. But in case of UNL there is significant relationship between cash and current assets, that is cash and current are correlated. Here $r > 6PE$, explain that it is sure that increase in cash result to increase in current assets and vice- versa.

4.5 Cash and Current Liabilities

Among the technique of measuring corporate liquidity the ratio of cash to current liabilities indicates the amount of cash (in percentage) available to pay the current obligation of the firm. In general a low percentage of cash to current liabilities may be regarded and it may lead to corporate insolvency.

4.5.1 Analysis of Cash to Current Liabilities Ratio

This ratio indicates the amount of cash available to pay the current obligation of the firm.

Table: 4.6
Cash to Current Liabilities Ratio

Cash to Current Liabilities Ratio							
BNL				UNL			
Year	CCLR (X)	X- E X	(X-EX) ²	Year	CCLR (X)	X- E X	(X-EX) ²
2004/05	0.15	0.04	0.00	2004/05	0.28	-0.21	0.04
2005/06	0.08	-0.03	0.00	2005/06	0.74	0.26	0.07
2006/07	0.10	0.00	0.00	2006/07	0.59	0.10	0.01
2007/08	0.06	-0.04	0.00	2007/08	0.50	0.01	0.00
2008/09	0.14	0.03	0.00	2008/09	0.33	-0.16	0.03
	0.54		0.01		2.44		0.15
Average	0.11	S.D	0.04	Average	0.49	S.D	0.19
		C.V	0.34			C.V	0.39

Source: Annex I

Above table shows the cash to current liabilities ratio of selected manufacturing companies over the study period.

The average cash to current liabilities ratio of selected manufacturing companies have been observed 0.11 and 0.49 of BNL and UNL respectively. The ratio of cash to current liabilities varied widely over the study period that ratio of BNL varies highest of 0.14 in the fiscal year 2008/09 to lowest 0.06 in the fiscal year 2007/08. Similarly ratio of UNL varies with highest of 0.74 in 2005/06 to lowest 0.28 in the fiscal year 2004/05. Standard deviation and coefficient of variance shows ratio of BNL is less fluctuating in comparison to UNL.

The ratio was seen in highly fluctuating trend during the study period. It can be said that manufacturing companies has faced the problem of inefficient cash management practice.

4.5.2 Relationship between Cash and Current Liabilities

	Coefficeint of correlation (r)	Relationship	Coefficeint of determination (r ²)	P.E.	Remarks
UNL	0.78	Positive	0.61	0.12	Significant
BNL	0.61	Positive	0.37	0.19	Insignificant

Source: Annex-V

The correlation coefficient between cash and CL of BNL and UNL are 0.6112 and 0.7827 respectively. Here, positive relationship between cash (X) and CL (Y) of both companies. But it is not significant result for BNL because the result was seen to be $r < 6PE$. UNL it is significant i.e. $r > 6PE$, increase of one cause increase for other. It is the evidence the adequate (consistent) proportion of cash with CL has not been maintained by the UNL.

4.6 Cash and Quick Assets

4.6.1 Analysis of Cash and Quick Assets

Table: 4.7
Cash to Quick assets ratio

Cash to Quick Assets Ratio							
BNL				UNL			
Year	CQAR (X)	X- E X	(X-EX) ²	Year	CQAR (X)	X- E X	(X-EX) ²
2004/05	0.12	0.01	0.00	2004/05	0.24	-0.29	0.09
2005/06	0.06	-0.05	0.00	2005/06	0.68	0.15	0.02
2006/07	0.11	0.00	0.00	2006/07	0.59	0.05	0.00
2007/08	0.08	-0.03	0.00	2007/08	0.67	0.13	0.02
2008/09	0.18	0.07	0.01	2008/09	0.50	-0.04	0.00
	0.56		0.01		2.69		0.13
Average	0.11	S.D	0.05	Average	0.54	S.D	0.18
		C.V	0.43			C.V	0.33

Source: Annex I

Above table shows cash to quick assets ratio of selected manufacturing companies over the study period.

The average cash to quick assets ratio of selected manufacturing companies BNL and UNL are 0.11 and 0.54 respectively. The ratio of cash to quick assets varied widely over the study period that ratio of BNL varies highest of 0.18 percent in the fiscal year 2008/09 to lowest 0.06 in the fiscal year 2005/06. Similarly ratio of UNL varies with highest of 0.68 to lowest 0.24 in the fiscal year 2004/05. Standard deviation and coefficient of variance shows ratio of UNL is less fluctuating in comparison to BNL.

4.6.2 Relationship between Cash and Quick Assets

	Coefficeint of correlation (r)	Relationship	Coefficeint of determination (r ²)	P.E.	Remarks
UNL	0.97	Positive	0.94	0.02	Significant
BNL	0.62	Positive	0.38	0.19	Insignificant

Source: Annex-VI

The correlation coefficient between cash (X) and QA (Y) of BNL and UNL are 0.62 and 0.97 respectively. There is positive relationship between cash and quick assets of both companies. But it is not significant result for BNL because the result was seen to be $r < 6PE$. So, it is explained increase of one cause may not be increase for other. But, in case of $r > 6PE$. It is the proof that it has significant relationship between cash and quick asset; it shows positive relationship between cash and QA.

4.7 Relationship between cash and net profit

	Coefficeint of correlation (r)	Relationship	Coefficeint of determination (r ²)	P.E.	Remarks
UNL	0.55	Positive	0.31	0.21	Insignificant
BNL	0.51	Positive	0.26	0.22	Insignificant

Source: Annex-VII

The correlation coefficient between cash (X) and net profit (Y) of BNL and UNL are 0.51 and 0.55 respectively. There is positive relationship between cash and quick assets of both companies. But it is not significant result for both companies because the result were seen to be $r < 6PE$. So, it is explained increase in cash may not be increase net profit of both companies and vice- versa.

4.8 Analysis of Liquidity Position

Liquidity of a firm indicates the position to meet its current / short term obligation when it becomes due for payment. Thus, in cash management, the study of liquidity posits and therefore such firms get their short term requirements readily. however , too much liquidity or in other words , holding more than enough cash balance to meet its current payment is also an indication of mismanagement of cash because such cash balances remained after meeting payments would remain idle. So an optimum liquidity is the necessity of the firm.

The liquidity ratios measure the ability of the companies to meet their short term obligations and reflect the short term financial strength of a firm.

4.9. Current Assets and Current Liabilities

4.9.1. Analysis of Current Ratio

One of the reliable methods to examine liquidity position of the companies is by means of current ratio. It is calculated by dividing current assets with current liabilities. the standard current ratio is to be measured by 2:1 however , the depending upon the nature of the companies, the development of capital market and availability of long term funds to finance current assets, the satisfactory ratio varies.

Table: 4.8
Current Ratio of BNL and UNL

Current Ratio

Ye Year	BNL			Year	UNL		
	CR (X)	X- E X	(X-EX) ²		CR (X)	X- E X	(X-EX) ²
2004/05	1.84	0.19	0.03	2004/05	1.79	0.48	0.23
2005/06	1.90	0.25	0.06	2005/06	1.38	0.08	0.01
2006/07	1.81	0.16	0.02	2006/07	1.33	0.02	0.00
2007/08	1.26	-0.39	0.15	2007/08	1.01	-0.30	0.09
2008/09	1.44	-0.21	0.04	2008/09	1.03	-0.28	0.08
	8.26		0.32		6.54		0.40
Average	1.65	S.D	0.28	Average	1.31	S.D	0.32
		C.V	0.17			C.V	0.24

Source: Annex I

Above table shows the current ratio of selected manufacturing companies over the study period. The average current ratios during the study period have been studied 1.65 and 1.31 times respectively of BNL and UNL. There is no wide varies on the current ratio. However both companies are unable to meet the standard ratio of 2:1 current ratio. But, BNL perform best than that of UNL in terms of current ratio.

4.9.2 Relationship between Current Assets & Current Liabilities

	Coefficeint of correlation (r)	Relationship	Coefficeint of determination (r ²)	P.E.	Remarks
UNL	0.97	Positive	0.95	0.02	Significant
BNL	0.92	Positive	0.85	0.04	Significant

Source: Annex-VIII

The correlation coefficient between CA (X) and CL (Y) of BNL and UNL are 0.92 and 0.97 respectively. There is high degree positive relationship between current assets and current liabilities for both companies. And there is significant result for both companies because the result were seen to be $r > 6PE$. There is significant relationship between current assets and current liabilities of both companies.

4.9.3 Quick Assets and Current Liabilities

4.9.3.1 Analysis of Quick ratio

The quick ratio is more reliable measure of liquidity than current ratio. The preferable ratio is 1:1.

Table: 4.9
Quick ratio of BNL and UNL

Quick Ratio							
	BNL				UNL		
Year	QR (X)	X- E X	(X-EX) ²	Year	QR (X)	X- E X	(X-EX) ²
2004/05	1.26	0.24	0.06	2004/05	1.14	0.22	0.05
2005/06	1.41	0.39	0.16	2005/06	1.09	0.16	0.03
2006/07	0.91	-0.11	0.01	2006/07	0.99	0.07	0.00
2007/08	0.76	-0.26	0.07	2007/08	0.75	-0.18	0.03

2008/09	0.75	-0.27	0.07	2008/09	0.65	-0.27	0.07
	5.09		0.36		4.63		0.18
Average	1.02	S.D	0.30	Average	0.93	S.D	0.21
		C.V	0.30			C.V	0.23

Source: Annex I

Above table shows the quick ratio of selected companies over the study period. The average quick ratio of the companies during the study period has been observed 1.02 and 0.93 times. Here both companies were showing strong liquidity position i.e. BNL has higher the standard ratio of 1:1 and UNL is slightly below the standard ratio.

4.9.4 Relationship between Quick Assets and Current Liabilities

	Coefficient of correlation (r)	Relationship	Coefficient of determination (r ²)	P.E.	Remarks
UNL	0.89	Positive	0.79	0.06	Significant
BNL	0.90	Positive	0.81	0.06	Significant

Source: Annex-IX

The correlation coefficient between quick assets and current liabilities of BNL and UNL are 0.9021 and 0.8902 respectively. Here, positive relationship between cash (X) and CL (Y) of both companies. But it is significant result for both companies because the result was seen to be $r > 6PE$. So, it is explained increase of one cause increase for other. It is the evidence the adequate (consistent) proportion of quick assets with current liabilities has been maintained..

4.10 Analysis of Account Receivable

The company sells goods in credit and cash basis when the company extends credited. Debtor/ account receivable are to be converted into cash over a short period and therefore are included in current assets. The liquidity position of the company depends upon the quality of debtors to a great extent the investment of account receivable means the decrease the cash position of the company and vice versa.

Table: 4.10
Account receivable analysis of selected manufacturing companies

Change in receivable				
Year	BNL	Change	UNL	Change
2004/05	126,575	-	32163	-
2005/06	141,228	11.58	64775	101.40
2006/07	98,725	-30.10	97063	49.85
2007/08	57,246	-42.01	157721	62.49
2008/09	16,413	-71.33	138319	-12.30
	Average	-32.97	Average	50.36

Source: Annex I

Receivable	
BNL	UNL

Year	Receivable (X)	X- E X	(X-EX) ²	Year	Receivable (X)	X- E X	(X-EX) ²
2004/05	126,575	38537.6	1485146614	2004/05	32163	65845.2	4335590363
2005/06	141,228	53190.6	2829239928	2005/06	64775	33233.2	1104445582
2006/07	98,725	10687.6	114224793.8	2006/07	97063	-945.2	893403.04
2007/08	57,246	30791.4	948110314	2007/08	157721	59712.8	3565618484
2008/09	16,413	71624.4	5130054675	2008/09	138319	40310.8	1624960597
	440,187		10506776325		490,041		10631508429
Average	88,037	S.D	51251.2837	Average	98,008	S.D	51554.60316
		C.V	0.58			C.V	0.53

Source: Annex I

Above table shows the account receivable of selected companies over the study period. Average receivable of BNL is 88037 and it ranges highest of 141228 in the fiscal year 2005/06 and lowest in the fiscal year 2007/08 i.e. 16413 . The overall trend of account receivable of BNL doesn't show any clear direction. Average yearly change percentage is -32.97 % highest percentage change is in the fiscal year 2008/09 with -71.32% decrease and lowest in the fiscal year 2005/06 with 11.57% increase.

Average receivable of UNL is 98008 and it ranges highest of 157721 in the fiscal year 2007/08 and lowest in the fiscal year 2004/05 i.e. 32163. The overall trend of account receivable of BNL shows increasing trend. Average yearly change percentage is 50.36 % highest percentage change is in the fiscal year 2007/08 with 62.49% and lowest in the fiscal year 2008/09 with -12.30%.

Higher receivable explains the inadequate capacity for credit collection. It means the position of cash collection has been decreased. Similarly, the lower the position of AR shows the positive situation for credit collection.

So that the policy of the company about to receivable have not been seen in the consistent level. The increasing trend of AR interprets the companies were not able to collect account receivable so there would be the possibility of increasing bad debt. In other word the quality of the debtor's might be weekend, however the company's the company's receivable might be increased due to increment of net sales. The analysis suggests the company to develop proper credit policy for timely collection of receivable.

4.10.1 Analysis of Receivable Collection Period

Receivable collection period is the length of time m required to convert the firm's receivable in to cash, that is to collect cash following a sales.

Receivable collection period is determined by the help of receivable turnover ratio. It is the indication of efficiency of trade credit. Higher the turnover ratio shorter the collection period. The better is the trade credit management and the better is the liquidity of the debtors, on short collection period and high turnover ratio imply prompt payment by debtors. In general, therefore, short collection period is preferable.

Table: 4.11
Analysis of receivable collection period

Receivable Conversion period							
BNL				UNL			
Year	RCP (X)	X- E X	(X-EX) ²	Year	RCP (X)	X- E X	(X-EX) ²
2004/05	98.74	26.78	717.40	2004/05	9.37	-15.28	233.38
2005/06	109.23	37.28	1389.80	2005/06	18.73	-5.91	34.93
2006/07	83.76	11.81	139.39	2006/07	22.91	-1.73	2.99
2007/08	51.35	-20.60	424.47	2007/08	38.32	13.68	187.14
2008/09	16.69	-55.27	3054.54	2008/09	33.88	9.24	85.32
	360.00		5725.60		123.00		543.76
Average	72.00	S.D	37.83	Average	25.00	S.D	11.66
		C.V	0.53			C.V	0.47

Source: Annex XI

Above table shows the receivable collection period of selected companies over the study period. Average RCP in BNL has been observed to be 72 days. In the fiscal year 2004/05 RCP is 99 days, 109 days in 2005/06, 84 days in 2006/07, 52 days in 2007/08, and 16 days in 2008/09.

Average RCP in UNL has been observed to be 25 days. In the fiscal year 2004/05 RCP is 10 days, Similarly 18 days, 22 days, 38 days and 33 days respectively from fiscal year 2004/05 to 2008/09.

Above table shows that there was a wide variation on RCP for individual companies over the study period. The delay in collection of receivable would mean that, a part of interest cost involved in maintaining a higher level of debtors, and the liquidity position of the firm would be adversely affected. Similarly too short of RCP is not necessary good. while it is true that it avoids the risk of receivable being bad debts as well as burden of high interest on outstanding debtors, it many have an adverse effect on volume of sales of the firm .

4.11 Analysis of Inventory

A company requires an optimum level of inventory for efficient management. The incremental trend must be analyzed of r efficiently of cash management. The incremental trend of inventory would be the direct impact for lowering the cash in for company and increases. So that level of inventory and its trend must be analyzed for efficiency of cash management.

Table: 4.12
Analysis of inventory of BNL and UNL

Change in Inventory				
Year	BNL	Change	UNL	Change
2004/05	177,737	-	144447	-
2005/06	134,401	-24.38	126107	-12.70
2006/07	124,581	-7.31	184216	46.08
2007/08	119,274	-4.26	229765	24.73
2008/09	108,415	-9.10	256168	11.49

	Average	-11.26	Average	17.40
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Source: Annex I

Inventory							
BNL				UNL			
Year	Inventory (X)	X- E X	(X-EX) ²	Year	Inventory (X)	X- E X	(X-EX) ²
2004/05	177,737	44855.4	2.01E+09	2004/05	144447	43693.6	1.91E+09
2005/06	134,401	1519.4	2308576	2005/06	126107	62033.6	3.85E+09
2006/07	124,581	-8300.6	68899960	2006/07	184216	-3924.6	15402485
2007/08	119,274	13607.6	1.85E+08	2007/08	229765	41624.4	1.73E+09
2008/09	108,415	24466.6	5.99E+08	2008/09	256168	68027.4	4.63E+09
	664,408		2.87E+09		940,703		1.21E+10
Average	132,882	S.D	26772.17	Average	188,141	S.D	55074.99
		C.V	0.20			C.V	0.29

Source: Annex I

Above table shows the inventory level and its yearly of selected companies over the study period. The average inventory of BNL is 132882 and UNL 188141. The standard deviation are 26772.17 and 55075 and its covariance coefficient are 0.2015 and 0.2927 indicates that the company unable to adopt specific policy toward inventory management. In other word, there was no uniformity of inventory in each period of study.

Average yearly inventory level change percentage of BNL is -11.26%, UNL has yearly percentage change at inventory level is 17.39%.

4.11.1 Analysis of inventory conversion period

Inventory conversion period is the length of time required to convert raw material into finished goods and then to sell these goods. The period indicates the efficiency of the firm in selling its product. ICP is calculated by dividing number of year with inventory turnover ratio. Where inventory is turning in to receivable and cash through sales.

Table: 4.13
Analysis of inventory conversion period

Inventory Conversion period							
BNL				UNL			
Year	ICP(X)	X- E X	(X-EX) ²	Year	ICP (X)	X- E X	(X-EX) ²
2004/05	269.85	49.06	2407.09	2004/05	55.45	-17.35	300.97
2005/06	202.79	-18.00	323.83	2005/06	53.84	-18.96	359.40
2006/07	199.69	-21.09	444.95	2006/07	68.43	-4.37	19.10
2007/08	223.69	2.90	8.40	2007/08	88.20	15.40	237.08
2008/09	207.92	-12.87	165.66	2008/09	98.08	25.28	639.07

	1104.00		3349.95		364.00		1555.63
Average	221.00	S.D	28.94	Average	73.00	S.D	19.72
		C.V	0.13			C.V	0.27

Source: Annex XI

The above table shows the ICP of selected companies over the study period. There ICP was widely varied in the inventory conversion period of selected companies. Average ICP of BNL is 221 days and UNL is 73 days. ICP of BNL ranges highest in fiscal year 2004/05 i.e. 270 days and lowest in fiscal year 2006/07 200 days. ICP of UNL ranges highest in fiscal year 2008/09 i.e. 98 days and lowest in the fiscal year 2005/06 i.e. 54 days. The trend of ICP is fluctuating over the study period.

The research identified that BNL suffering from mismanagement of inventory system in other word there would be occurrence of over investment in inventory in period of study. There would be occurrence of either management inventory system or over investment inventories infact selected companies are running without adopting a policy of effective inventory management system.

4.12 Analysis of Payable

PDP is the length of time for payment of labor and purchases in each period of year lengthening the PDP, cash conversion cycle (CCC) is shortened: PDP is the indicator the speed of making payment of account payable. A high PDP is favorable for the company but too much long period hampers the credit worthiness of the company.

Table: 4.14
Analysis of Payable

Change in Payable				
Year	BNL	Change	UNL	Change
2004/05	162,296	-	96,594	-
2005/06	117,387	-27.671	247,008	155.7177
2006/07	157,452	34.1307	335,716	35.91301
2007/08	150,817	-4.21398	370,237	10.2828
2008/09	109,043	-27.6985	353,309	-4.57221
	Average	-6.36	Average	49.34

Source: Annex I

Payable							
BNL				UNL			
Year	Payable (X)	X- E X	(X-EX) ²	Year	Payable (X)	X- E X	(X-EX) ²
2004/05	162,296	22897	524272609	2004/05	96,594	-183979	33848198849
2005/06	117,387	22012	484528144	2005/06	247,008	33564.8	1126595799
2006/07	157,452	18053	325910809	2006/07	335,716	55143.2	3040772506
2007/08	150,817	11418	130370724	2007/08	370,237	89664.2	8039668762
2008/09	109,043	30356	921486736	2008/09	353,309	72736.2	5290554790
	696,995		2386569022		1,402,864		51345790707
Average	139,399	S.D	24426.26159	Average	280,573	S.D	113298.048
		C.V	0.175225515			C.V	0.403809806

Source:Annex I

Above table shows the account payable and its yearly variation of selected companies over the study period. The average payable of BNL is 139339 and UNL 280537. The

standard deviation are 24426.26 and 113298.05 and its covariance coefficient are 0.1752 and 0.4038 indicates that the company unable to adopt specific policy toward payable management. In other word, there was no uniformity of payable in each period of study.

Average yearly payable level change percentage of BNL is -6.36%, UNL has yearly percentage change at inventory level is 49.33%.

4.11.1 Analysis of Payable Deferred Period

Table: 4.15
Analysis of payable deferred period

payable deferred period							
BNL				UNL			
Year	PDP (X)	X- E X	(X-EX) ²	Year	PDP (X)	X- E X	(X-EX) ²
2004/05	246.41	12.83	164.65	2004/05	37.08	-71.85	5162.24
2005/06	177.12	-56.45	3187.07	2005/06	105.47	-3.47	12.01
2006/07	252.38	18.81	353.78	2006/07	124.71	15.78	248.97
2007/08	282.84	49.27	2427.24	2007/08	142.12	33.19	1101.66
2008/09	209.12	-24.45	597.98	2008/09	135.28	26.34	694.02
	1168.00		6730.72		545.00		7218.89
Average	234.00	S.D	41.02	Average	109.00	S.D	42.48
		C.V	0.18			C.V	0.39

Source: XI

The above table shows the PDP of selected companies over the study period. There PDP was widely varied in the inventory conversion period of selected companies. Average PDP of BNL is 234 days and UNL is 109 days. PDP of BNL ranges highest in fiscal year 2007/08 i.e. 210 days and lowest in fiscal year 2005/06 178 days. PDP of UNL ranges highest in fiscal year 2008/09 i.e. 136 days and lowest in the fiscal year 2001/03 i.e. 38 days. The trend of PDP is fluctuating over the study period.

4.12 Cash Conversion Cycle

The cc is the length of time between when the company makes payment and when it receive cash the CCC net its three periods i.e. ICP, RCP AND PDP, thus equal the length of time between the firm's actual expenditures for productive resources and its own cash receipts from the sale of products. Once the purchase of raw material is made the inventory conversion period determines the average number of days, it takes to produce and sell the product. The average collection period determines the average numbers of days it take to produce and sells the product. The average collection period determent the average number of days which makes the receivables is collected. Payable of cash is made for labor and suppliers. Hence, CCC is determined by differentiating the operating cycle and payable deferral period. Operating cycle is calculated by totaling the ICP and RCP. The CCC should be shortened as much as possible without hurting the operation. This would improve profit because shorter the CCC, the smaller the need for external financing and thus the lower the cost of such financing. So that it plays the effective role on cash management system. The cash conversion cycle is calculated by reducing payable deferral period with the sum of inventory conversion period and receivable collection period.

Table: 4.16
Analysis of Cash Conversion Cycle

Cash Conversion Cycle							
BNL				UNL			
Year	CCC (X)	X- E X	(X-EX) ²	Year	CCC (X)	X- E X	(X-EX) ²
2004/05	122.18	63.01	3970.84	2004/05	27.74	39.22	1538.46
2005/06	134.91	75.74	5736.37	2005/06	-32.89	-21.40	458.07
2006/07	31.07	-28.10	789.42	2006/07	-33.36	-21.88	478.69
2007/08	-7.80	-66.97	4485.18	2007/08	-15.60	-4.11	16.93
2008/09	15.48	-43.69	1908.41	2008/09	-3.31	8.17	66.79
	296.00		16890.22		-57.00		2558.94
Average	59.00	S.D	64.98	Average	-11.00	S.D	25.29
		C.V	1.10			C.V	-2.20

Source: Annex XI

The above table shows that Cash Conversion Cycle of the selected manufacturing companies during the study period. Average Cash Conversion Cycle of BNL is 59 days and UNL is -11 days. Here Cash Conversion Cycle of UNL is negative, which indicates sum receivable collection period and inventory conversion period is less than payable deferral period. UNL delays for the payment to the creditors which may harm the goodwill of the company. BNL has satisfactory liquidity position.

4.14 Profitability Analysis

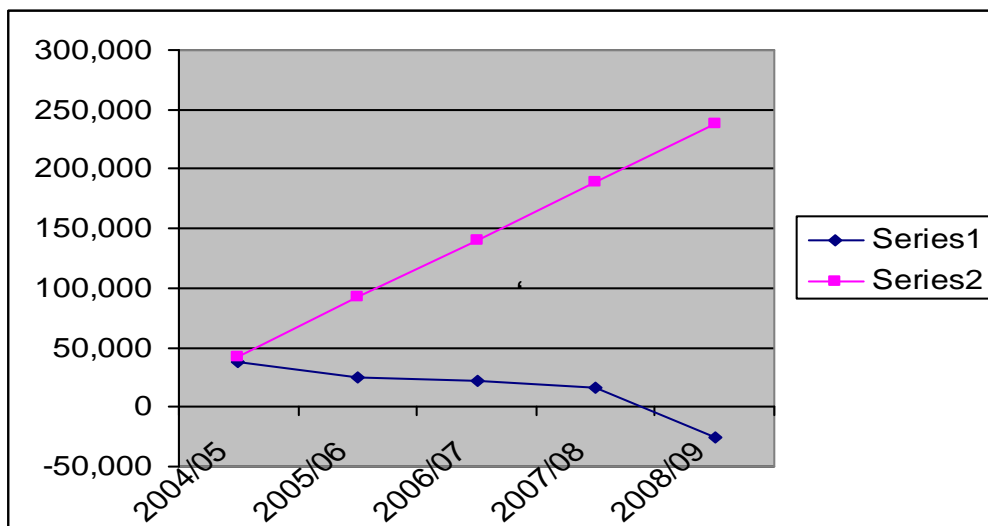
4.14.1 Analysis of Net profit

Table: 4.17
Net Profit of BNL and UNL

Net Profit							
BNL				UNL			
Year	NP (X)	X- E X	(X-EX) ²	Year	NP (X)	X- E X	(X-EX) ²
2004/05	37,141	22406	502028836	2004/05	42606	-98176.4	9638605517
2005/06	25,359	10624	112869376	2005/06	93167	-47615.4	2267226317
2006/07	21,565	6830	46648900	2006/07	140783	0.6	0.36
2007/08	15,625	890	792100	2007/08	189199	48416.6	2344167156
2008/09	-	-	-	2008/09	238157	97374.6	9481812725
	73,675		2322901712		703,912		23731811715
Average	14,735	S.D	24098.24533	Average	140,782	S.D	77025.66409
		C.V	1.64			C.V	0.55

Source: Annex I

Figure: 4.3
Net Profit of BNL and UNL



The above table and figure shows the net profit margin of BNL and UNL over the study period. Both manufacturing companies were running with profitable condition. Average profit of BNL and UNL are 33.09 million and 147.80 million. Net profit of UNL is in increasing trend, while net profit of BNL is fluctuating over the study period. Net profit of BNL ranges highest of 48.61 million in the fiscal year 2004/05 and lowest in the fiscal year 19.37 million in the fiscal year 2005/06.

4.14.2 Analysis Net Profit Margin

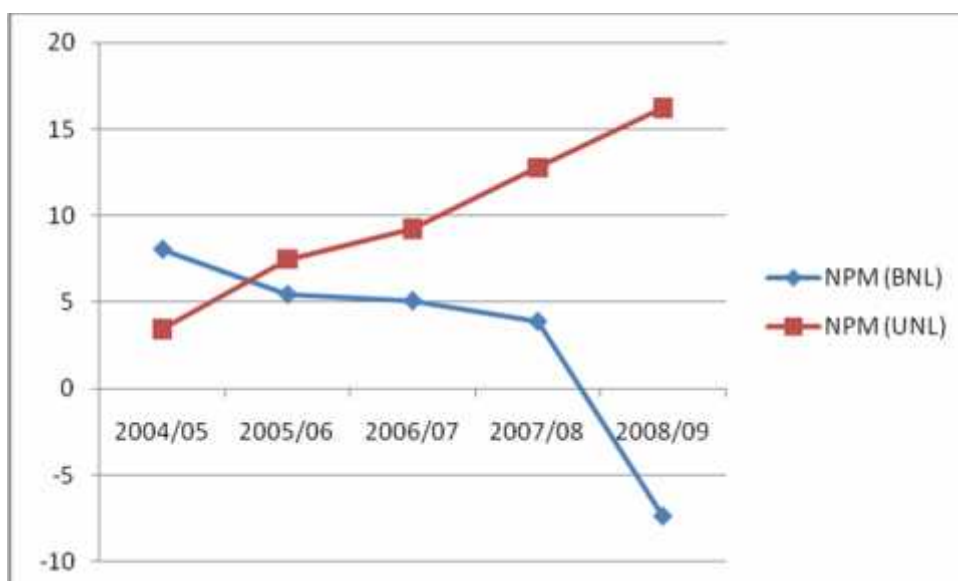
Net profit margin is also known as net margin. It measures the relationship between net profit and sales of a firm.

Table: 4.18
Net Profit margin of BNL and UNL

Net Profit Margin							
BNL				UNL			
Year	NPM (X)	X- E X	(X-EX) ²	Year	NPM (X)	X- E X	(X-EX) ²
2004/05	8.05	5.023006	25.23058878	2004/05	3.446942	-6.38086	40.71542802
2005/06	5.45	2.423349	5.872619705	2005/06	7.484934	-2.34287	5.489049774
2006/07	5.08	2.057253	4.232291431	2006/07	9.232271	-0.59554	0.354662051
2007/08	3.89	0.868346	0.754024795	2007/08	12.77026	2.942449	8.658006755
2008/09	-7.35	-10.372	107.5774338	2008/09	16.20463	6.376822	40.66386284
	15		143.6669585		49		95.88100944
Average	3	S.D	5.993057619	Average	10	S.D	4.895942438
		C.V	1.98			C.V	0.50

Source: Annex I

Figure: 4.4
Net Profit Margin of BNL and UNL



Above table and figure shows the net profit margin of BNL and UNL over the study period. Average of net profit margin of BNL and UNL are 5.58% and 10.38% respectively. UNL is more competent than BNL in terms of net profit margin. Net profit margin of both companies widely varies during the study period. Net profit margin of BNL varies highest of 9.08% in the fiscal year 2004/05 to lowest of 3.18% in the fiscal year 2005/06. Similarly, Net profit margin of UNL varies highest of 16.20% in the fiscal year 2008/09 and lowest of 2.50% in the fiscal year 2004/05. Net profit margin of UNL shows the increasing trend, which indicates the increasing performance of the company.

4.15 Liquidity and Profitability

Now bearing in mind conflicting nature of profitability and liquidity, correlation between the two has been analyzed subsequently. In a firm profitability and liquidity contradicts, and a such the firm should seek for trade off between the two. Conflicting nature of two could be justified by following example – if a firm holds large current assets so as to become more liquid, the consequence is that the profitability is adversely affected. Since the firm could have invested a large portion of a current assets, in warning profit. Conversely, if a firm doesn't keep enough current assets, and invest its large portion in earning pros the consequence is that the firm fails to meet to its current obligation i.e. Become illiquid and invite the risk of bankruptcy. The conflicting natures of these two is that when liquidity is being maintained, profitability trend to fall down, and vice versa

4.15.12 Relationship between Liquidity and Profitability

	Coefficeint of correlation (r)	Relationship	Coefficeint of determination (r ²)	P.E.	Remarks
UNL	-0.95	Negative	0.91	0.03	Insignificant
BNL	0.55	Positive	0.30	0.21	Insignificant

Source: Annex-X

The correlation between current ratio and net profit margin of BNL and UNL are 0.04 and -0.95 respectively. BNL correlation coefficient shows the positive relationship between CR x and NPM y $PE = 0.25 < r = 0.306 < 6pe = 1.5$ indicates that there is no evidence of correlation between CR and NPM.

4.2 Major findings of the study

- a. Selected manufacturing companies don't have any definite policy regarding how much cash balance to hold in each period. Cash and bank balance to hold each period. Cash and balance held during different period of study were observed to be highly fluctuated and thus the fact indicates the firm to be lacking definite policy regarding how much of cash balance to hold each period. The average cash balance held by BNL is 17.28 million and UNL is 291.45
- b. Cash turnover ratio: as a fact the higher cash turnover ratio of cash indicates the sound liquidity position of company and vice versa. Average cash turnover ratio of BNL and UNL are 103.24 and 7.41 respectively. However, the cash turnover ratio was found to be highly fluted. Correlation coefficient has been observed to be -0.361 of BNL and 0.666 of UNL. It indicates the positive relationship between cash and sales of UNL and negative relationship of BNL. The company has not planned to hold cash specific proportion of sales volume in any year of study.
- c. BNL has failed to maintain adequate proportion of cash on its current assets. While UNL has maintained high cash to current assts. Relationship between cash to current assets of BNL is low positive and UNL have high degree positive relationship. Level of significant of BNL in terms of cash to current assets is not significant where as UNL has significant.
- d. Both companies have not been precisely meeting their current liabilities payment. The proportion and cash to current liabilities, of BNL and UNL are 5.97% and 51.47%. Cash and bank balance held compared to current liabilities indicates that for some year that for some year it was high where as for some other year was very low. This show mismanagement of cash. However NL (54.47%) has shown sound liquidity position.
- e. BNL is unable to maintain adequate proportion of cash as its quick assets i.e 5.48% of BNL in an average. Correlation coefficient between cash on quick assets of BNL and UNL are 0.438 and 0.959. Here, both companies have positive relationship. But significant relationship on UNL while insignificant relationship on BNL.
- f. UNL seem to be able to maintain the adequate proportion of cash in total assets i.e Average 31.69% percentage. But BNL seem to be unable to maintain the adequate proportion of cash in total assets.

- g. Average collection period and payable different period of BNL found to be 125 days and 171 days. Here payable deferral period is high. So, BNL have to pay its debt on time. ACP and PDP of UNL are 50 days and 108 days. So, the both companies neither in better position nor in the worst position.
- h. Liquidity position of BNL is satisfactory i.e. CR is 2.02:1 and QR is 1:2 which is able to meet the standard 2:1 and 1:1. While liquidity profit or UNL is not satisfactory i.e. CR is 1.30:1 and QR is 0.90:1.
- i. BNL has not been able to trade off liquidity and profitability. The CR and NPM are found with insignificant correlation. While, UNL has significant correlation. While UNL has significant correlation between CR and NPM.
- j. Companies are not been able to collect cash in considerable time span. The average cash conversion cycle of BNL is days. While cash conversion cycle of UNL is (-25) days. UNL cash conversion cycle earlier due to high payable deferral period.

CHAPTER –V

SUMMARY AND CONCLUSION RECOMMENDATIONS

5.1 Summary

The study focuses on the cash management of selected manufacturing companies. As state in earlier, cash management refers to the management of cash, receivable and inventory. Likewise, as stated in the introduction section , the objective of the study are: to identify the liquidity position of the companies , to study the relationship of cash with other influencing variable of cash management , to make analysis of cash conversion cycle of the companies 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 summary of major findings, recommendation and conclusion explanation the tools and techniques have been concerned in chapter third then implemented in chapter four.

Hence an effort has been made in this chapter to present major finding on overall cash management practices in listed manufacturing companies recommendation and make conclusion.

5.2 Conclusion

In conclusion, it can be stated that cash management system in selected manufacturing companies found to be satisfactory. Cash management was found traditional way where as no any plan and policy has been made for efficiency of cash management the companies have low liquidity position. The cash conversion cycle has been found very longer period the over investment in inventory has been found. The companies have not been able to trade of liquidity and profitability so that the profit was found to be low position.

Cash management being the major elements in financial function. It is said that main function of financial manager is to apply better technique to Improve cash management in companies. There are other numerous aspects of finance involved in the overall financial performance of a firm counts for other managerial aspects such as human resources management, organizational structure marketing management etc. However, all down falling trend of the financial position is an indication of the fat that selected manufacturing companies should immediately seek for drastic change in its managerial structure so far cash management is concerned the recommendations suggested above could to a greater extent; uplift the selected manufacturing companies' cash management situation.

5.3 Recommendations

Financial efficiency is one of the key elements to achieve the goal of any business enterprise. The major findings of the study shows that the selected manufacturing companies are not followed any specific and appropriate financial principles financial techniques. Following recommendations are given for better financial performance and good cash management of the company on the basis of the findings of the study.

-) Cash Planning and cash budget is needed on a formal basis so as to project cash surplus or cash deficit for a period not exceeding one year and broken up into shorter period.
-) Maintaining optimum cash balance every year. The study has identified that selected manufacturing companies have not been maintaining optimum cash balance. The balances held are at time too high and too low in other time, without any definite purpose as to why the firm has held excess or deficit balance of cash. Holding of optimum cash as per its sales, profit and other influencing variable are recommended.
-) Try to reduce cash conversion cycle, cash conversation cycle of the companies has been found to be higher. However, RCP and PDP have been found to be considerable period. Inventory conversion period was too long. High level of inventory has affected to make CCC longer. It is recommended that companies should improve their inventory management system.
-) The main objectives of managing cash are to trade off liquidity and profitability in order to increase profit. By maintaining considerable liquidity position of the company should try to increase net profit.
-) Company should prepare cash budget cash planning and cash budgeting on a formal basis so as to project cash surplus and cash deficit for a period not exceeding one year and broken up in to shorter intervals, cash budget should be prepared with considering the influencing variables on cash management.
-) Surplus cash should be invested in profitable opportunities. Company should manage their cash in such a way as to keep cash balance at a minimum level for daily operating purpose and invest surplus cash in profitable opportunities. The idle cash increases opportunity cost and profit will be decrease.
-) Cash planning manager or experts should be appointed. The lack of knowledge of modern financial management tools and technique among

existing employees in the manufacturing sector is one of the causes of poor financial performance of the manufacturing companies.

-) Company should try to maintain considerable liquidity position. So that company may be able to meet current obligation.
-) Revised the strict provisions regarding cash: company should adopt practical procedure and practices for handling cash management and managing working capital work. To deal financial and cash matter, responsibilities, authority and accountability should be delegated, making process more practical and flexible. It encourages for prompt decision by responsible person. It helps to implement the budget timely.

Annex-I

Year	UNL			BNL		
	Sales	Cash	CTR	Sales	Cash	CTR
2004/05	1236052	62,335	19.83	461,490	46,015	10.03
2005/06	1244727	317,404	3.92	465,439	22,165	21.00
2006/07	1524901	319,532	4.77	424,315	25,190	16.84
2007/08	1481560	443,311	3.34	401,320	14,856	27.01
2008/09	1469685	242,672	6.06	354,095	21,474	16.49

Year	UNL			BNL		
	Cash	Total Assets	CTAR	Cash	Total Assets	CTAR
2004/05	62,335	571,335	0.11	46,015	687,917	0.07
2005/06	317,404	784,480	0.40	22,165	667,803	0.03
2006/07	319,532	939,720	0.34	25,190	545,055	0.05
2007/08	443,311	1,098,956	0.40	14,856	619,010	0.02
2008/09	242,672	967,147	0.25	21,474	418,772	0.05

Year	UNL			BNL		
	Cash	Current Assets	CCAR	Cash	Current Assets	CCAR
2004/05	62,335	399136	0.16	46,015	561,489	0.08
2005/06	317,404	589884	0.54	22,165	518,661	0.04
2006/07	319,532	724244	0.44	25,190	435,719	0.06
2007/08	443,311	891414	0.50	14,856	298,685	0.05
2008/09	242,672	761606	0.32	21,474	225,149	0.10

Year	UNL			BNL		
	Cash	Current Liabilities	CCLR	Cash	Current Liabilities	CCLR
2004/05	62,335	223210	0.28	46,015	305,683	0.15
2005/06	317,404	426451	0.74	22,165	272,310	0.08
2006/07	319,532	543706	0.59	25,190	240,800	0.10
2007/08	443,311	882023	0.50	14,856	236,340	0.06
2008/09	242,672	742232	0.33	21,474	155,988	0.14

Year	UNL	BNL
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	Cash	Quick Assets	CQAR	Cash	Quick Assets	CQAR
2004/05	62,335	254689	0.24	46,015	383,752	0.12
2005/06	317,404	463778	0.68	22,165	384,260	0.06
2006/07	319,532	540029	0.59	25,190	219,584	0.11
2007/08	443,311	661651	0.67	14,856	179,411	0.08
2008/09	242,672	485438	0.50	21,474	116,734	0.18

Year	UNL					BNL				
	Current Assets	Quick Assets	Current Liabilities	Current Ratio	Quick Ratio	Current Assets	Quick Assets	Current Liabilities	Current Ratio	Quick Ratio
2004/05	399136	254689	223210	1.79	1.14	561,489	383,752	305,683	1.84	1.26
2005/06	589884	463778	426451	1.38	1.09	518,661	384,260	272,310	1.90	1.41
2006/07	724244	540029	543706	1.33	0.99	435,719	219,584	240,800	1.81	0.91
2007/08	891414	661651	882023	1.01	0.75	298,685	179,411	236,340	1.26	0.76
2008/09	761606	485438	742232	1.03	0.65	225,149	116,734	155,988	1.44	0.75

Inventory	
Year	UNL
2004/05	144447
2005/06	126107
2006/07	184216
2007/08	229765
2008/09	256168

Inventory	
Year	BNL
2004/05	177,737
2005/06	134,401
2006/07	124,581
2007/08	119,274
2008/09	108,415

Receivable	
Year	UNL
2004/05	32163
2005/06	64775
2006/07	97063
2007/08	157721
2008/09	138319

Receivable	
Year	BNL
2004/05	126,575
2005/06	141,228
2006/07	98,725
2007/08	57,246
2008/09	16,413

Payable	
Year	UNL
2004/05	96,594

2005/06	247,008
2006/07	335,716
2007/08	370,237
2008/09	353,309

Payable	
Year	BNL
2004/05	162,296
2005/06	117,387
2006/07	157,452
2007/08	150,817
2008/09	109,043

COGS	
Year	UNL
2004/05	937734
2005/06	843142
2006/07	969109
2007/08	937818
2008/09	940236

COGS	
Year	BNL
2004/05	237,114
2005/06	238,590
2006/07	224,589
2007/08	191,959
2008/09	187,716

Net profit	
Year	UNL
2004/05	42606
2005/06	93167
2006/07	140783
2007/08	189199
2008/09	238157

Net profit	
Year	BNL
2004/05	37,141
2005/06	25,359
2006/07	21,565
2007/08	15,625
2008/09	-26,015

Annex-II

UNL					
Year	sales (X)	Cash (Y)	X ²	Y ²	XY
2004/05	1236052.00	62335.00	1527824546704.00	3885652225.00	77049301420.00
2005/06	1244727.00	317404.00	1549345304529.00	100745299216.00	395081328708.00
2006/07	1524901.00	319532.00	2325323059801.00	102100699024.00	487254666332.00
2007/08	1481560.00	443311.00	2195020033600.00	196524642721.00	656791845160.00
2008/09	1469685.00	242672.00	2159973999225.00	58889699584.00	356651398320.00
x	6956925.00				
y	1385254.00				
xy	1972828539940.00				
x ²	9757486943859.00				
y ²	462145992770.00				
Top	227034515750.00				
Bottom	390212068288.14				
r =	0.58				
r ² =	0.34				
P.E =	0.20				
6 P.E =	1.20				

BNL					
Year	sales (X)	Cash(Y)	X ²	Y ²	XY
2004/05	461490.00	46015.00	212973020100.00	2117380225.00	21235462350.00
2005/06	465439.00	22165.00	216633462721.00	491287225.00	10316455435.00
2006/07	424315.00	25190.00	180043219225.00	634536100.00	10688494850.00
2007/08	401320.00	14856.00	161057742400.00	220700736.00	5962009920.00
2008/09	354095.00	21474.00	125383269025.00	461132676.00	7603836030.00
x	2106659.00				
y	129700.00				
xy	55806258585.00				
x ²	896090713471.00				
y ²	3925036962.00				
Top	5797620625.00				
Bottom	10907214967.81				
r =	0.53				
r ² =	0.28				
P.E =	0.22				
6 P.E =	1.30				

Annex-III

UNL					
year	Cash (X)	Total Assets (Y)	X ²	Y ²	XY
2004/05	62335.00	571335.00	3885652225.00	326423682225.00	35614167225.00
2005/06	317404.00	784480.00	100745299216.00	615408870400.00	248997089920.00
2006/07	319532.00	939720.00	102100699024.00	883073678400.00	300270611040.00
2007/08	443311.00	1098956.00	196524642721.00	1207704289936.00	487179283316.00
2008/09	242672.00	967147.00	58889699584.00	935373319609.00	234699496784.00
x	1385254.00				
y	4361638.00				
xy	1306760648285.00				
x ²	462145992770.00				
y ²	3967983840570.00				
Top	491826755373.00				
bottom	565440420055.27				
r =	0.87				
r ² =	0.76				
P.E =	0.07				
6 P.E =	0.44				

BNL					
year	Cash (X)	Total Assets(Y)	X ²	Y ²	XY
2004/05	46015.00	687917.00	2117380225.00	473229798889.00	31654500755.00
2005/06	22165.00	667803.00	491287225.00	445960846809.00	14801853495.00
2006/07	25190.00	545055.00	634536100.00	297084953025.00	13729935450.00
2007/08	14856.00	619010.00	220700736.00	383173380100.00	9196012560.00
2008/09	21474.00	418772.00	461132676.00	175369987984.00	8992709928.00
x	129700.00				
y	2938557.00				
xy	78375012188.00				
x ²	3925036962.00				
y ²	1774818966807.00				
Top	10744218040.00				
bottom	25881979198.69				
r =	0.42				
r ² =	0.17				
P.E =	0.25				
6 P.E =	1.50				

Annex-IV

UNL					
Year	Cash (X)	Current Assets (Y)	X ²	Y ²	XY
2004/05	62335.00	399136.00	3885652225.00	159309546496.00	24880142560.00
2005/06	317404.00	589884.00	100745299216.00	347963133456.00	187231541136.00
2006/07	319532.00	724244.00	102100699024.00	524529371536.00	231419133808.00
2007/08	443311.00	891414.00	196524642721.00	794618919396.00	395173631754.00
2008/09	242672.00	761606.00	58889699584.00	580043699236.00	184820451232.00
x	1385254.00				
y	3366284.00				
xy	1023524900490.00				
x ²	462145992770.00				
y ²	2406464670120.00				
Top	454466126314.00				
bottom	523869585660.65				
r =	0.87				
r ² =	0.75				
P.E =	0.07				
6 P.E =	0.45				

BNL					
Year	Cash (X)	Current Assets(Y)	X ²	Y ²	XY
2004/05	46015.00	561489.00	2117380225.00	315269897121.00	25836916335.00
2005/06	22165.00	518661.00	491287225.00	269009232921.00	11496121065.00
2006/07	25190.00	435719.00	634536100.00	189851046961.00	10975761610.00
2007/08	14856.00	298685.00	220700736.00	89212729225.00	4437264360.00
2008/09	21474.00	225149.00	461132676.00	50692072201.00	4834849626.00
x	129700.00				
y	2039703.00				
xy	57580912996.00				
x ²	3925036962.00				
y ²	914034978429.00				
Top	23355085880.00				
bottom	33892043175.01				
r =	0.69				
r ² =	0.47				
P.E =	0.16				
6 P.E =	0.95				

Annex-V

UNL					
year	Cash (X)	Current Liabilities(Y)	X ²	Y ²	XY
2004/05	62335.00	223210.00	3885652225.00	49822704100.00	13913795350.00
2005/06	317404.00	426451.00	100745299216.00	181860455401.00	135357253204.00
2006/07	319532.00	543706.00	102100699024.00	295616214436.00	173731465592.00
2007/08	443311.00	882023.00	196524642721.00	777964572529.00	391010498153.00
2008/09	242672.00	742232.00	58889699584.00	550908341824.00	180118923904.00
x	1385254.00				
y	2817622.00				
xy	894131936203.00				
x ²	462145992770.00				
y ²	1856172288290.00				
Top	567537535027.00				
bottom	725083124754.84				
r =	0.78				
r ² =	0.61				
P.E =	0.12				
6 P.E =	0.70				

BNL					
year	Cash (X)	Current Liabilities(Y)	X ²	Y ²	XY
2004/05	46015.00	305683.00	2117380225.00	93442096489.00	14066003245.00
2005/06	22165.00	272310.00	491287225.00	74152736100.00	6035751150.00
2006/07	25190.00	240800.00	634536100.00	57984640000.00	6065752000.00
2007/08	14856.00	236340.00	220700736.00	55856595600.00	3511067040.00
2008/09	21474.00	155988.00	461132676.00	24332256144.00	3349686312.00
x	129700.00				
y	1211121.00				
xy	33028259747.00				
x ²	3925036962.00				
y ²	305768324333.00				
Top	8058905035.00				
bottom	13185942876.18				
r =	0.61				
r ² =	0.37				
P.E =	0.19				
6 P.E =	1.13				

Annex-VI

UNL					
year	Cash (X)	Quick Assets(Y)	X ²	Y ²	XY
2004/05	62335.00	254689.00	3885652225.00	64866486721.00	15876038815.00
2005/06	317404.00	463778.00	100745299216.00	215090033284.00	147204992312.00
2006/07	319532.00	540029.00	102100699024.00	291631320841.00	172556546428.00
2007/08	443311.00	661651.00	196524642721.00	437782045801.00	293317166461.00
2008/09	242672.00	485438.00	58889699584.00	235650051844.00	117802210336.00
x	1385254.00				
y	2405585.00				
xy	746756954352.00				
x ²	462145992770.00				
y ²	1245019938491.00				
Top	401438528170.00				
bottom	414380311069.55				
r =	0.97				
r ² =	0.94				
P.E =	0.02				
6 P.E =	0.11				

BNL					
year	Cash (X)	Quick Assets(Y)	X ²	Y ²	XY
2004/05	46015.00	383752.00	2117380225.00	147265597504.00	17658348280.00
2005/06	22165.00	384260.00	491287225.00	147655747600.00	8517122900.00
2006/07	25190.00	219584.00	634536100.00	48217133056.00	5531320960.00
2007/08	14856.00	179411.00	220700736.00	32188306921.00	2665329816.00
2008/09	21474.00	116734.00	461132676.00	13626826756.00	2506745916.00
x	129700.00				
y	1283741.00				
xy	36878867872.00				
x ²	3925036962.00				
y ²	388953611837.00				
Top	17893131660.00				
bottom	28842578945.73				
r =	0.62				
r ² =	0.38				
P.E =	0.19				
6 P.E =	1.11				

Annex-VII

UNL					
year	Cash (X)	Net Profit(Y)	X ²	Y ²	XY
2004/05	62335.00	42606.00	3885652225.00	1815271236.00	2655845010.00
2005/06	317404.00	93167.00	100745299216.00	8680089889.00	29571578468.00
2006/07	319532.00	140783.00	102100699024.00	19819853089.00	44984673556.00
2007/08	443311.00	189199.00	196524642721.00	35796261601.00	83873997889.00
2008/09	242672.00	238157.00	58889699584.00	56718756649.00	57794035504.00
x	1385254.00				
y	703912.00				
xy	218880130427.00				
x ²	462145992770.00				
y ²	122830232464.00				
Top	119303738487.00				
bottom	215617197136.52				
r =	0.55				
r ² =	0.31				
P.E =	0.21				
6 P.E =	1.26				

BNL					
year	Cash (X)	Net Profit(Y)	X ²	Y ²	XY
2004/05	46015.00	37141.00	2117380225.00	1379453881.00	1709043115.00
2005/06	22165.00	25359.00	491287225.00	643078881.00	562082235.00
2006/07	25190.00	21565.00	634536100.00	465049225.00	543222350.00
2007/08	14856.00	15625.00	220700736.00	244140625.00	232125000.00
2008/09	21474.00	-26015.00	461132676.00	676780225.00	-558646110.00
x	129700.00				
y	73675.00				
xy	2487826590.00				
x ²	3925036962.00				
y ²	3408502837.00				
Top	2883485450.00				
bottom	5705836368.60				
r =	0.51				
r ² =	0.26				
P.E =	0.22				
6 P.E =	1.35				

Annex-VIII

UNL					
year	Current Assets (X)	Current Liabilities(Y)	X ²	Y ²	XY
2004/05	399136.00	223210.00	159309546496.00	49822704100.00	89091146560.00
2005/06	589884.00	426451.00	347963133456.00	181860455401.00	251556621684.00
2006/07	724244.00	543706.00	524529371536.00	295616214436.00	393775808264.00
2007/08	891414.00	882023.00	794618919396.00	777964572529.00	786247650522.00
2008/09	761606.00	742232.00	580043699236.00	550908341824.00	565288344592.00
x	3366284.00				
y	2817622.00				
xy	2085959571622.00				
x ²	2406464670120.00				
y ²	1856172288290.00				
Top	944882001462.00				
bottom	969493917939.15				
r =	0.97				
r ² =	0.95				
P.E =	0.02				
6 P.E =	0.09				

BNL					
year	Current Assets (X)	Current Liabilities(Y)	X ²	Y ²	XY
2004/05	561489.00	305683.00	315269897121.00	93442096489.00	171637641987.00
2005/06	518661.00	272310.00	269009232921.00	74152736100.00	141236576910.00
2006/07	435719.00	240800.00	189851046961.00	57984640000.00	104921135200.00
2007/08	298685.00	236340.00	89212729225.00	55856595600.00	70591212900.00
2008/09	225149.00	155988.00	50692072201.00	24332256144.00	35120542212.00
x	2039703.00				
y	1211121.00				
xy	523507109209.00				
x ²	914034978429.00				
y ²	305768324333.00				
Top	147208408982.00				
bottom	159430406587.86				
r =	0.92				
r ² =	0.85				
P.E =	0.04				
6 P.E =	0.27				

Annex-IX

UNL					
year	Quick Assets (X)	Current Liabilities(Y)	X ²	Y ²	XY
2004/05	254689	223210	64866486721.00	49822704100.00	56849131690.00
2005/06	463778	426451	215090033284.00	181860455401.00	197778591878.00
2006/07	540029	543706	291631320841.00	295616214436.00	293617007474.00
2007/08	661651	882023	437782045801.00	777964572529.00	583591399973.00
2008/09	485438	742232	235650051844.00	550908341824.00	360307617616.00
x	2405585.00				
y	2817622.00				
xy	1492143748631.00				
x ²	1245019938491.00				
y ²	1856172288290.00				
Top	682689524285.00				
bottom	766868706052.15				
r =	0.890229995				
r ² =	0.792509444				
P.E =	0.062588607				
6 P.E =	0.375531643				

BNL					
year	Quick Assets (X)	Current Liabilities(Y)	X ²	Y ²	XY
2004/05	383,752	305,683	147265597504.00	93442096489.00	117306462616.00
2005/06	384,260	272,310	147655747600.00	74152736100.00	104637840600.00
2006/07	219,584	240,800	48217133056.00	57984640000.00	52875827200.00
2007/08	179,411	236,340	32188306921.00	55856595600.00	42401995740.00
2008/09	116,734	155,988	13626826756.00	24332256144.00	18209103192.00
x	1283741.00				
y	1211121.00				
xy	335431229348.00				
x ²	388953611837.00				
y ²	305768324333.00				
Top	122390463079.00				
bottom	135677393794.63				
r =	0.90				
r ² =	0.81				
P.E =	0.06				
6 P.E =	0.34				

Annex-X

UNL					
Year	Current Ratio (X)	Net Profit Margin(Y)	X ²	Y ²	XY
2004/05	1.788163613	3.446942362	3.197529106	11.88141164	6.163696906
2005/06	1.383239809	7.484934447	1.913352371	56.02424368	10.3534593
2006/07	1.332050777	9.232271472	1.774359274	85.23483653	12.29785439
2007/08	1.010647115	12.77025568	1.02140759	163.07943	12.90622205
2008/09	1.026102351	16.20462888	1.052886034	262.5899972	16.62760779
x	6.540203665				
y	49.13903284				
xy	58.34884044				
x ²	8.959534375				
y ²	578.8099191				
Top	-29.63508048				
Bottom	31.14533603				
r =	-0.951509416				
r ² =	0.905370168				
P.E =	0.02854467				
6 P.E =	0.171268018				

BNL					
Year	Current Ratio (X)	Net profit margin(Y)	X ²	Y ²	XY
2004/05	1.836834237	8.05	3.373960013	64.77129734	14.78295529
2005/06	1.904671147	5.45	3.627772178	29.68511295	10.37741908
2006/07	1.809464286	5.08	3.274161001	25.82986613	9.196256866
2007/08	1.263793687	3.89	1.597174483	15.15857737	4.920456583
2008/09	1.443373849	-7.35	2.083328069	53.97691656	-10.60432107
x	8.258137206				
y	15.12527881				
xy	28.67276676				
x ²	13.95639574				
y ²	189.4217704				
Top	18.45720608				
Bottom	33.74414618				
r =	0.546975051				
r ² =	0.299181706				
P.E =	0.211398734				
6 P.E =	1.268392403				

Annex-XI

Inventory Conversion Period (ICP)						
	BNL			UNL		
Year	inventory	COGS	ICP	inventory	COGS	ICP
2004/05	177,737	237,114	269.8505	144447	937734	55.45381
2005/06	134,401	238,590	202.7929	126107	843142	53.84445
2006/07	124,581	224,589	199.6944	184216	969109	68.43168
2007/08	119,274	191,959	223.6865	229765	937818	88.19984
2008/09	108,415	187,716	207.9173	256168	940236	98.08227

Receivable Conversion Period (RCP)						
	BNL			UNL		
Year	receivable	sales	RCP	receivable	sales	RCP
2004/05	126,575	461,490	98.73887	32163	1236052	9.36747
2005/06	141,228	465,439	109.2347	64775	1244727	18.73423
2006/07	98,725	424,315	83.76089	97063	1524901	22.91472
2007/08	57,246	401,320	51.35194	157721	1481560	38.32417
2008/09	16,413	354,095	16.68671	138319	1469685	33.8813

Payable Deferral Period (PDP)						
	BNL			UNL		
Year	payable	COGS	PDP	payable	COGS	PDP
2004/05	162,296	237,114	246.407	96,594	937734	37.08284
2005/06	117,387	238,590	177.1211	247,008	843142	105.4661
2006/07	157,452	224,589	252.3842	335,716	969109	124.7102
2007/08	150,817	191,959	282.8423	370,237	937818	142.1228
2008/09	109,043	187,716	209.1217	353,309	940236	135.2759

Cash Conversion Cycle (CCC)		
Year	BNL	UNL
2004/05	122.1823	27.73844
2005/06	134.9065	-32.8874
2006/07	31.07104	-33.3638
2007/08	-7.80382	-15.5988
2008/09	15.48234	-3.3123

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