1.1 Introduction:

Generally cash is a specific form of money. From financial point of view it refers to all money items and sources that are immediately available to help pay a firm’s bills. It is the most common purchasing power or medium of exchange. Cash is one of the most important elements of working capital. Like all other ingredients of working capital e.g. inventories and debtors, cash plays an important role in business. It is the central attraction around which all activities whether it is business or operational or distributive depends on. It is the ultimate outcome expected to be realized by disposing products and services prepared by the organization.

In modern business world, cash performs various functions. It makes possible the payment by cheque, it acts as a storage for earmarked funds. It is a reservoir from which money may be used to meet emergencies. Now a days, business uses credit instead of cash in its routine work. The use of bills, draft, credit cards, debit cards, ECS, fund transfer through internet etc. replaces the use of coin and paper currency. Sometimes, the term ‘cash’ refers to the currency plus bank A/C balances held at different commercial banks.

Whatever may be the size of business, cash plays an important role in business. It is the ‘life blood’ of each and every successful business. Sufficient cash balance is necessary in order (a) to get the trade discount, (b) to maintain its credit ratings and (c) to meet unexpected cash needs. More cash signifies more liquidity. Liquidity of a business plays a very vital role for its prosperity or failure. But it is not desirable to maintain more cash for its liquidity. Liquidity indirectly resists profitability. There is an inverse relationship between liquidity and profitability.

It signifies that other things remaining same; a high level of liquidity usually leads to the lower level of profitability and vice-versa. Normally, a high level of cash balance is kept separate for transaction or precautionary or speculative purposes. Such cash balances remain idle and do not earn anything but it could earn something if the business invests this money outside.
Cash management is the art and increasingly the science of managing a company’s short-term resources to sustain its ongoing activities, mobilize funds and optimize liquidity. The most important elements of cash management are – (a) efficient utilization of current assets and current liabilities of a firm throughout each phase of business operating cycle; (b) the systematic planning, monitoring and management of the company’s collections, disbursements and account balances; (c) the gathering and management of information to use available funds effectively and identify risk. Lack of cash may lead the company to bankruptcy. Therefore, efficient cash management does not mean just only preventing bankruptcy but it helps to improve the profitability and reduces the risk of company.

Cash management is particularly important for new and growing business. Cash flow can be a problem even when a small business has numerous clients, offers a superior product to its customers and enjoys a sterling reputation in its industry. It creates a problem for innovation or expansion. Finally, poor cash flow makes it difficult to hire and retain good employees. In addition, employee salaries and other expenses require considerable funds for most businesses. These factors make effective cash management an essential part of business’s financial planning. Another important concept which is related with the cash management is the Treasury management. Treasury management is known as a set of techniques which give emphasis on the liquidity of a company by affecting the factors and processes which convert immediately into cash with the objective of increasing the profitability and improving the working capital management.

Cash Management, now, is more sophisticated than previous years. Now our objective is to reduce the level of cash a minimum as possible and invested the unused funds to some earning assets. It is also recognized as an important profit centre. Now, our technology is much more advanced and we are getting more information regarding collection, disbursement, accounting, forecasting, budgeting etc. Most of the firms maintain good relations with their suppliers for disbursing funds in timely basis with low operating costs.
The way in which cash is managed in the business organization has a significant impact on the liquidity as well as profitability of the concern. The objective is to increase the profitability while retaining the liquidity. Increasing liquidity indirectly reduces profitability and reducing liquidity increases profitability of the concern. Therefore, in order to achieve the objectives of the organization, cash should be managed in such a way that it controls the liquidity and yet improves the profitability of the concern.

In this study we discussed different models of Cash Management like Boumol Model, Miller-Orr Model, Beranek Model, and Mao Model. These models showed that how the optimum cash balance can be reached. Risk-return trade-off is another important factor in determination of optimum cash level.

In the present study we discussed another very important parameter of cash management i.e. Cash Conversion Cycle. The term Cash Conversion Cycle can be considered a length of time between purchase of raw-materials and collection of cash from debtors. In liquidity management Cash Conversion Cycle is an important parameter for measuring its efficiency. Cash Conversion Cycle of a company indicates the efficiency of managing working capital. Such measure can be used in benchmarking competitors or comparing companies. Cash Conversion Cycle is constructed by deducting the payable deferral period from the addition of inventory conversion period and receivable collection period.

The CCC of a manufacturing organization may not be same with the retail or wholesale organization even if for a service organization. Cash Conversion Cycle of the organization is related with several factors like internal resources cost of external financing, conditions in the capital market and the bargaining power of debtors and creditors.

Cash holding is one of the most important financial decisions that the manager of the concern organization, has to make in the organization. Some organization use to hold more cash and some organization hold less cash. But, how much to hold is the question. For this different policies are framed.
Modigliani Miller also opined for holding less amount of cash. In this study two theoretical studies for the need of cash level i.e. Trade off theory and the Pecking order theory, are discussed. Cash holding need good cash planning. Prediction of cash is a process of estimating the probable sources and application of cash over a fixed future period. It is a process through which first of all overall financial status of a company is identified and then determines probable financial needs with the help of budget. Generally, fundamental accounting techniques for cash planning are (1) Proforma Balance Sheet, (2) Break-Even Analysis, (3) Cash forecast and (4) Cash Budget. Cash Budget can be prepared in two ways. They are (1) Receipts and Disbursement Method and (2) Adjusted Income Method. Appropriate cash holding is result of good cash planning.

Regulation of cash flow is known as cash control. After projecting the cash flows, the finance manager is sure that there should not be any differences in the projected and actual figures of cash. Proper management of cash flows, the cost of financing should be minimized and operating activities of the organization will be better. The main techniques of controlling cash flows are Accelerating Cash Inflows and Control over Cash Payments. Accelerating cash flow can be done with the help of three methods viz. Centralisation of Cash functions, internal control over cash receipts and Streamlining of banking arrangements. Concentration banking and Lock-box system helps the streamlining of banking arrangements.

Cash flow is another important factor of Cash Management. Cash flow is of two types- inflow and outflow. Inflow and outflow of cash is related with the receipts and payments pattern of cash. The cash position of an organization is termed as most efficient if it perfectly manages or synchronizes its receipts and payments of cash. Cash can be collected from two sources, direct source and indirect source. Direct sources are issue of share capital or issue of debentures, Collection of money from bank as loan or intercompany loans and Collection of money from cash sales. The examples of indirect sources of cash are stock-in-trade which is converted into cash, investment or sale of fixed assets also converted into cash but must have some capital backing, provision for depreciation and proposed dividend etc.
Similarly, cash can be utilized in the following way, disbursement of operating expenses, payment of creditors, purchase of materials, sundry supplies etc. (cash purchase) and fixed assets and short or long-term securities, disbursement of dividend and taxes and Loan repayment. Sometimes, cash may be excess. Such excess cash may be invested in short or long term securities. But, if there is some overdraft then it cannot be done. Different factors like Utilization of capacity in full and proper time distribution, Depreciation Policy, Retention Policy, and Dividend Policy may affect the revenue flow of the organization.

A good cash management system must have an organizational framework which controls the cash flow. Such framework identifies who is responsible for particular function viz. collecting cash, payment authorization, making payments, bank accounts and funds transfer between accounts, arranging overdraft facilities and loans, investing cash surpluses and foreign currency transaction.

Authority and responsibility allocation for cash management is related with the operational cash flows and cash flows for financing and investing activities. The receipts and payments for trading activities are popularly known as operational cash flows. The allocation of responsibilities of the cash flows varies from organization to organizations depending upon the size, structure of the management, geographical location of the organization and also the relationship between the organization and its customers and suppliers. Like receipts and payments of cash flow, financing and investment of cash flows can also be shared between head office and the subsidiary. Raising funds through issue of share capital, long-term loans, capital gearing, acquisitions and major capital expenditures, also controlled by the head office.

Another important topic of cash management is cash cycle. In business it is observed that cash received from selling of goods should exceed the cash paid for preparing such goods. In business organization cash payments are made in the expectation of receiving higher amount in future. A certain part of the cash receipts are utilized to prepare more goods or to provide more services for sale.
Therefore, such activities generate the business cycle of purchasing and selling and paying for purchases and receiving from sales. Such concept gives birth of cash cycle. In organization cash cycle is related with the trading cycle. Trading cycle begins with the purchase of stock for resale and closed with sale of the stock. The cash cycle starts with payment of stock and closed with receipts of cash from customer for sale.

Both the trading cycle and cash flow cycle are measured by time. Earlier it is discussed that the trading cycle starts with purchasing of raw materials and ends of selling the goods. So, the trading cycle time would be the time from purchasing of raw materials to sale of finished goods whereas cash flow cycle time would be the time from first cash expenditures receipts of payments from sales.

The importance of cash flow is particularly important at times when access to cash is difficult and too much expensive. A credit availability can solves both of these problems. When the ‘real economy’ falls into recession, businesses face the additional risk of customers running into financial difficulty and becoming unable to pay invoices – which insists the organization to use non-operational sources such as bank loans, can push a company over the edge.

Use of credit is a complex phenomenon. But, common people or even like us have wrong conception or negative idea about uses and application of credit. ‘Buy now-pay later’ or promise to pay in future for immediate goods are existed in the earlier agricultural societies. Giving credit means you are taking risk. Credit analysis is actually the risk analysis. The credit analyst must consider the nature and type of the business as well as the applicant in his personal judgment.

1.2 Objectives of the Study:

The presents study is prepared to make an in-depth analysis of the selected companies in IT sector, Consumer Durables sector, Pharmaceuticals sector, FMCG sector and Retail sector in respect of their Cash Conversion Cycle, Cash Holding and Cash flow and Credit Worthiness during the period of 2002-2011. Cash conversion cycle is one of the dynamic measures of liquidity of the organization. Holding sufficient cash enables the organization to take the risk of borrowed capital, enlarge their assets position and investment to some profitable projects. Holding cash is an indicator of sound liquidity. It helps the organization in meeting their contractual obligation when they are due.
Creditworthiness is also one of the dynamic measures of liquidity and credit evaluation which helps the company to get more credit so that receivables are converted into cash in a minimum period of time, the company maintained the liquidity position property and maintained the growth opportunity. For determining credit analysis we always have to consider the nature and type of business as well as the judgment of the manager.

More specifically the objectives of our study as a whole are as under,

1. To design an effective Cash Management policy for smooth cash procurement and disbursement without endangering the operating capability and productivity of the firm.

2. To ensure adequate cash balance for payment of expenditures when they are due and at the same time maximizes the return on idle cash.

3. To determine the exact working cash balance in conformity with the nature of the firm and how the temporarily unused fund be invested in interest earning assets.

4. To make a comparative analysis of the Liquidity position of selected companies from five different sectors in India during the period covered in the study, i.e. 2002 to 2011.

5. To find out the Cash Conversion Cycle with help of RCP, ICP and PDP of the Selected Companies through the technique of ratio analysis and other statistical tools.

6. To set policies for reducing the cash conversion cycle as much as possible without affecting its operation process so that it leads to increase the profits of the firm.

7. To measure the Cash Flow from Operating activity, Investing activity and Financing activity and net increase / decrease in cash flow and try to establish the relationship between these activities with Cash Conversion Cycle and Cash Holding.
8. To measure the Credit Score (CS) and try to establish a relationship among Cash Conversion Cycle, Cash Holding and Creditworthiness.

9. Finally, to examine whether the findings of the study conform to the theoretical argument or not.

1.3 Significance of the Study:

Cash is needed to meet financial obligations, i.e. cash provides liquidity. Liquidity means having enough money in hand to pay bills as and when they demanded and to take care of unexpected needs for cash. On the contrary, cash earns a firm nothing in terms of interest or earnings. Therefore, holding cash is expensive to the firm. A very low current ratio of course can be unfavourable so as a very high one. So, it is very essential for a firm to strike a balance between liquidity and profitability. In our study, an attempt has been made to design an effective cash management system. Whether it’s an individual or company cash management’s importance cannot be ignored. Cash management in simple words refers to managing the cash in such a way that a company never falls short of cash when it is in need. Let’s look at the reasons due to which cash management is important for a company -

* We know cash holding requirements will vary with company to company and their respective circumstances, in our study we tried to ascertain, the level of cash holding which is best for the Organisation.
* In this study the period of Cash Conversion Cycle has been calculated. It is also discussed that which factor is responsible for reduction in CCC which ultimately reduces the need for additional external financing and minimize the interest expenses resulting from such additional fund.
* Our study helps us to centralize corporate cash with a goal of controlling the movements of funds and minimizing idle cash balance.
* In our study we established a reserve credit line with a bank or group of banks to protect the uncertainty associated with obtaining cash balance in time. Also gets more credit from suppliers which indirectly minimize the need of working capital.
Cash Management in Indian Corporate Sector: A Study of Select Companies

* Our study is important because it shows that how a firm can hold a part of its liquid funds in short-term marketable securities (like, T-Bill, Commercial Paper, and Certificate of Deposits etc.) for earning some return without sacrificing desired liquidity.
* This study investigates the structural changes of the cash management behaviour of the selected companies in the industry. This will be done by examining the development of cash management practices and the stability of the cash management models.
* It increases the awareness of the changes in the best cash management practices of organizations in a liberalized and integrated money market.
* Our study helps to establish a well-defined controlling and collecting procedure for efficient cash management.
* This study suggests possible improvement over present policies and practice.
* Our study is particularly important for those companies who make sales as well as purchase on credit, since creditor can demand money anytime and therefore it is important for a company to manage cash.
* Cash management is also necessary to deal with contingencies such as fire, breakdown of machinery, payment of compensation in case of any lawsuit going against the company etc...
* This study is also important when global commodity prices are fluctuating; companies need more cash in order to take advantage of decline in the raw material prices of the company’s product.
* Cash management assumes greater importance when company has taken debt, because interest payments are fixed and company has to pay it, any delay in interest payment or principal repayment of debt can even result in company becoming bankrupt, therefore cash should be there for payment of such expense. In this regards our study has ample importance.

1.4 Research Methodology used in this study:

Twenty five popular companies from five sectors (IT, Consumer Durables, Pharmaceuticals, FMCG and Retail) have been selected taking five companies from each sector. The data of the selected companies for the period 2002 to 2011 used in this study have been taken from the secondary sources i.e. Capitaline Corporate Database of Capital Market Publishers (I) Ltd. Mumbai. For the purpose of our study different companies from five sectors are selected following the purposive sampling procedure.
1.4.1 Cash Conversion Cycle (CCC): Receivable conversion period, inventory conversion period and payment of deferral period are used to measure the cash conversion cycle. Shorter cash conversion cycle means better liquidity position of the organization. Here, we established the relationship between CCC and debtors more than six months, CCC and CR, CCC and inventory turnover ratio, CCC and debtors turnover ratio and CCC and creditors turnover ratio. Debtors more than six months mean debtors from whom money is collected after six months. It is riskier to the organization and also blocks cash for long periods and reduces the liquidity position. Liquidity of the organization has been represented by the current ratio which is obtained by dividing the current assets to current liabilities. Efficiency of the inventory management has been measured by inventory turnover ratio (ITR) which is the ratio between cost of goods sold and average stock. Debtors’ turnover ratio (DTR) is the ratio of credit sales to average receivables. Organization’s ability to avail credit facility from suppliers has been measured by creditors’ turnover ratio (CTR) which is the ratio of credit purchase to average payables.

Profitability, size of the organization and cumulative profitability can influence the cash conversion cycle of the organization. In this study profitability has been measured by return on net worth (RONW), size of the organization has been represented through the amount equal to the log value of total assets. Shareholders fund has been selected in this study as cumulative profitability which consists of equity share capital and reserve surpluses. The log value of shareholders’ fund represents the cumulative profitability.

1.4.2 Average Cash Holding: Opening balance and closing balance of cash are used to determine the average cash balance of each year and again such cash balances are used to get the average cash holding. Large cash holding is preferable for better liquidity of the organization.

In this study companies are ranked on the basis of average cash holding and consistency of cash holding sector wise and then ranking has been done as whole taking all twenty five companies considering the average cash holding and coefficients of variation (consistency) of average cash holding.
In this study we examined the relationship between average cash holding and DFL, average cash holding and Investment and average cash holding and profitability (RONW). Degree of financial leverage (DFL) is computed with the help of the following formula,

\[
DFL = \frac{\text{Operating Profit (EBIT)}}{\text{Operating Profit} - \text{Interest}}
\]

Financial leverage arises due to use of fixed charges bearing capital in the capital structure like debt capital.

Higher debt capital means higher financial leverage. DFL measures the financial risk of the business. DFL affect the cash holding of the organization. More external borrowing means more cash holding. It can also be said that external borrowing replaces cash holding. Size of the organization has been represented through the amount equal to the log value of total assets. Size of the organization can affect the corporate cash holding. Generally, small firms hold more cash not only for higher costs of use of external funds but also for borrowing constraints.

But large organization means too many expenses and for that purpose need large cash holding. Investment of the organization has been represented through the figure equal to the log value of total amount of Investment. Organisation which have numerous investment opportunities but uncertain internal cash flow hold more cash otherwise borrowing external funds for profitable investment opportunity is costly. In this study profitability has been measured by the return on net worth (RONW). General principle is that higher the liquidity lowers the profitability. Holding more cash increases the short-term debt paying capacity of the organization, but decreases the profitability by not using the excess or unused fund in some other profitable projects.

1.4.3 Cash Flow and Creditworthiness: Cash flow statement is a statement which reveals the impact of all business transaction over a period of time on the cash position of the firm. It shows the causes of change in cash balance between two balance sheet dates. It gives the information of sources of cash and also application of cash. As per Accounting Standard 3 cash flow statement consist three activities, say operating activity, investing activity and financing activity.
CCC is related with the Cash flow from operating activity. More collection of cash reduces the need of working capital and we know that lower cash conversion cycle is also signifies minimum need of working capital. Therefore, Cash Conversion Cycle is positively related with the Cash flow from operating activity. In investing activity we add the sale of fixed assets and less the purchase of fixed assets. This effect can be seen in the cash holding of the firm. By investing funds in fixed assets or in shares or debentures of other companies decreases the cash holding of the firm and vice-versa. Therefore, cash holding is negatively related with the Cash flow from investing activity. All we know it. Firm can easily collect funds from money market at a very negligible cost. Therefore, they are not holding cash for future requirements. In cash flow from financing activity we consider the inflow by issue of shares, pref. shares, debentures, taking long-term loans and outflow by redemption of pref. shares, debentures, repayment of long-term loan etc. Holding excess cash without any purpose have to bear cost in the form of interest, dividend and also affect the profitability of the firm indirectly. Therefore, Cash holding of the firm is inversely related with the Cash flow from investing activity.

To develop a credit evaluation model from the financial statement of the selected companies, we used Bathory’s – ‘risk description model’ with small changes. In actual model the main influencing factors are accumulated profitability and inventory but for our purpose we use the cash flow instead of Inventory. Eight different ratios are calculated from the financial statement as stated above. In determination of ratios, emphasis has been given on the firms’ liquidity, profitability and capital adequacy. For the purpose of our study five companies each from five different sectors are selected, as stated earlier, with the help of purposive sampling procedure. The model is prepared on the basis of ten years data; it will be more predictive and reveals the appropriate creditworthiness of the companies. For analyzing the date statistical tools like arithmetic mean, percentage etc. and statistical technique like Pearson’s simple correlation analysis and statistical test like ‘t’ test have been applied at appropriate places.

Risk Description Model:

1. Net Profit / Capital Employed = Profitability (Annual)
2. Net Tangible assets (Shareholders Fund) / Total Liabilities (Long term + Short term debt) = Profitability (Cumulative)
3. Net Profit / Current Liabilities = Liquidity
5. Equity / Current Liability + Credit exposure = Capital Adequacy
6. Net Assets / Credit exposure = Comfort Margin
7. Total assets / Total liability + Credit exposure = Debt Capacity

In the first ratio we find out the ratio showing profitability. It is also known as return on capital employed. Here, net profit means profit after tax but before interest. In this ratio net profit is placed on capital employed for the measurement of profitability of the current year. Second ratio is calculated by placing the net tangible assets on total liabilities. Here, net tangible assets signify the shareholders fund and total liabilities is equal to the long-term debt plus total short-term debt. The second ratio reveals the measurement of cumulative profitability. In this model we consider both the profitability for current year as well as profitability for accumulated periods.

In the previous two chapters we used the current ratio and quick ratio as the measure of liquidity so we are not used these ratios in this chapter. These ratios are less impressive in respect of creditworthiness of an organization. Here, we use the net profit to current liabilities ratio as the indicator of liquidity. Net profit of an organization generally includes some items additional to current assets such as surplus after accounting for depreciation and extra ordinary items. Current liabilities here we consider the items which are payable within a particular accounting period. Another liquidity ratio i.e. fourth ratio is computed by placing Normalised Working Capital to over credit exposure. And normalized working capital is calculated by deducting the stock from net current assets (i.e. Net Working Capital). Usually, in case of quick ratio, we place the current assets less stock over current liabilities. In this case we have already deducted current liabilities from current assets for calculating net current assets. If we place the normalized working capital over current liabilities plus credit exposure – it will portrays a wrong picture. So we placed the normalized working capital over credit exposure. This would show how much cover a hard measure of latest liquidity can afford.
Normalised working capital can be calculated by deducting hundred percent of stock or less liquid stock like raw materials and WIP in case of a manufacturing company. In case of retail companies the deductible portion may be twenty five percent. But in this study we develop the model by deducting fifty percent of stock from Net current assets. The amount of credit asked by the customer is termed as credit exposure. In preparing the model we have taken twenty five percent of current assets as credit exposure. The third and fourth ratio indicates the short-term debt paying capability of the organization.

Fifth ratio measure the capital adequacy of the companies selected under study. Capital adequacy of the organization measure the long-term capital or permanent capital. Generally, long-term capital is not used to meet the short-term obligation of the organization. Fifth ratio in this model is used in respect of equity stake. In many situations such equity stake can provide the organization further borrowing powers. Very roughly speaking, if equity is greater than 50 percent of capital employed, further borrowing might reasonably be represented by the difference between actual level of equity to capital employed and 50 percent of capital employed. In calculating the ratio credit exposure is added with current liabilities to provide the most serve total of firm’s obligation. In the sixth ratio net assets is placed over credit exposure. In the model it is termed as comfort margin. In the fourth ratio, normalized working capital is placed over the credit exposure. Most of the cases, it produces comparatively high values and probably negative. As we know that stock is a very substantial part of current assets and we deduct stock from net current assets, there is a very high probability of a negative figure. It is expected that net assets will provide a significantly large amount of cover for small credit exposure. The resulting ratio, therefore, should provide high positive scores and it affects the scores in our model to compensate for the high negative value provide by the normalized working capital to credit exposure ratio.

In the seventh ratio total assets is placed over total liability plus credit exposure. It signifies the debt capacity of the organization. Here total liabilities include both short-term liabilities and long-term liabilities. In the ratio total liability also include the credit exposure. It indicates the safety margin taking into consideration of all known obligations including the credit asked by the customer. Such a measurement would give a rough idea of break-up value of the company where all obligations, including our original exposure to crystallize simultaneously. The ratio then gives an indication of safety margin and debt capacity both of which are functions of liquidity, Capital adequacy and Profitability.
Finally, in the eighth ratio the treatment of priority debt items is measure by contrasting current debt with financial flow that will be servicing it. Computing gross cash flow from modified accounting information will be difficult without a detailed profit and loss account showing depreciation.

So, gross cash flow is obtained by adding the depreciation with net profits. Simply, the ratio is calculated by placing the financial flow (gross cash flow) over current debt. Earlier we discussed how to calculate gross cash flow. Generally, from experience it is observed that all the current liabilities are not paid at a time, so in calculating current debt in this model we consider only twenty percent of company’s current liabilities. It shows the treatment of priority debt items and it is matched with that amount which will be used to servicing it.

In our model eight ratios are taken into consideration by giving equal weight to them.

The resulting formula would be denoted as –
\[ CS = L^* \sum_{i=1}^{8} X_i \]

\(CS = \) Credit Scores
\(X_i = \) Variables (I = 1 to 8)
\(L = \) Constant Multiplier = 100/8 = 0.125

The developed model is thus = 0.125*\(\sum_{i=1}^{8} X_i\)

Risk Description Model

Here, 
\(NWC = \) Normalised Working Capital
\(NTA = \) Net Tangible Assets
\(E = \) Equity Shareholders fund
\(CL = \) Current Liabilities
\(TL = \) Total Liabilities
\(CR \cdot EXPOSU = \) Credit Exposure (0.25\% of CA)
\(CD = \) Current Debt
\(D = \) Depreciation
\(NP = \) Net Profit
\(NA = \) Net Assets
\(CE = \) Capital Employed.
For analyzing the data statistical tools like arithmetic mean, standard deviation coefficient of variation etc. and statistical techniques like Pearson’s simple correlation analysis and multiple regression analysis and statistical test like ‘t’ test have been applied at appropriate places.

1.5 Literature Review:

Due to identifying the fundamental reason for undertaking our study an attempt has been made to survey the various studies carried out in the field of cash management. The following are some of the major studies in this field, both in foreign and Indian context.

1) Anil kumar Sinha made a study of cash management on ‘Indian public sectors’ during 1980-81 to 1984-85. He argued that cash is the most liquid part of working capital subject to a greater maneuverability by the management because it has opportunity costs.

He also argued that the basic problem of cash management is to perfect synchronization of cash receipts of the firm with the cash payments at any point of time.

As the government directly involved in the operations of public sector undertakings, cash is needed only for operational purposes, neither for speculative purposes nor for precautionary purposes. Therefore, the problems relating to liquidity and profitability in public sector undertakings were not so challenging.

According to Anil Kumar Sinha selected undertakings do not define and determine the minimum and maximum level of cash balances to be maintained by the undertaking. Contingency payments are also not considered in – depth. Cash budgets are prepared on optimistic basis but such are not maintained for achieving the budgeted targets.

In cash planning and forecasting he argued that public sector undertakings faced the cash flow difficulties mainly due to large in sales forecasted and achieved and under utilization of production capacities. It had also been observed that a large part of their cash had remained tied-up in the non-interest earning accounts whereas the liquidity and solvency position of the public undertakings were not satisfactory.
He also opined that most of the public sector undertakings faced the problem of cash shortages due to the absence of appropriate policy in order to remove the problem of cash shortages most of the public sector undertakings heavily relied on cash credits and overdrafts facilities of the commercial banks and to some extent on short-term govt. loans.

According to him cash credit facilities should consider the cost implications before availing such facilities. Such interest cost should be minimizing by adopting sound cash management system. Therefore, the periodicity and the length of the services or facilities to be availed should be planned well in advance. The management should review the cash credit and overdraft balances on a day to day basis.

He argued that in public sector undertakings cash planning is very important. It should consider the cash flow pattern, the lean and break periods and the demand he also argued that the degree of accuracy of production and sales plans affect directly the cash planning of the public sector undertakings.

2) Bhabatosh Banerjee noticed that a good cash management system is possibly found in a pattern of receipts and payments at a least cost manner. He also argued that high liquid ratio is not the only aim of working capital management but also for economy of cost of cash management.

He observed that the rise in cash balances does not necessarily increases the liquid ratio and vice-versa. It does not affect the turnover ratios as well. A liquid ratio does not make any distinction between cash and debtors. High turnover of stock leads to high liquid ratio.

From his study it is clear that turnover ratios like creditors and inventory etc. affect the liquid ration with regard to the cash position and cash movement. Similarly it also affects current ratio and cash to current asset ratio.
As per the operating cycle concept of working capital, huge gaps were found between receipts and payments. The retention policy was also found to be rigid.

For meeting gaps between receipts and payments, he suggested the overdraft system, which turned out to be costly. He also mentioned that the overdraft system does not necessarily ensure a ‘zero optimum’. He again argued that there might have been an ‘optimum cash balance’ under each separate condition of management functions. Due to the self-liquidating nature of overdraft, different balances obtained from different management conditions may differ and may not be optimized under the existing conditions.

3) Leire San Jose, Txomin Iturralde and Amaia Maseda conducted a study on approximately 501 Spanish firms with more than 10 employees (2008). In this study, confirmatory factor analysis was used. In this study, it was observed that the P-value of the chi-square does not attain the recommended figure. It was due to the size of the sample. But the rest of the indices determined the validity of the model. They opined that cash management was a culture that forms part of the strategy of companies and dependent more on managers themselves than the characteristics of companies.

4) Anil Lohani made a study based on a survey conducted by gtnews showed that liquidity management and cash forecasting had the highest potential for improving cash management. He argued to establish a long-term standardized cash forecasting approach to forecasting cash needs. He identified two challenges in cash forecasting, i.e., business challenges and technological challenges. For these challenges, he suggested two initiatives, i.e., technological and business initiatives.

5) Joost Bergen undertook a study on 101 companies in Europe, the US, and Canada in 2005. The study revealed four cash management models like decentralized liquidity and cash flow management, centralized liquidity and decentralized cash flow management, decentralized liquidity and centralized cash flow management, and centralized liquidity and centralized cash flow management. It was also observed that decentralized organizations had the most to gain, as they were able to achieve considerable efficiencies through the introduction of a more centralized approach—perhaps through an SSC.
6) Farris and Hutchison carried out a study in order to compared cash to cash performance for benchmarking purposes for 5884 companies across 31 industries. They identified that there were industry wide changes within a petroleum supply chain.

7) M. Theodore Farris, Paul D Hutchison and Ronald W. Hasty made a study on cash to cash metric. For this they initially taken 21608 companies but latter such firms reduced to 5884 firms. This study presented an overview of cash to cash and its calculation, comparisons between product and service industries etc. The study also revealed that cash-to-cash knowledge of managers helped the service industries to improve their liquidity position and overall value.

8) Ozcan and Mccue in 1996 conducted a study on global financial performance index. In this study they considered a turnover ratio for quantifying a global financial performance index.

9) Citron, Robbie and Wright carried out a study in 1997. This study illustrated how the lending bankers used restrictive ratio covenants which include the receivables days outstanding in loan contracts.

10) Pedro Ortin Angel and Diego Prior made a study on accounting turnover ratios and cash conversion cycle. The main objective of the study was to deduce the amount of days spent completing an operational process from turnover ratios. This study provided additional tools for financial statements analysis in order to get accurate result or working capital management.

11) M. Deloof undertook a study on working capital management. His study was based on cash conversion cycle (ccc). In his study he used different measures relating to the time lag between expenditure for the purchase of raw materials and collection of sales of finished goods. He argued that the longer the time lag, the larger the investment in working capital.

12) L. Soenen carried out a research work on cash conversion cycle and its impact on profitability. In this study he argued that the degree of external financing affects the cash conversion cycle and the length of it.
13) M. Petersen and R. Rajan conducted a study on credit market competition on lending relationships. In this study they showed that companies that were rationed on credit by the banks were more likely to take trade credit loans.

14) M.J. Peel, N. Wilson and C. Howorth made a study on credit management in small firm sectors. In this study they suggested that small firms were associated with larger quantum of current assets as compared to large firms. They also argued that small firms had less liquidity, more volatile cash flows and largely relied on short-term debt.

15) J. Jordon, J.Lowe and P.Taylor in their study strategy and financial policy in small firms opined that small companies suffered from larger asymmetric information.

16) A. Berger, F. Klapper and G. Udell undertook a study on some Banks regarding their ability to lend to informational opaque small business. In this study they saw that small and medium sized enterprises had greater informational capacity than larger firms which worsened the information asymmetry problems.

17) Website [www.fma.org](http://www.fma.org) revealed a study on cash conversion cycle in SMEs based on 4076 Spanish SMEs during the period 2001-2005. This study is based on partial adjustment model which characterizes the affect of cash conversion cycle. He opined that all firms pursued a targeted cash conversion cycle to which they attempted to converge.

18) Ruth Banomyong conducted a study for measuring and exploring the cash conversion cycle of an international supply chain in Thailand to USA. In this study he used the C2C model. He showed that the C2C in the study was the higher than for the USA importer but less than the Shrimp supplier and exporter in Thailand. He mentioned that USA retailer spent a lot of money in inventory. He also mentioned that USA importer was the best performer in managing its cash flow in that supply chain.

19) J.D. Moss and B. Stine in 1993 carried out a study regarding the liquidity of the firms. They suggested that the useful way of assessing the liquidity of firms was with the cash conversion cycle. It measured the lag between cash payments for purchase of inventories and collection of receivables from customers. According to them current ratio and quick ratio were the useful measures of the liquidity of the firms. They also focused on the static balance sheet values and firm size was a factor in the length of the CCC.
20) M.L. Jose, C. Lancaster and J.C. Stevens made a study on liquidity management. In this study they argued that for long-time prospects and healthy bottom lines of the business needed good liquidity management. They also mentioned that the cash conversion cycle was a dynamic measure of ongoing liquidity management. It combined both the balance sheet and income statement data for measurement. They also argued that there was a significant and negative relation between profitability and CCC.

21) Ali Uyar undertook a study on cash conversion cycle regarding its firm size and profitability. For this study he selected seven industries relating to merchandising and manufacturing sectors. All total 166 corporations were selected. He showed that retail / wholesale industry has shorter CCC than manufacturing industries. He also indicated that there was a significant negative correlation between the length of CCC and the firm size. He also opined that the correlation between the length of CCC and the profitability was also negative.

22) G. Schilling in his study working capital’s role in maintaining corporate liquidity in 1996, said that it was critical to deployed resources between working capital and capital investment because the return on investment was usually less than the return on capital investment. He fixed up the relationship between CCC and minimum liquidity required. In this study he showed that if the CCC lengthens, the minimum liquidity required must increase and conversely, that if the CCC shortens the minimum liquidity required must decreased.

23) Vedavinayagam Ganesan analyzed the efficiency of working capital management in telecommunication industry. In this study he used different variables to represent the working capital were day’s sales outstanding, days inventory outstanding, days payable outstanding, days working capital and current ratio while profitability and liquidity represent by cash conversion efficiency, income to total assets and income to sales. In this study he found that though day’s working capital was negatively related to the profitability it was not significantly impacting the profitability of firms in telecommunication equipment industry.
24) P.C. Narware made an empirical study on Indian National Fertilizer limited. His study was based on the data from 1990-91 to 1999-2000. In this study he showed that the working capital management and profitability of the company both negative and positive association. He also encountered that increase in the profitability of a company was less than the proportion to decrease in working capital.

25) Abdul Raheman and Nasar Mohamed undertook a study on working capital management and profitability. For this study they selected 94 Pakistani firms listed on Karachi stock exchange. They collected data for a period of six years i.e. from 1999 to 2004. The study concluded a strong negative relationship exists between variables of the working capital management represented by liquidity and debt with profitability of the firm.

26) T Afza and M.S. Nazir conducted a study on working capital policies, profitability and risk of the firms. For this study they selected 208 public limited companies listed at Karachi Stock Exchange for a period of 1998-2005. In this study they used cross-sectional regression models. In this study they a negative relationship between the profitability measures of the firms and degree of aggressiveness on working capital investment and financing policies. The result of the study also indicated that the firms yielded negative returns if they follow an aggressive working capital policy by investigating the relative relationship between the aggressive or conservative working capital policies.

27) Kesseven Padachi worked on Trends in working capital management and its impact on firm’s performance. For this study he selected 58 small manufacturing firms in Mauritius for the period from 1998 to 2003. He founds that high investment in inventories and receivables was associated with lower profitability. For this he used return on total assets as a measure of profitability. The findings of the study revealed an increasing trend in the short-term component of working capital financing.

28) Nor Edi Azhar Binti Mohamed and Noriza Binti Mohd Saad made a study on working capital management, the effect on market valuation and profitability in Malaysia. For this they opted 172 randomly selected companies in Burra Malaysia.
Cash Management in Indian Corporate Sector: A Study of Select Companies

The period of the study was five years i.e. from 2003 to 2007. Ratio analysis was chosen as a performance measurement and indicators of this study. The study employed three model specifications in order to test the postulated hypotheses, using market value measure of Tobin Q and profitability measured by return on invested capital and return on asset along with other independent variables. The outcome of the study showed that there were significant negative association between working capital variables with firm’s market value and profitability.

29) I. Lazaridis and D. Tryfonidis conducted a study on the relationship between working capital management and profitability. In this study they selected 131 companies listed in Athens Stock Exchange (ASE) for the period of 2001-2004. They conducted the study during 2006. They showed that there was a statistical significance between profitability and cash conversion cycle.

30) Garcia Teruel and Martinez Solano undertook a study considering a panel of 8872 small to medium sized enterprises from Spain during the period 1996-2002. They used the panel data methodology for measuring the effects of working capital management on profitability. The results of the study demonstrated that the managers could create value by reducing their inventories and the number of days for which their accounts are outstanding. In other words, shortening the cash conversion cycle improves the firm’s profitability.

31) OI Falope and OT Ajilore considered a sample of 50 Nigerian quoted non-financial firms for the period of 1996-2005 for their study. In this study they utilized panel data econometrics in pooled regression, where time-series and cross-sectional observations were combined and estimated. In this study they found a significant negative relationship between net operating profitability and the average collection period, inventory turnover in days, average payment period and cash conversion cycle. They also found that there were no significant variations in the effects of working capital management between large and small firms.
32) D Mathuva in 2009 examined the influence of working capital management components on corporate profitability. For this he analysed 30 firms listed on the Nairobi Stock Exchange during 1993-2008. In this study he used Pearson and Spearman’s correlations, the pooled ordinary least square and fixed effects regression models to conduct data analysis. The key findings of his study were 1) there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers and profitability, 2) there exists a highly significant positive relationship between the period taken to convert inventories into sales and profitability and 3) there exists a highly significant positive relationship between the time it takes the firm to pay its creditors and profitability.

33) Amarjit Gill, Nahum Biger and Neil Mathur made a study considering 88 companies out of 300 financial publicly traded manufacturing companies during 2005 to 2007 from Mergent online database. They used cross-sectional yearly data in this study.

34) Fungai N Mauchi et al. conducted a case study on Hunyani Flexible products for the period 2000 to 2010. In this study they used the judgment sampling procedure. For this reason a sample of thirty out of fifty employees was chosen which included ten managers, ten accounts clerks and ten employees etc. The study revealed that more cash would be tied up in debtors. In this study they argued that the key to successful cash management lies in tabulating realistic projections, monitoring collections and disbursements, establishing effective billing and collection measures and adhering to budgetary parameters because cash flow would be the problem to the business organization. They also suggested that cash management was the culture form part of the strategy of companies and more depended on managers themselves.

35) Osama Suhail Hayajneh and Fatima Lahcen Ait Yassine undertook a study on the relationship between working capital efficiency and profitability on the 53 Jordanian manufacturing firms listed in Amman Exchange Market for the period from 2000 to 2006. In this study descriptive statistics, Pearson Correlation Coefficients, Ordinary least squares and two stage least squares regression model has been used. In this study they found a negative significance relationship between profitability and the average receivable collection period, average conversion inventory period and average payment period and also the cash conversion cycle.
The study also revealed a positive significance between the size of the firm, growth of sales and current ratio and profitability. They also showed that financial leverage correlated negatively with profitability.

36) C. S. Kim, D.C. Mauer and A.E. Shcrman made a study on corporate liquidity in 1998. They used the logarithmic growth rate in the index of leading economic indicators as a proxy for the extent of profitable investment opportunities. They found that a firm’s cash holdings increase with the level of investment opportunities and uncertainty in future cash flows. Similar type of study was conducted by T. Opler, L. Pinowitz, R. Stulz and R. Williamson in 1999. They also found the same results.

37) J. B. Baskin in his study of Corporate Liquidity in Games of Monopoly Power in 1987 argued that firms with abundant investment opportunities also had an incentive to hold more cash to maintain their competitive positions. He also showed that holding excess cash might deter competition in a firm’s product markets.

38) S.C. Myers (1977) in his study Determinants of Corporate Borrowings argued that the conflicts between share holders and debt holders increase the cost of issuing additional debt and may cause a firm to forgo profitable investment opportunities. He also argued that under investment problem was more acute incase of highly levered firm. He opined that to avoid the agency costs of debt, managers should choose low levels of debt or choose to hold excess liquid assets.

39) T.L. Opler, L Pinkowitz, R.Stulz and R.Williamson (1999) undertook a study on corporate cash holdings. In this study they suggested that dividend paying firms or those that can easily sell assets hold lower levels of cash. They argued that firms with multiple product lines and low inventory levels relative to sales had shorter cash conversion cycles and therefore hold less cash. They also argued that through derivatives cash holdings can be reduced by coordinating risk management and cash management activities.

40) H. Almeida, M. Campello and M. S. Weishbach (2004) conducted a study on cash flow sensitivity of cash. In this study they examined the propensity to save cash from cash inflows for financially constrained and unconstrained firms. They also found positive cash flow sensitivity to cash flows for financially constrained firms but found no such relationship for firms that are financially constrained.
V. Acharya, H. Almeida and M. Campello (2007) in their study ‘Is Cash Negative Debt? A Hedging perspective on Corporate Financial Policies’ found that financially constrained firms preferred using excess cash flows to increase cash holdings instead of paying down debt when they had a high need to hedge against the possibility of future cash shortfalls that helped them to forgo profitable investment opportunities. They also argued that cash should not be viewed as ‘Negative Debt’ for financially constrained firms.

A. Dittmar, J. Mahrt-Smith and H. Servaes (2003) made a study on International Corporate Governance and Corporate Cash holdings. In this study they selected 11000 companies from 45 countries. They found strong support for agency explanations for cash holdings. The result of the study showed that companies in countries where corporate governance is weak hold significantly more cash. Other factors like investment opportunities and information asymmetries, which affect the cash holding previously, did not expert much influence on the level of cash holdings of firms with weak shareholder protection.

J. Harford, S.A. Mansi and W.F. Maxwell (2008) found in spending hypothesis that firms with poor corporate governance spend excess cash on acquisition and large capital expenditures rather than saving it for future purposes. Such step reduced the value of the firm. In their study, they found no evidence that cash holdings affect R&D expenditures; they found that cash rich firms with poor shareholders rights invest less in R&D. The result of their study showed that cash rich firms with poor corporate governance had lower profitability and valuation.

1.6 Research Gap:

Different studies have been conducted in the past to explain the management of cash of companies. But, the subject is such that there is ample scope for future studies in management of cash.

We know that it is the age of globalization. Globalisation gives the companies a new economic environment. Indian companies can easily sell their products in the foreign market. Similarly, foreign companies started business in India. Therefore, all the companies suffering from stiff competition and it widen the opportunity of making more choice to the investors. Hence, the companies found them in a complex situation.
Because, holding fewer amounts of cash put the companies into liquidity problem whereas holding excess amount of cash, companies can forgo profitable investment projects which indirectly affect the profitability.

Therefore, it is a serious problem to all the companies and it is very difficult to the financial manager to take the decision in appropriate time. It now turned into a subject of study how finance managers of Indian companies changed themselves in the changed scenario. It is to be studied as to what they think about the optimum level of cash balance and the factors on which they pay relative importance for determination of optimum cash level.

In the earlier studies in case of public sector undertakings cash is needed only for operational purposes, not for speculative purposes or precautionary purposes and therefore, the problems of liquidity and profitability are not arises in these sectors. But, our study is based on private sectors. So, it is very difficult for the finance manager to control the liquid cash after considering all the purposes for which cash is meant.

In our study one of the important areas where we give the emphasis is the Cash Conversion Cycle. Most of the earlier studies it is attempted to reduce the CCC but in this study, our objective is also to reduce the CCC as well as to identify the factors which are responsible for the higher Cash Conversion Cycle. Most of the studies earlier considered one or two industries. But, in our study we consider IT, Consumer Durable, Pharmaceuticals, FMCG and Retail sectors. We think that it is more comprehensive to give a general comment on the basis of the result considering all the companies. Current ratio and quick ratio are the two ratios which are used in most of the studies. In our study we consider the Inventory Turnover Ratio, Debtors Turnover Ratio, Creditors Turnover Ratio, Debtors more than six months along with current ratio. None of the earlier studies used the profitability and cumulative profitability concept at a time. In this study we measure the impact of profitability and cumulative profitability on CCC which is not conducted earlier.
Cash Holding is also another important aspect in our study. Here also, one or two industries are considered in the earlier studies. Most of the studies used only one or two variables. But, in this study we used Degree of financial leverage, size of the organization, profitability and Investment as variables. We also measure the impact of profitability, size of the organization and investment on Average Cash Holding Which is not conducted in previous studies.

In this study we have also given emphasis on the Credit Score for measuring the credit worthiness. Earlier studies are based on one industry but in our study we consider twenty five companies from five industries taking five companies from each sector. Like other studies of measuring credit score we also used the Bathory’s risk description model but instead of giving emphasis to stock we have given emphasis to the cash balances which is new in this field. The application of Bathory’s risk description model, in Cash Management is totally a new application, which is not used in the previous studies. With this we can easily measure the credit score which increases or decreases the credit rating of the companies in the competitive market.

Moreover, if we consider the previous studies, we find out certain limitations. One major limitation, in some of the studies is that they consider a sample size of a few companies. A study considering less than 30 companies is statistically said to be a study of small samples. Many studies have been with small samples from few industries where cross sectional analysis is missing.

Another important limitation is the study period. Conclusion from studies covering short span of period may be sometimes misleading. In our study, considering ten years period for computing credit score is more impressive. Such result gives the companies more priority in decision making regarding credit rating.

Now come to methodology portion. The methodology used in the study is always important. The number of dependent variables used in the studies is very small. Still there are studies where single equation model is used which fails to recognize the interdependent variables.
Considering the above gaps the present study analyse different aspects of cash management and also consider the factors affecting Cash Conversion Cycle, Cash Holding and Credit Worthiness. We think that this work enrich the study of Cash Management as well as companies for maintain better liquidity position and similarly not foregoing profitability.

1.7 Limitations of the Study:

(1) This study is based only on the data contained in published financial statements.
(2) Cash conversion cycle, average cash holding and credit score have been considered in the study.
(3) In this study for computation of CCC we consider the cost of goods sold. Better result can be obtained if we consider stock of raw-materials, W-I-P, finished goods etc. But, lack of data it is not possible to consider all the factors in detail.
(4) The impacts of some common macroeconomic factors or general factors are not considered for the sake of simplicity of the study.
(5) The multicollinearity factors may exist in the multiple regression analysis.
(6) This study is based on Bathory’s – ‘risk description model’. Here eight ratios are computed from the data of selected companies as per Bathory’s model. Other ratios can also be computed.
(7) In this study for calculating normalized working capital we deducted fifty percent of stock from Net Current Assets. According Bathory’s model, in case of retail companies the deductible portion may be twenty five percent. But, in this study for comparison of uniqueness and simplicity we deducted fifty percent of stock from Net Current Assets.
(8) In this study for measuring liquidity, emphasis is given on Net Profit / current liabilities ratio, not the generally accepted and used liquidity ratios like current ratio and quick ratio.
(9) According to Bathory’s – ‘risk description model’ the main influencing factors in this model are the accumulated profitability and the inventory. But in this study,
instead of inventory we consider cash flow which is one of the prime influencing factors of our analysis.

(10) More companies can be selected from the selected industries/sectors but for simplicity, lack of time and unavailability of data it is not possible to select all companies for general comment.

(11) Investment of excess cash or even amount of working capital in Derivative Market or Stock Market is not considered in this study for the shake of simplicity.

1.8 Structure of the Study:

The structure of the study stands like the following.

Chapter 2– History of Selected Companies under study

Chapter 3 – Cash and Cash Management – A Theoretical View

Chapter 4 – Cash Conversion Cycle in Corporate Cash Management

Chapter 5 – Controlling, Holding and Centralisation of Cash in Corporate Cash Management

Chapter 6 – Cash Flow and Credit Worthiness in Corporate Cash Management

Chapter 7 – Conclusion, Recommendations and Suggestions

In our present study, an attempt will be made to analyze the cash management of some selected companies in Indian Industry and also measure their liquidity and profitability. Our present study highlights the factors which affect the cash management, such as Cash Conversion Cycle, Cash Holding, Cash Flow and Creditworthiness. In our present study we tried to establish the relationship among these factors. Hope it will enrich the Cash Management literature as well as it will help the organization for better management of their cash and cash equivalents.