A STUDY OF WORKING CAPITAL MANAGEMENT AND PROFITABILITY IN SELECTED INDIAN COMPANIES

Thesis Submitted to the Vidyasagar University

For the Degree Of

Doctor of Philosophy in Commerce

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CERTIFICATE

This is to certify that the thesis entitled "A Study of Working Capital Management and Profitability in selected Indian Companies ", which being is submitted by Mr. Rana Pratap Pal for the award of the degree of *Doctor of Philosophy in Commerce* under the Vidyasagar University, is a bonafide research work carried out by him under my supervision and guidance. The results embodied in the thesis have not been submitted to any other University or Institute for award of degree or prize before.

Dated: **(Dr. AMIT Kr. DE)**
Principal
Prabhat Kumar College, Contai
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Candidate's Declaration

I Rana Pratap Pal, Department of Commerce, certify that the work embodied in this Ph.D. thesis is my own bonafide work carried out by me under the supervision of Dr. Amit Kumar De, Principal, Prabhat Kumar College, Contai at Vidyasagar University, Paschim Medinipur, West Bengal. The matter embodied inthis Ph.D. thesis has not been submitted for the award of any other degree.

I declare that I have faithfully acknowledged, given credit to and referred to the research workers wherever their works have been cited in the text and the body of the thesis. I further certify that I have not will fully lifted up some other's work, paragraph, text, data, result etc. reported in the journals, books, magazines, reports, dissertations, thesis etc. or available at web-sites and included them in this Ph.D. thesis and cited as my own work.

Date: 11.07.2016

(Rana Pratap Pal)

ACKNOWLEDGEMENTS

Dated: Rana Pratap Pal

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CHAPTER – I

INTRODUCTION

1.1 WORKING CAPITAL AND PROFITABILITY

The relationship between working capital and profitability plays a very important role for the long-term survival or growth of the company. Hence, it should be managed efficiently to ensure the company's overall development.

Working capital is one of the most complicated factors of any business organization. In general, working capital represents the difference between current assets and current liabilities. But this numerical difference is not suitable for making effective managerial decision in the present scenario. Therefore, the different components of working capital should be examined very critically, so that the importance of each component is taken into account in determining the working capital.

Part of the current asset which is financed by long term liabilities is working capital. As working capital is the difference of current asset and current liabilities, which implies the current assets is financed by two sources. Some portion of current assets is financed by current liabilities and the remaining part of the current asset is financed by the long term liabilities. The cost involving for maintaining current liabilities is much lower than raising long term liabilities. So the difference of the cost of maintaining the long term liabilities and current liabilities leads to increase in profitability of the business concern. As a result, the management of working capital helps in reducing overall cost of capital as well as increase in profit.

Profit may be described as the main objective of any kind of business organization. Without profit, there is no question of long-term survivability for any organization. It is defined as the difference between total revenue and total expenses. Sales are the main component of revenue and cost of production is the main component of expenses. Theoretically, importance of working capital is to organize the smooth day-to-day operations of an organization. But, it should be noted that all financial activities related with production and sales, are also equally important, because those are considered day-to-day organizational activities. Fixed capital and working capital are the two types of capital utilized by any business organization. Fixed capital refers to the investment in the fields which are required for long run of the business, i.e., land, machinery, furniture, while working capital is required for the short run purposes. Short run means time limit of a particular financial year items like debtors, cash, bank balance, stock of material comes under requirement of working capital. Working capital is the short-term investment which is measured as the difference between Current Asset and Current Liabilities.

Assets that can be converted into cash within a short term is called current asset. Current liabilities are short term liabilities. Management of current assets and current liabilities is more challenging compared to the management of the fixed assets or fixed capital. Hence, financial managers should pay more attention for maintaining the desired level of current assets and current liability. Since, working capital is the difference of current assets and current liabilities, failure or success of any organization mostly depends on the efficient management of working capital. Because, inappropriate investment in current assets or current liabilities results in the imbalance of these two components of working capital. According to E.W.Walker, "working capital provides the net resources with which a company can finance day-to-day operations". A firm's profitability is determined by the way its working capital is

managed. According to Michael Firth, "Almost every activity of business of everything that happens in the business is related to working capital decisions. In fact the reason for working capital not being able to optimize itself is that there are various functional areas influencing it, and those primarily take care of their own needs". Working capital funds quantum reflects the liquidity of the business but increase in liquidity may not necessarily increase profitability adequately. The larger the quantum of working capital in the compositions of the total capital of the firm, the smaller will be the total return on capital employed in the business, other factors remaining constant. On the other hand, a reduction in working capital may increase the overall return of the firm. According to National Council of Applied Economic Research of India, the role of working capital in industry has two aspects: (a) optimum increase in the volume of the output and (b) the optimum allocation of the available volume of working capital to different items of current assets. Effective management of working capital demands that the incremental requirement would be less in proportion to the increase in the volume of output. The aeration of the flow of working capital should be such that there is constant economy in its use. Movements of current assets of various processes are influenced by the proportion between fixed capital and working capital, such as cash to inventories to receivables and receivable back to cash. Working capital requirement becomes less if the turnover rate is smooth. To identify the character or trend of working capital of any business organization or a specific industry, the nature and pattern of that firm or industry should be examined first.

Profitability is a combination of two words, i.e., profit and ability. Thus, it represents the ability of profit. Profit calculated after a certain period is the excess of income over the expenditure, It is not necessarily true that the profit of a specific year would remain the same for the subsequent years. Profit can fluctuate from time to time as it depends upon many

factors, such as cost of production, sales volume, market share, etc. Some of the factors might be controllable and some are not. But for long run survival of the organization, profit must be ensured. Otherwise, no organization can stay in the competitive business environment. For this reason, it is the most important thing to find out the tendency of profit i.e.to consider the increase or decrease of the profit amount over a certain period and "Why", "When" and "How" that occurred. This is only possible after critically examining the last few years performance of profit and profit related components and then it is possible to find out the trend of profit,

Unfortunately, there is no such tool or methods to relate working capital and profitability by any theoretical approach. As a result, managers can only calculate the value of working capital but how it affects profitability cannot be extracted from any explicit equation. It is a very common finding but that the result of calculated working capital only works as a numerical value in papers but is not enough to focus or help the managers in their respect any more. Only the construction of explicit equation cannot solve the real life problems.

Most of the study findings are either negative correlations with the working capital and profitability or the effect of Cash Conversion Cycle, (which refers to the length of the time between the payments of sales revenue). The cash cycle refers to the time that elapses from the point when the firms make an outlay to purchase raw materials to the point when cash is collected from the sales of finished goods produced using those raw materials. Different patterns of cash cycles and cash flows may be there, depending upon the nature of the business. The cash cycles are that part of the operating cycle that must be financed by the firm. The concept of cash cycle may be shown as:

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┌─────────────────────────────────┐
│ Credit purchase of Raw material │
│ Other recurring outstanding     │
│ expenses                        │
└─────────────────────────────────┘

┌──────────────────┐   ┌──────────────┐   ┌──────────────────┐
│ Average  Payment │   │ Production   │   │ Average Stock in │
│ (Time)           │   │              │   │ hand (Time) RM   │
└──────────────────┘   └──────────────┘   └──────────────────┘

                                          ┌──────────────────┐
                                          │ Average Stock in │
┌──────────────────┐   ┌──────────────┐   │ hand (Time) FG   │
│ Payment made to  │   │ Credit Sale of│  └──────────────────┘
│ creditors and    │   │ Finished Goods│
│ expenses         │   │              │
└──────────────────┘   └──────────────┘

┌──────────────────┐   ┌──────────────┐
│ Average collection│  │ Collection of│
│ period           │   │ Cash         │
└──────────────────┘   └──────────────┘
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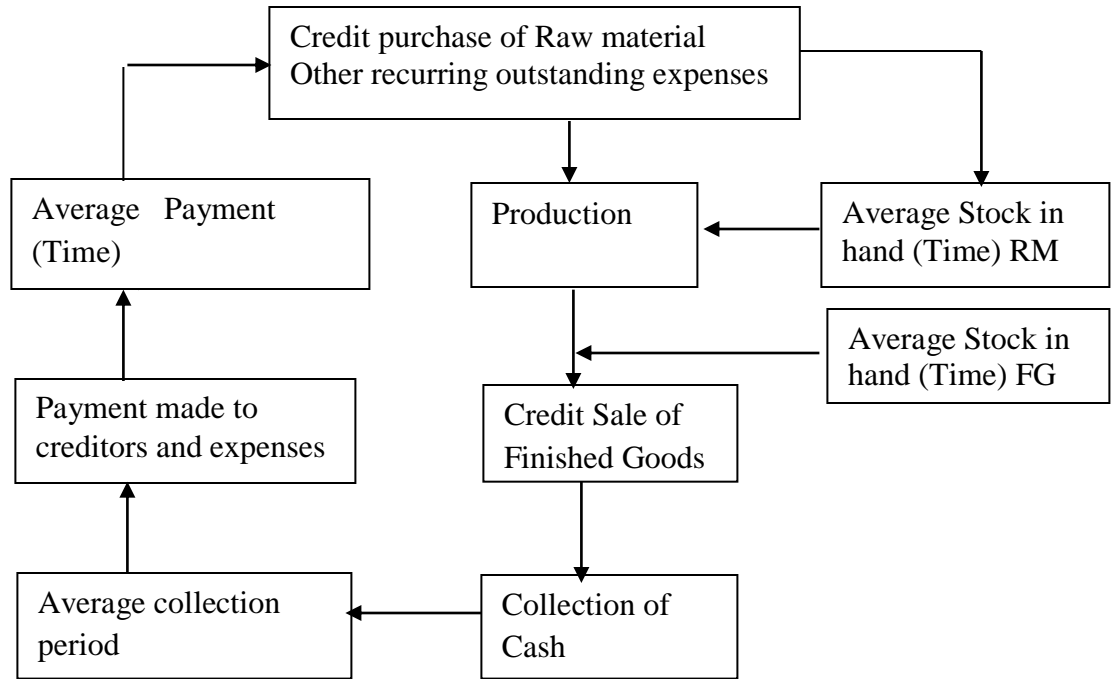
Average collection period is one of the important factors which directly affect the working capital as the collection period of cash affects total cash balance which is an important part of the working capital.

Sometimes, we might consider other factors which may be described as Financial Needs for Operation. Although, Working Capital and Financial Needs for Operation are based on similar theoretical concepts, in practice there are some kinds of differences encountered. In case of working capital, we consider only current asset and current liabilities but in practice of FNO (From Now On) we consider those liabilities that occur for short term operating purposes. Thus, when a firm receives an advance from a party, this advance amount is shown in balance sheet as liability for goods delivery. These kinds of liabilities are considered as Operating Liabilities. Operating liabilities play an important role in the management of working capital. Because, at the time computing the value of working capital , such kind of operating liabilities

should come under current liabilities. As a result, amount of working capital might vary but may not be so effective for the long run. Cash conversion cycle, operating liability- all are interrelated.

Seasonality of working capital is another important factor. Seasonality of working capital is explained as the temporary requirement of working capital (not required on continuous basis) which often occur either due to the excess production at a particular point of time, or the unexpected increase in credit sales, or high demand of some products over a particular period of time. Many industries are highly characterized by seasonality, but unfortunately, these seasonal factors are always avoided by most of the industries which causes troubles due to the imbalance of working capital.

The main objective of this study is to find out the relationship between working capital and Profitability. In order to achieve this, we critically examined all the individual factors which affect different components of working capital as well as profitability. According to theoretical approach of Ratio Analysis, the interrelationship that exists between the different items in the financial statement (Balance Sheet) are revealed by accounting ratios, thus, they are equally useful to the internal management , prospective investors, creditors and outsiders. Besides, ratios are the best tools for measuring liquidity, solvency, profitability and management efficiency of a firm. That is why the role of accounting ratios is very significant to increase the efficiency of the management, to reduce the expenditure and to increase the rate of profit etc. Ratio analysis helps to analyze the probable causal relation between the different items after analyzing and scrutinizing the past result. It helps to take time dimensions into account by trend analysis.

As the ratio analysis helps in finding out the result of the financial performance, we have calculated and analyzed several ratios like current ratio, acid test ratio, debtors turnover ratio, inventory turnover ratio, working capital turnover ratio, net profit turnover ratio, debt-equity ratio and cash conversion cycle; these ratios are generally tested for the liquidity and solvency of any business organization. While performing the Profitability test we should go through the net profit ratio, price earnings ratio, earning per share ratio, return on asset, return on equity etc.

For this analysis we have collected the data of five different Indian Industries, those are Automobile, Cement, Fertilizer, Heavy Engineering and Steel industries. We are going to use some kinds of statistical measures like Correlations, regressions, Factor analysis, central tendency etc. After studying annual reports of different companies relating to various industries we have selected these five industries which are capital intensive and requirement of working capital is high. There are other industries like pharmaceuticals, construction, etc which are also capital intensive but this is the limitation of the present study.

1.2 CHOICE OF THE STUDY

We have analyzed the working capital management of five Indian sectors like Automobile, Cement, Fertilizer, Heavy Engineering and Steel. For each sector we have taken five companies. Ashok Leyland, Bajaj Auto Limited, Eicher Motors Limited, Hindustan Motors Limited and Tata Motors Limited from Automobile sector. ACC Limited, Everest Cement, Dalmia Cement, Grasim Industries Limited and J. K. Cement from Cement sector. DCM Shriram Limited, Hindustan Insecticides Limited, National Fertilizer Limited, Paradeep Phosphate and Rashtriya Chemical & Fertilizer Limited from Fertilizer sector. Bharat Earth

Movers Limited (BEML), Bharat Heavy Electricals Ltd. (BHEL), Heavy Engineering Corporation Limited, ISGEC Heavy Engineering Limited and Tractor India Limited from Heavy Engineering sector. Adhunik Metaliks Limited, Jindal Steel and Power Limited, Rashtriya Ispat Nigam Limited, Steel Authority of India Limited and Tata Steel from Steel sector. We have adopted several accounting, economic and statistical tools to analyze the results.

1.3 OBJECTIVES OF THE STUDY

The main motivation for this research is to analyze the present scenario of Indian companies regarding the practice of working capital management. After critical examination of various articles, research works and yearly Financial Reports of selected Indian companies, the answer to the following questions was considered intensely:

"Does the Working Capital Management affect the Profitability of the Indians Companies?"

On the basis of this problem statement, the objective of the study has been developed. This might be helpful for effective financial management. The brief objectives of the study are:

1. To find the relationship of Working Capital Management and profitability of selected Indian companies over a period of ten years.
2. To find the effect of various parts of working capital on the profitability.
3. To find out the effect of working capital and size of the firm.

1.4 COVERAGE OF THE TIME PERIOD

The period of the study chosen is 2004-2005 to 2013-2014 for the assessment of the performance of five selected Indian industries namely 1.Automobile 2.Cement 3.Fertilizer 4.Heavy Engineering and 5.Steel

1.5 PLANS OF OUR STUDY:

Chapter I   :   Introduction

Chapter II   :   Review of the Literature.

Chapter III   :   Data Base and Methodology

Chapter IV   :   Working Capital Management of selected Industries:

-   Regression Model

Chapter V   :   Working Capital Management of selected Industries:

-   Ratio Analysis

-   Factor Analysis

-   Multiple Regression Model

Chapter VI   :   Summary and conclusion

Bibliography

CHAPTER – II

2.1 EXISTING LITERATURE ON THE WORKING CAPITAL MANAGEMENT

Adina Elena Dănuleţiu (2010) in his article entitled "Working capital management and profitability: a case of Alba county companies" have focused on the management of operating cycle is the most important section of the company's financial management. The objective of operating cycle's management is that of any capital investment: the most efficient allocation of capital in terms of risk decrease. The amortization of risk-profitability relation is mostly achieved within the balance between the need of circulating assets and sources mobilized for its funding. To meet the need for profitability, the management of circulating assets aims at achieving the operating cycle with a minimum level of circulating assets, and the management of circulating liabilities aims at the lowest cost of procuring the necessary capital. In order to meet the need for risk decrease, the management of circulating assets aims at eliminating the stock rupture, the lack of liquidities; a concern accompanied by higher operating costs and reduced profitability. Main findings of the study is, negative weak relation between working capital management indicators and profitability rates. The weak resulted connection can be explained by the fact that the sampled companies belong to different fields of activity. Gap of the study may consider as the study focused on some secondary data only and the volume is too little to finding any conclusion.

Abdul Rahemanand Mohamed Naser(2007) in their article entitled "Working Capital Management and Profitability – Case of Pakistani Firms" have focused on other than the

negative relationship between the Collection Period and Profitability, some other significant findings of the study are, Importance of mode of financing the current asset and its effect on profitability, negative relationship between liquidity and profitability, Positive relationship between size of the firm and its profitability. They tried to find out the relationship of different independent variable to the dependent variable, for which they carried out two types of studies. Descriptive analysis was the first one, where they considered average and standard deviations of the sample data while in the second one, the Quantitative Analysis, they used Pearson's correlation coefficients and Least Square Regression model. Gap of the study may described as the authors of this study have tried to follow the research work previously initiated by Elgeli, Deloof, Shin & Soenon where they found that there is a negative relationship between working capital management and profitability. The authors also found the same thing in their study.

Dr. Santanu Kr. Ghosh W Santi Gopal Maji(2000) on their article entitled "Working capital management efficiency : A study on the Indian cement industry" have focused on measuring the overall efficiency of working capital management and after the study they found that, Indian Cement industry did not perform remarkably well during this period. Present study also suggests that a further study may be helpful for identifying the forces that govern this chronic nature of inefficiency present in the Indian cement companies in the matter of overall working capital management. Gap of the study is, they do not focus on any specific factor; they only consider secondary data and found there result by using some statistical tools.

Dr. Ioannis Lazaridis, Dimitrios Tryfonidis(2006) in their article entitled "The relationship between working capital management and profitability of listed companies in the

Athens Stock Exchange" have focused on , strong negative relationship between the cash conversion cycle and corporate profitability. It seems from the study that operational profitability dictates how managers or owners will act in terms of managing the working capital of the firm. They also observed that lower gross operating profit is associated with an increase in the number days of accounts payables. The above could lead to the conclusion that less profitable firms wait longer to pay their bills taking advantage of credit period granted by their suppliers and managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables, inventory) to an optimum level. Main gap of the study is that their study followed previous study made by different authors and has same results that there is a negative relationship between working capital and profitability. There is no such extra contribution by the Authors of this article.

Edwarde .Yardei (1978) in their article entitled "A Portfolio-Balance model of corporate working capital" have focused on some factors like, in estimating a portfolio-balances system of equations with a simple first-order autoregressive structure, the serial coefficients (pi's) constrained to be equal to one another this was done for the empirical model. The p that minimizes the sum of squared residuals of the equation system is equal to -0.1. In none of the equations was the serial coefficient that minimized the equation's sum of squared residuals greater than 0.1 or less than -0.2. Since this suggests that auto correlations not a very serious problem for the model, no attempt was made to re-estimate the model with an adjustment for serial correlation. Also focused on the presence of contemporaneous correlation in a system of asset demand equations indicates that variables that might have detected

additional substitution effects among the assets are missing. As an indication of how well the econometric model captures most of the substitution effects among the five assets. The study is a part of a larger project being conducted by the Cowles Foundation of Yale University. The objective of this project is to estimate general disequilibrium models of the various sub-sectors of the financial sector using flow of funds data. Two of these sub-sectors, namely mutual savings banks and savings and loan associations, have already been modeled by Smith and Brainard. The research of this paper resulted in the estimation of another sub-sector, the nonfinancial corporate sub-sector. Gap of the Study may be considered as that, they are able to construct some mathematical equation for this purpose, but it is important that, research equation is applicable or not in practical situation has not been properly addressed in their study.

F. W. Mueller, JR (1953) in his article entitled "Corporate working capital and liquidity" has focused on working capital and liquidity and finds the term "working capital" should be coextensive with current assets. A better term, they need one to describe its function, would be "revolving capital". The nature of an asset is determined by its function and not by its name. The functional concept of revolving capital overcomes inconsistencies in the equity concept. Ordinary use of the term "liquidity" makes it more a problem of marketing than accounting and finance. The conversion of an asset into cash is a test not of liquidity but of sustainability also. The tenets of comparability are violated in attempts to measure the "degrees" of liquidity. The attainment of economic objectives requires the complete process of exchanging goods for money followed by the exchange of money for goods. The function of revolving capital is to provide an orderly process for the gradual emergence of utilities to

satisfy human wants. Liquidity is a consequence of the dynamic function of satisfying social wants. It is essential to differentiate between individual and aggregate analysis, financial and economic liquidation, and structural and organic liquidity. The study mainly tries to focus on the research questions, what is meant by corporate working capital? What is meant by liquidity? And where is the source of liquidity? Thosequestions ask by themselves and they tried to get the answer.

Hasan Agan Karaduman, HalilEmre Akbas,Arzu Ozsozgun Caliskan and Salih Durer (2011) in their article entitled "The Relationship between Working Capital Management and Profitability: Evidence from an Emerging Market" have focused on the relationship between working capital management efficiency and profitability of selected companies in the Istanbul Stock Exchange for the period of 2005-2009 is analyzed by employing panel data methods. The Cash Conversion Cycle (CCC) is used as a measure of working capital management efficiency, and return on assets (ROA) as a measure of profitability. In the light of the results of the estimated models for Turkey, working capital management unquestionably influences the profitability of the companies listed in the ISE. The companies should focus on working capital management in order to increase their profitability by seriously and professionally considering the issues on their cash conversion cycle which is derived from the number of day's accounts payable, the number of day's accounts receivable, and the number of days of inventories. The findings suggest that it may be possible to increase profitability by improving efficiency of working capital.

Ismael G.Dambolena, Sarkis J. Khoury (1980) in their study entitled "Ratio Stability and Corporate Failure" have focused on another model on corporate failure that uses financial ratios and discriminant analysis as its core. Their research indicated a substantial degree of instability, measured by (1) the standard deviation of the financial ratios over the past few years, (2) their standard error of estimate, and (3) their coefficient of variation, in the ratios of firms that went bankrupt when compared with those that did not. This instability showed a significant increase over time as the corporation approached failure. The inclusion of the stability of ratios in the analysis improved considerably the ability of the discriminate function to predict failure. Their model classified firms into failed and non-failed groups. They also outline the milestones of recent corporate failure research.

Inder K. Khurana, Xiumin Martin, and Raynolde Pereira (2006) in their study entitled "Financial Development and the Cash Flow Sensitivity of Cash" have focused on the prior research article that market imperfections and the lack of institutions that protect investor interests create a divergence between the cost of internal and external funds, thereby constraining firms' ability to fund investment projects through external financing. Financial constraints force firms to manage their cash flows to finance potentially profitable projects. A related stream of research documents that financial constraints due to costly external financing are more pronounced in underdeveloped financial markets. They examined the influence of financial development on the demand for liquidity by focusing on how financial development affects the sensitivity of firms' cash holdings to their cash flows. Using firm-level data for 35 countries covering about 12,782 firms for the years 1994-2002, they find the sensitivity of cash holdings to cash flows decreases with financial development. They have also considered

additional implications of firms' cash flow sensitivity of cash with respect to firm size and business cycles. Overall, they provided new cross-country evidence of the role of financial development on financial constraints.

James R. Morris (1983) in his article entitled "The Role of Cash Balances in Firm Valuation" has focused on how cash can be included in a meaningful way in the valuation framework of the CAPM. The CAPM is modified with assumptions that preserve its useful features, but allow cash balances to be considered. In this framework, if the firm carries too little cash, the costs of cash management will have higher expected value and, because they are uncertain, they may add to the firm's systematic risk. Increasing the cash balance may help decrease this uncertainty, but at the expense of unproductive investment. In the CAPM context, the risk associated with the cash decision is the covariance between the costs of cash management and the return on the market portfolio. Both the initial cash balance and the parameters of the cash management policy could be varied to reduce the systematic risk. The first-order conditions for an optimal cash balance were developed, and it was shown that the initial cash balance should be expanded to the point where the marginal value of the costs of cash management are equal to the value of the funds invested in productive capital assets.

Jeffrey J. Quirin, David O'Bryan, William E. Wilcox (1999) in their reviewed work entitled "The Corroborative Relation between Earnings and Cash Flows" have focused on the results from replicating Philipich et al. using a larger, more recent sample, actual cash flow from operations, and a working capital expectations model to measure unexpected cash flow indicated some similarities to, and some differences from, the original study. Tables reports

results that are qualitatively the same as those of Philipich et al. and strongly support the corroborative hypothesis. When the mixed sign cases are allowed to differ, however, another Table reports that the corroborative relationship between earnings and operating cash flows is asymmetric. While Philippic et al. report significant effects for the same sign or corroborating cases and no effects for the mixed sign cases, this study reports a corroborative effect only for those firms with negative unexpected earnings. Furthermore, the coefficients for the mixed cases differ and appear to be driven by the sign associated with unexpected earnings. Recent literature has used a random walk model to estimate unexpected operating cash flow rather than the working capital model used by Philipich et al. This paper reexamines the corroborative hypothesis using a random walk model. This extension to Philipich et al. suggests that the corroborative hypothesis manifests itself only in the intercept term for positive earnings cases. The empirical evidence does not support some of the Equation also is estimated with a sample that omits the docile of UE cases immediately above and immediately below zero and the docile of UCF cases immediately above and immediately below zero, to determine whether the results would be impacted by the magnitude of near zero unexpected earnings or cash flows. According to the researcher Future research could focus on identifying contextual or economic factors that might strengthen this relationship and lead to stronger support for an interactive effect between earnings and cash flows.

Kehinde James (2011) on his study entitled "Effective Working Capital Management in Small and Medium Scale Enterprises" found that small firms have very weak financial position, they rely on credit facility to finance their operation, and this credit facility most times comes from account payable. Most small firms become insolvent and fail because they could

not access financial assistance from the financial institutions due to lack of the necessary requirement needed by the financial institutions. It was also revealed from this study that there is poor liquidity in most small business in Nigeria the small business have current assets in excess of current liability leading to shortage of fund . There is also poor record keeping system in most small firm which reduces the ability of the firm to monitor the proper flow of their working capital. The poor working capital flows of the small firms have precluded them from the ability to compete effectively. The study revealed that most small business fail at most within two years, the strongest will fail within six years, while only few surviving ones remain. The study emphasized on the concept of small and medium scale business

Marian Rizov (2004) in his article entitled "Credit Constraints and Profitability: Evidence from a Transition Economy" confirmed the profit-liquidity hypothesis. The estimated coefficient on total bank loans obtained for credit-constrained firms is much larger in magnitude, and with a higher significance, compared to the corresponding coefficient for the unconstrained sample. Thus, better access of firms to external financing would result in higher profitability. Furthermore, the weakly significant coefficient on total bank loans in the unconstrained sample rein forces this conclusion and suggests that the need of investment and of replacing obsolete capital assets is important for currently unconstrained firms as well. It seems that there is disparity between the perceived quality of firm tangible fixed assets and their real productivity. The evidence comes from the fact that fixed assets serving as collateral decrease the likelihood of a firm being credit constrained. However, at the same time, for unconstrained firms, the amount of fixed assets is negatively correlated with profitability. Thus, larger with respect to capital assets, firms, expected by the lenders to be more creditworthy,

turn out to have lower capital profitability. This may be due to the fact that often assets of large firms are technologically obsolete or badly managed. The implication is that lending to such firms may not be optimal if it does not lead to new investment and deep restructuring. Another important result is that privatization always positively affects profitability, while factors such as corporate governance and technology are likely to play a more significant role when firms are not constrained in their access to financing. These results can potentially have important policy implications for the success of structural reforms in transition economies. Thus, corporate restructuring would result in higher firm profitability and growth of the economy, which is the current aim of reformist governments, if a sound financial system is in place. The study also emphasized on, conceptual framework for analyzing credit rationing and the link between credit access and profitability developed is one of the main factors. The empirical analysis using data from manufacturing firms in Bulgaria, an economy with dramatically changing credit constraints during transition, provides direct estimates of credit rationing and its impact on profitability and reform policy outcomes. The results from switching regressions show that the presence of credit market imperfections does impinge on profitability of firms and hinders industry restructuring. Policies fostering sound financial intermediation are suggested and discussed.

M. A., Zariyawati , M. N., Annuarand A.S., Abdul Rahim (2009) in their study entitled "Effect of working capital management on profitability of firms in Malaysia" have focused and analyse the effects of working capital management on the firm's profitability, (operating income + depreciation)/total asset, as measure of profitability was used as the dependent variable, they use some other common variable like cash conversion cycle , days receivables ,

days payables etc. Control variables were introduced as the growth in firm sales and its leverage. Growth in sales was calculated. The leverage measures by debt ratio as calculated by total debt over total asset. In addition current ratio which is calculated as difference of current asset over current liability was included as one of its independent variable. The reason is conventionally the current ratio always been used as measure of corporate liquidity. Main findings of the Study are cash conversion cycle is negatively associated to the profitability of the firm.

Mehmet SEN, Can Deinz Koksal and Eda ORUC (2009) in their study entitled "Relationship between the efficiency of working capital management and company size" have focused on some theoretical aspect of financial issue related on working capital because there main aim was to find out the relationship between the efficiency levels of working capital management and sizes of companies which were being traded in Istambul Stock Exchange. They observed that business financial needs of companies decreases with the efficiency gained from the managing the elements of working capital. Bank managements prefer to give credit for receivables rather than giving credit for inventories. Because, receivables are more liquid than inventories and it is quite easy to convert them into cash. Companies in Istambul Stock Exchange should give more attention to inventory management in the issue of working capital management. Regulations on this matter which increase management efficiency will be beneficial for the companies and for the rest of economic structure

Mrs.Akinlo, Olayinka Olufisayo (2011) in their article entitled "The effect of working capital on profitability of firms in Nigeria: evidence from general method of moments (GMM)"

have found that sales growth is positively related to firms' profitability. Firms may gain some advantages like monopoly or bargaining power due to growth as a reflection of economies of scale. Accounts receivable period and firms' profitability are positively related. Finally cash conversion cycle is positively related to profitability. The study adopts the dynamic panel general method of moments in analyzing the data. Results of the estimation show that sales growth, cash conversion cycle, account receivables and inventory period affect firm positively, while account payable affect firm profitability negatively.

Ms.N.Velmathi, Dr.R.Ganesan(2011) in their article entitled "Value Based Strategy in Working Capital Management - with special reference to Indian Commercial Vehicle Industry" have found that capital efficiency can be maximized through effective management, especially working capital management. Working capital management is just like the heart of business. If it becomes weak, the business can hardly prosper and survive. In order to improve the working capital management practices, it is essential for the finance managers to adopt a proper approach of working capital decisions making to drive their respective firms towards success in order to generate the value for the shareholders. This paper also focuses on impact of working capital management on shareholders' value of the selected companies in Indian commercial vehicle Industry.

Nor Edi Azhar Binti Mohamad and Noriza BintiMohdS aad(2010) in their article entitled "Working Capital Management: The Effect of Market Valuation and Profitability in Malaysia" have studied on the working capital management and its effect on the performance of Malaysian listed companies from the perspective of market valuation and profitability. The

secondary data for analysis is retrieved from Bloomberg's Database of 172 listed companies randomly selected from Bursa Malaysia main board for five year period from 2003 to 2007. The study aims to explore the effects of working capital component i.e. cash conversion cycles (CCC), current ratio (CR), current asset to total asset ratio (CATAR), current liabilities to total asset ratio (CLTAR), and debt to asset ratio (DTAR) to the firm's performance by looking at firm's value i.e. Tobin Q (TQ) and profitability i.e. return on asset (ROA) and return on invested capital (ROIC). Applying correlations and multiple regression analysis, the result shows that there are significant negative associations between working capital variables with firm's performance. Thus it highlights the importance of managing working capital requirements to ensure an improvement in firm's market value and profitability and this aspect must form part of the company's strategic and operational thinking in order to operate effectively and efficiently.

Osama Suhail Hayajneh and Fatima Lahcen Ait Yassine(2011) in their article entitled "The Impact of Working Capital Efficiency on Profitability – an Empirical Analysis on Jordanian Manufacturing Firms" have focused on how the firms should manage their working capital in order to achieve the optimal profitability. Thus the firms can manage their working capital through reducing the time between sales of the goods and collecting the cash from debtors, it can do that by accelerating its collections. The time has to reduce the time between conversions the raw materials into finished goods and sales of these goods. On the other hand the firms should longer the length time between purchases of goods and payment to the creditors. All these will lead to shorten the cash conversion cycle and then lead to achieve the optimal profitability. This study investigated the relationship between working capital

efficiency and profitability on the 53 Jordanian manufacturing firms listed in Amman Exchange Market for the period (2000-2006). It is analyzed the data using the descriptive statistics, Pearson correlation coefficients, ordinary least squares (OLS) and two stage least squares(2SLS) regressions model. The results of study 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 which expresses the efficiency of working capital. This study revealed a positive significance between the size of the firm, sales growth and current ratio with profitability. Finally, financial leverage correlated negatively with profitability.

Pedro Juan García-Terueland   Pedro Martínez-Solano(2007) in their study entitled "Effects of working capital management on SME profitability" have focused on a significant negative relation between an SME's profitability and the number of days accounts receivable and days of inventory and SMEs have to be concerned with working capital management because they can also create value by reducing their cash conversion cycle to a minimum, as far as that is reasonable.

Shane A.Johnson (1997) "An Empirical Analysis of the Determinants of Corporate Debt Ownership Structure" has focused on the relation between corporate debt ownership structure and several firm characteristics suggested by recent theory. The results demonstrate the importance of monitoring and information costs, the likelihood and costs of inefficient liquidation, and borrower's sentiments in affecting firms' debt source preferences. Several theoretical predictions receive support, while others do not. The results also suggest important

differences between bank and private non-bank debt, which contrasts with most theoretical models. Additionally, study found evidence of systematic use of bank debt by firms with access to public debt, suggesting the benefits attributed to bank debt in theoretical models remain important after firms gain access to public debt markets. Although different lenders appear to have different maturity preferences, the results also suggest debt maturity and debt ownership decisions may be separable.

Too Yang Liu(2006) in their article entitled "The Sources of Debt Matter" have focused on the examination of the effects of different types of private debt on firm cash balances, equity risk, and investment. Firms with more bank loans have more cash and investment, but lower equity risk. Firms with more nonbank private debt have more cash, lower equity risk, and less investment. Firms with more unused credit lines have less cash and lower equity risk, but greater investment. Results suggest that financial intermediaries' monitoring intensity increases with loan size. Depending on type, private debt mitigates information asymmetry or asset substitution, or both. Deposit relations associated with bank borrowing also contribute to banks information advantage.

Shahid Ali and Muhammad Ramzan Akhtar Khan (2011) in their article entitled "Searching for internal and external factors that determine working capital management for manufacturing firms in Pakistan" have focused on to identify any significant internal or levels managed by listed manufacturing firms in Pakistan. The factors are categorized as micro or macro, where micro level factors are firm-specific, whereas macro factors are idealized to be those factors that usually describe the macroeconomic conditions. There are some findings that

suggest that poor economic conditions exert pressure on working capital policies of firms. Their study results indicate that firm growth affects working capital ratio and leverage affects liquidity levels, but these findings are not conclusive. Overall, the study finds limited evidence on uniform internal/external micro/macro determinants for all sectors.

Sari Viskari, EeroLukkari and TimoKärri(2011) in their article entitled "State of Working Capital Management Research" have focused on that the companies can improve their profitability with aggressive working capital management. They have also moved from a strict financial view on working capital management to an operational view, which emphasizes the efficiency of operations. The need of new practical tools and measures to support working capital management is highlighted in practitioner papers, but academic research has not considered it.

Talat Afza and Mian Sajid Nazir (2011) in their article entitled "Working Capital Management Efficiency of Cement Sector of Pakistan" made an attempt to investigate the efficiency of the cement companies in Pakistan by efficiently managing the working capital. Empirical results revealed that the cement firms of Pakistan did perform remarkably well during this period. Industry average for efficiency index was greater than one in 18 out of 20 years of the study period. However, the existence of a very high degree of inconsistency in this matter clearly points out the need for adopting sound working capital management policies by these firms. This also provides an important implication for stakeholders of cement industry to look into this issue very carefully and rigorously. This is particularly important in the context of the present competitive situation of the market. Present study also suggests that a further

investigation may be helpful for identifying the forces that govern this chronic nature of inefficiency present in the Pakistani cement companies in terms of working capital management.

T.Chandrabai, Dr.K.Venkata and Janardhan Rao (2011) in their article entitled "Working Capital Management in Cement Company" have focused on that Working capital management of ACC Limited is satisfactory. The Company has no problem in the management of inventory, debtors, cash balances and current liabilities. The liquidity position of the company is also very much satisfactory due to good turnover of current assets, inventory debtors and cash balances. There is no difficulty in repayment of current liabilities out of the operating profit. Planning and Control of cash balances follow cash-flow statement. It shows the sources and uses of cash over the period. Financial statement shows the current assets and current liabilities in classified form. There is good collection of receivables due to good credit and collection policy. Due to good utilization of working capital the business growth of the company is also highly satisfactory. Market prices of shares are increasing year after year due to good dividend and good image in the market.

William L, Sartoris and Ned C. Hill (1983) in their article entitled "A Generalized Cash Flow Approach to Short-Term Financial Decisions" have focused on the Need for a Generalized Approach PAST NEGLECT of short-term financial management decisions. In the recent years, short-term finance-sometimes referred to from the accounting perspective as working capital management-has enjoyed much more attention than it has been accorded in the past. Part of the reason for past neglect could be attributed to the academic focus on market

efficiency. Given perfectly efficient capital and product markets, there is very little room for short-term financial decisions to make any difference. There is a substantial literature on credit policy and associated accounts receivable management as well as a large collection of articles on inventory management, but few attempts have been made to integrate credit policy and inventory management decisions. There are at least two reasons for this compartmentalization. First, each element of short-term finance is managed by an organizationally separate entity. Cash managers manage the cash, credit managers manage receivables, and payables managers manage payables. In most firms, these managers may be separated by several organizational layers. Hence, they have learned to think of short-term finance problems as separable decisions. Second, accounting conventions compartmentalize short-term assets and liabilities.

2.2   RESEARCH GAP

Based on thorough review of literatures, the following research gaps are identified:

1.   Most of the study consider only cash conversion cycle for working capital study,

2.   Data volume is very low in number , 5-10 years of single company,

3.   Effect of changes in interest rate have not been considered,

4.   Impact of factors like cost of capital, cost of equity, P/E on working capital has not been considered,

5.   Comparative analysis of various sectors about their working capital management has not been covered,

2.3 SUMMARY OF THE CHAPTER

From an in depth analysis of earlier research works it is found that invention of new techniques and methods are always useful for all kind of business organization from multinational companies to small scale enterprise. Researchers are always trying to contribute new idea and tools for the betterment of the organization. We go through the research article as many as possible to get the clear idea about the contribution of the previous researchers. We observed in many study that operating cycle is one of the most important factor for working capital and profitability. Size of the firm is also found to be an important factor which has a significant roll on the profitability of the firm. Earlier researchers focused on different components of working capital in different way. Some article focused on cash conversion cycle and found that proper management of receivable and payable activity has positive effect on working capital. Some article found that working capital and profitability has no such relation, but at the same time it is found that many individual components of working capital and profit are closely depends on each other. But most of study has suffers from the loop holes those are;

1. Most of the study consider only cash conversion cycle for working capital study.

2. Data volume is very low in number , 5-10 years of single company

3. Effect of change of interest rate have not been considered

4.   Impact of factors like cost of capital, cost of equity, P/E on working capital has not been considered.

5. Comparative analysis of various sectors on working capital management has not been covered.

CHAPTER III

DATA BASE & METHODOLOGY

3.1 Need for the study;

Working capital management should get special importance where it dominates the fixed capital. Cement, steel, fertilizer, automobile and heavy engineering are such kind of industry. From the point of view of the socio economic development of the country, these five industry are significant enough in terms of investment, employment etc. these industries always require huge amount of capital not only for infrastructure of the organization but also for raw material and stock. Conversion of these stocks into cash requires long time and large amount of money.

The function of sales differs for different industries. Sale of products of some industries may be for mass consumption where as sales of other industries depends upon the government policies. Products of Heavy engineering industries are not for daily consumption. The products are required mainly for infrastructure related development of country. So the sale of these industries highly depends upon policies of both Central and State government. The products of automobile sector like light private motor vehicles as well as different kind of heavy commercial vehicle are meant for mass consumption. The sale of these products also depends on government policies like excise duties etc. Products of cement and steel industries are for personal consumption for building of home etc. but the major requirement of these output are used for purposes like construction of bridge, dam, rail, road etc. Sale of fertilizer also depends on the factors like government policies like subsidy etc.

During the course of our study we observed that the management of working capital may become less efficient due to holding of huge investment, loans, turnover and slower recovery of debts, over dependency on bank finance and holding large idle cash balance etc. these problems have always highlighted the need for the comprehensive study in the field of working capital management.

3.2 Sample design;

There are several firms under each industry operating in India. Some of them are in private sector some of them are in public sector. We have considered those companies that are registered under The National Stock Exchange (NSE). All the selected companies operate across the country. We have collected data for last 10 years from the financial year 2004-2005 to 2013-2014, from the Annual Report of every organization. In our study we have selected five major sector of business area these are Automobile, Cement, Fertilizer, Heavy Engineering and Steel. Total 250 number of annual reports used for this study. We have selected five companies of each sector through a random selection programme written in "Java" language.

3.3   SELECTED COMPANIES FOR THE STUDY;

INDUSTRY	COMPANY NAME				
Automobile	Ashok Leyland	Bajaj Auto Limited	Eicher Motors Limited	Hindustan Motors Limited	Tata Motors Limited
Cement	ACC Limited	Dalmia Cement	Everest Cement	Grasim Industries. Limited	J. K. Cement
Fertilizer	DCM Shriram Limited	Hindustan Insecticides Limited	National Fertilizer Limited	Paradeep Phosphate	Rashtriya Chem. and Fertilizer Limited
Heavy Engineering	Bharat Earth Movers Limited (BEML)	Bharat Heavy Electricals Limited (BHEL)	Heavy Engineering Corporation Limited	ISGEC Heavy Engineering Limited	Tractor India Limited (TIL)
Steel	Adhunik Metaliks Limited	Jindal Steel and Power Limited	Rashtriya Ispat Nigam Limited	Steel Authority of India Limited	Tata Steel

3.4. PROFILE OF THE SELECTED COMPANIES

I.   Automobile Industries;

1. **Ashok Leyland Ltd** is an India-based company. The company is engaged in the manufacturing of commercial vehicles and related components. The company's products include buses, trucks, engines and special vehicles. From 18 seated to 82 seated double-decker buses, from 7.5 ton to 49 ton in haulage vehicles, from numerous

special application vehicles to diesel engines for industrial, marine and generator set applications. The company is the flagship of the Hinduja Group, one of the largest commercial vehicle manufacturers in India. The company is headquartered in Chennai, India. Ashok Leyland Ltd was incorporated in the year 1948 with the name Ashok Motors. The company was set up in collaboration with Austin Motor Company, England for the assembly of Austin cars. In the year 1955, the company name was changed to Ashok Leyland Ltd with equity participation from Leyland Motors Ltd. They launched India's first 13-ton truck, 'Tusker' with a 125 hp engine. Also, they launched country's first multi-axle truck, 'Taurus'. In the year 1982, they introduced India's first vestibule or the articulated bus. In March 2010, the company inaugurated a plant at Pantnagar in Uttarakhand. This is the company's modern, technologically world-class and largest plant with a capacity to touch 75,000 vehicles. The company bought 26% stake in Optare plc, a well-known bus maker in the UK.

2. **Bajaj Auto Limited** is an India-based automotive company. The Company is a manufacturer of scooters, motorcycles and three-wheeler vehicles and spare parts. The Company operates in two segments: Automotive and Investments. The Company's brands include Pulsar, Avenger, Discover, Platina and Ninja. Its commercial vehicles range include goods carriers, such as GC Max Diesel, GC Max CNG, RE600, and passenger carriers, such as RE 2S, RE 2S CNG, RE 2S LPG, RE 4S, RE 4S CNG, RE 4SLPG, RE Diesel, RE GDI and Mega Max. Bajaj Auto's has in all three plants, two at Waluj and Chakan in Maharashtra in western India and one plant at Pant Nagar in Uttranchal. The Company's subsidiaries include Bajaj Auto International Holdings BV and PT. Bajaj Auto Indonesia.

3. **Eicher Motors Limited (EML)** is an India-based company engaged in manufacturing automobile products and related components. The Company also owns the Royal Enfield motorcycle business. Its 50-50 joint venture with the Volvo Group, VE Commercial Vehicles Limited, designs, manufactures and markets trucks and buses. EML's 50:50 strategic joint venture with the United States-based Polaris Industries Inc., Eicher Polaris Private Ltd., is engaged in designing and developing arrange of personal vehicles.

4. **Hindustan Motors** Limited was established during the pre-Independence era at Port Okha in Gujarat. Operations were moved in 1948 to Uttarpara in district Hooghly, West Bengal, where the company began the production of the iconic Ambassador. Equipped with integrated facilities such as press shop, forge shop, foundry, machine shop, aggregate assembly units for engines, axles etc and a strong R&D wing, the company currently manufactures the Ambassador (1500 and 2000 cc diesel, 1800 cc petrol, CNG and LPG variants) in the passenger car segment and light commercial vehicle 1-tonne payload mini-truck Winner (2000 cc diesel and CNG) at its Uttarpara and Pithampur plants.The first and only integrated automobile plant in India, the Uttarpara factory, popularly known as Hind Motor, also manufactures automotive and forged components. The company also has operations in Pithampur near Indore in Madhya Pradesh where it produces 1800 cc CNG and other variants of Winner. Hindustan Motors is committed to core values of quality, safety, environmental care and holistic customer orientation. The plants Uttarpara (West Bengal) The automobile division at Uttarpara is engaged in the manufacture of the iconic Ambassador and light commercial vehicle

Winner. Pithampur (Madhya Pradesh).The company produces 1800 cc CNG and other variants.

5. **Tata MotorsLimited** is India's largest automobile company, with consolidated revenues of INR 2,32,834 crores (USD 38.9 billion) in 2013-14. It is the leader in commercial vehicles in each segment, and among the top in passenger vehicles with winning products in the compact, midsize car and utility vehicle segments. The Tata Motors Group's over 60,000 employees are guided by the mission "to be passionate in anticipating and providing the best vehicles and experiences that excite our customers globally" Established in 1945. Tata Motors, also listed in the New York Stock Exchange (September 2004), has emerged as an international automobile company. Through subsidiaries and associate companies, Tata Motors has operations in the UK, South Korea, Thailand, South Africa and Indonesia. Among them is Jaguar Land Rover, acquired in 2008. In 2004, it acquired the Daewoo Commercial Vehicles Company, South Korea's second largest truck maker. Tata Motors also formed a 51:49 joint venture with the Brazil-based, Marcopolo, a global leader in body-building for buses and coaches to manufacture fully-built buses and coaches for India. .Tata Motors' joint venture with Tata Africa Holding (Pty) Ltd. set up in 2011, has an assembly plant in Rosslyn, north of Pretoria. The plant can assemble; semi knocked down (SKD) kits, light, medium and heavy commercial vehicles ranging from 4 tones to 50 tones.The company's commercial and passenger vehicles are already being marketed in several countries in Europe, Africa, the Middle East, South East Asia, South Asia, South America, CIS and Russia. It has franchisee/joint venture assembly operations in Bangladesh, Ukraine, and Senegal.

II.   Cement Industries;

1. **ACC Limited** is India's foremost manufacturer of cement and concrete. ACC's operations are spread throughout the country with 17 modern cement factories, more than 50 Ready mix concrete plants, 21 sales offices, and several zonal offices. It has a workforce of about 9,000 persons and a countrywide distribution network of over 9,000 dealers. Since inception in 1936, the company has been a trendsetter and important benchmark for the cement industry in many areas of cement and concrete technology. As the largest cement producer in India, it is one of the biggest customers of the domestic coal industry, of Indian Railways, and a considerable user of the country's road transport network services for inward and outward movement of materials and products. Among the first companies in India to include commitment to environmental protection as one of its corporate objectives, the company installed sophisticated pollution control equipment as far back as 1966, long before pollution control laws came into existence. Today each of its cement plants has state-of-the art pollution control equipment and devices. ACC run two institutes that offer professional technical courses for engineering graduates and diploma holders which are relevant to manufacturing sectors such as cement. The main beneficiaries are youth from remote and backward areas of the country. ACC has made significant contributions to the nation building process by way of quality products, services and sharing expertise. Its commitment to sustainable development, its high ethical standards in business dealings and its on-going efforts in community welfare programmes have won it acclaim as a responsible corporate citizen. ACC's brand name is synonymous with cement and

enjoys a high level of equity in the Indian market. It was the first cement company to figure in the list of Consumer Super Brands of India.

2. **Everest Cement**is one of India's fastest growing building solutions company. Founded in 1934, Everest is one of the most respected and renowned business entities in India, and has dominated the market ever since. It has continuously introduced innovative and modern building products with a promise of strength, speed and safety. Everest offers a complete range of world-class building solutions: roofing, ceiling, wall, flooring, cladding, door and pre-engineered steel buildings for the industrial, commercial and residential sectors. Historically, Everest has provided rural shelters, by making corrugated roofing sheets available to farmers at a competitive price. The company is poised to capitalize on the opportunities in rural India, where various housing and infrastructure initiatives are envisaged by the Government. The Everest brand of products are produced at state-of-the-art ISO: 9000 certified manufacturing facilities located at Kymore, Nashik, Coimbatore, Kolkata and Roorkee. After successfully catering to the Indian market, Everest has widened its horizons in the international arena. With consistent exports to Europe, Africa, Australia and Asia, Everest is all set to scale new heights and establish a strong foundation in the global market. Banking on 79 years of experience and highly sophisticated technology, Everest assures customers that all its products live up to the promise of strength, speed and safety.

3. **Grasim Industries Limited**, a flagship company of the Aditya Birla Group, ranks amongst India's largest private sector companies, with a consolidated net revenue of Rs.293 billion and consolidated net profit of Rs.21 billion (FY 2014).Grasim started as a textile manufacturer in 1948. Today its core businesses are Viscose Staple Fiber(VSF)

and Cement, contributing over 90 per cent of its revenues and operating profits. It is also present in Chemicals which is essentially a backward integration of VSF. The Aditya Birla Group is the world's largest producer of VSF, commanding a 19 per cent global market share. Currently, Grasim's subsidiary Ultra Tech Cement Limited ("UltraTech") has a capacity of 61.75 million tpa. Earlier, in July 2004, Grasim acquired a majority stake and management control in Ultra Tech. One of the largest-of-its-kind in the cement sector, this acquisition catapulted Grasim to the top of the league in India. Subsequently, Grasim demerged its cement business into Ultra Tech in July 2010. The merger has created the largest cement company in India, providing a platform that will help in pursuing aggressive growth going forward. Grasim is implementing ambitious growth plans through capacity expansions in VSF and Cement, which will further consolidate its leadership in both the business.

4. **J.K. Cement Ltd** is an affiliate of the multi-disciplinary industrial conglomerate J.K. Organization which was founded by Lala Kamlapat Singhania. For over four decades, J.K. Cement has partnered India's multi-sectoral infrastructure needs on the strength of its product excellence, customer orientation and technology leadership The Company has over four decades of experience in cement manufacturing commenced with commercial production at first grey cement plant at Nimbahera in the state of Rajasthan in May 1975. Subsequently the Company also set up 2 more units in Rajasthan at Mangrol and Gotan. In the year 2009 the Company extended its footprint by setting up a green-field unit in Muddapur, Karnataka giving it access to the markets of south-west India. The Company is the second largest manufacturer of white cement in India, with an annual capacity of 600,000 tones in India. They are also the second largest producer

of Wall putty in the country .J.K. Cement was the first Company to install a captive power plant in the year 1987 at Bamania, Rajasthan. J.K Cement is also the first cement Company to install a waste heat recovery power plant to take care of the need of green power. Today at its different locations, the Company has captive power generation capacity of over 140.MWs which includes 23 MW of waste heat recovery power plants.

5. **Dalmia Cement** has been a leader in cement manufacturing since 1939. Dalmia cement plants in India have grown manifolds in terms of capacity; Dalmia Cement also acquiring some new plants to increase the volume and expand further , Dalmia Cement have cement manufacturing plants in southern states of Tamil Nadu (Dalmiapuram & Ariyalur) and Andhra Pradesh (Kadapa), with a capacity of 9 million tonnes per annum. A leader in cement manufacturing since 1939, DCBL is a multi-spectrum Cement player with double digit market share and a pioneer in super specialty cements used for Oil wells, Railway sleepers and Air strips. We also hold a stake of 47.3 % in OCL India Ltd., a major cement Player in the Eastern Region. Recently we have acquired the brands Adhunik Cement &Calcom Cement in North East. The Group with current capacity of 17 million tones (along with its subsidiaries and associate) is ranked fourth largest in the Indian cement industry. The group now controls an expandable capacity of 22 million tones post completion of its ingoing projects. Dalmia Cement rank right up there with the best of cement companies in the industry. They have set up over 53 windmills in Muppandal (Tamil Nadu) to generate inexpensive and eco-friendly captive power for our plant.

III. Fertilizer Industries;

1. **Hindustan Insecticides Limited** a Govt. of India Enterprise, under the Dep't. Of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India, was incorporated in March, 1954 for supplying DDT for National Malaria Eradication Programme launched by the Govt. of India. Subsequently, the company diversified into agro pesticides to meet the requirements of agriculture sector and has grown manifold with a turnover of Rs. 2006.00 million rupees in 2006-07. The product range includes Insecticides, Herbicides, they decides, Fungicides etc. It has a pest control division catering to industry houses and offices.

2. **National Fertilizer Limited**, a Schedule 'A' & a Mini Ratna (Category-1) Company, having its registered office at New Delhi was incorporated on 23rd August 1974. Its Corporate Office is at NOIDA (U.P). It has an authorized capital of Rs.1000 crore and a paid up capital of Rs.490.58 crore out of which Government of India's share is 90% and 10% is held by financial institutions & others.NFL has five gas based Urea plants vizNangal& Bathinda in Punjab, Panipat in Haryana and two plants at Vijaipur in District Guna, Madhya Pradesh. The above plants at Panipat, Bathinda & Nangal which were earlier based on fuel oil (LSHS) have recently been converted on Natural Gas, an eco-friendly fuel. Vijaipur plants of the company were also revamped for energy savings & capacity enhancement during 2012-13, thus increasing its total annual capacity from 20.66 LMT from 17.29 LMT, an increase of 20%. The company has a total annual installed capacity of 35.68 LMT and is the 2nd largest producer of Urea in the country with a share of about 16% of total Urea production in the country. The

company is also producing allied Industrial products like Nitric Acid, Ammonium Nitrate & Ammonium Nitrite, Sodium Nitrite, Sodium Nitrate etc. The Company is also in the process of setting up a Bentonite Sulphur plant at its Panipat Unit to cater the requirement sulphur deficient soil. NFL has a wide marketing network across major part of India comprising of a Central Marketing Office at NOIDA, three Zonal Offices at Bhopal, Lucknow & Chandigarh, 12 State Offices and 38 Area Offices.

3. **Paradeep Phosphate Limited** is the production and marketing of complex phosphate fertilizers. We are committed to improving agricultural productivity and to betterment of the farming community. Date of incorporation of the company was 24th December 1981, Commissioning of Phase-I (DAP Plant) February 1986, Commissioning of Phase-II (SAP, PAP & CPP)- 1992, Date of Disinvestment from GOI 28th February 2002, Turnover (2011-12) Rs.4,700 crores, Designed Annual Capacity of DAP 12,00,000 MT, Designed Annual Capacity of PAP 3,00,000 MT, Designed Annual Capacity of SAP - 7,26,000 MT, Captive Power Plant- Two Units of 16 MW each, Conveyor Belt- 3.4 km (from Port to Plant Site, Products Manufactured - DAP, NPK grade fertilizers, Marketing Territory- Products are distributed in a pan-India market covering 16 states, Systems- ISO 14001: 2004 in May 2009, ISO 9001: 2008 in September 2009 and BS OHSAS 18001:2007 in December2010.

4. **Rashtriya Chemicals and Fertilizers Limited (RCF)** a Government of India Undertaking is a leading fertilizer and chemical manufacturing company with about 80% of its equity held by the Government of India. It has two operating units, one at Trombay in Mumbai and the other at Thal, Raigad district. Government of India has accorded "Mini-Ratna" status to RCF. This is one of the earliest units set up in the

country with a vision of growth in fertilizer production for food security. It manufactures Urea, Complex Fertilizers, Bio-fertilizers, Micro-nutrients, 100 per cent water soluble fertilizers, soil conditioners and a wide range of Industrial Chemicals. It produces 23 lac MT Urea, 6.5 lac MT Complex fertilizers and 1.6 lac MT of Industrial Chemicals every year. The company is a household name in rural India with brands "Ujjwala" (urea) and "Suphala" (complex fertilizers) which carry high brand equity. To promote balanced use of fertilizers for improving the farm productivity and also to help in maintaining soil health, RCF has established 12 (twelve) static Soil Testing Laboratories (STL) in the country at strategic locations, namely Mumbai, Kolhapur, Nagpur, Ahmednagar, Hassan, Vijaywada, Chandikhole, Kolar, Suryapet, Raipur, Nanded and Satara, covering the soil testing activity in the districts around these STLs. In addition to the static STLs, the Company also operates 6 (six) Mobile Soil Testing Labs. RCF has been consistently achieving best rating of "Excellent" for past several years. Having accredited with "Mini-Ratna" status by the Government of India, it is now poised to get "Navratna" status. RCF has maintained a good financial position.

5. **DCM Shriram Limited** is a leading business conglomerate with a group turnover of Rs. 6400 crores. The business portfolio of DCM Shriram comprises primarily of two types of businesses.Agri-Rural Business,Urea & SSP fertilizers, Sugar, Farm inputs marketing such as DAP, Crop care Chemicals, Hybrid Seeds. And Chlor-Vinyl Business Caustic Soda, Chlorine, Calcium Carbide, PVC resins, PVC Compounds, Power and Cement. DCM Shriram has manufacturing facilities of Fertilizer, Chloro Vinyl & Cement in Kota (Rajasthan). The company operates coal-based captive power, facilities - in Kota rated at 133 MW and 55 MW in Bharuch (Gujrat). The Urea plant in

Kota has a Production capacity of 379,000 TPA &Chlor- Alkali capacity of 765 TPD in both Kota & Bharuch. DCM Shriram Sugar factories are located in Ajbapur, Rupapur, Hariawan and Loni in Uttar Pradesh, with a combined installed capacity of 33,000 TCD (tonnes crushed daily) and a power- generating capacity of 94.5 MW. The Hybrid seed operations- 'Bioseed' started in Hyderabad (India) and now have a global footprint with presence in Vietnam, Philippines and Indonesia. All its main line locations/products have ISO 9001 & 14001 (Quality & Environment Systems) and OHSAS 18001 (Occupational Health and Safety Standards) in its facilities.

IV. Heavy Engineering Industries ;

1. **Bharat Earth Movers Limited** was established in May 1964 as a Public Sector Undertaking for manufacture of Rail Coaches & Spare Parts and Mining Equipment at its Bangalore Complex. The Company has partially disinvested and presently Government of India owns 54 percent of total equity and rest 46 percent is held by Public, Financial Institutions, Foreign Institutional Investors, Banks and Employees .BEML Limited, a 'Miniratna-Category-1', plays a pivotal role and serves India's core sectors like Defense, Rail, Power, Mining and Infrastructure. The Company started with a modest turnover of Rs.5 Cr during 1965 and today, thanks to its diverse business portfolio, the company has been able to achieve a turnover of more than Rs.3500 Cr. Its three major Business verticals viz., Mining & Construction, Defense and Rail & Metro are serviced by its nine manufacturing units located at Bangalore, Kolar Gold Fields (KGF), Mysore, Palakkad and Subsidiary - Vignyan Industries Ltd, in Chikmagalur District. BEML's products are sold and serviced through its large Marketing Network

spread all over the Country. BEML's products are exported to more than 56 countries. The company operates under three major Business verticals - viz. Mining & Construction, Defense and Rail & Metro. BEML manufactures and supplies Defence Ground Support Equipments. Embarking upon the 50th Golden Year of its journey of engineering excellence

2. **Bharat Heavy Engineering Limited,** with 20,000 MW per annum capacity for power plant equipment manufacturing, BHEL's mammoth size of operations is evident from its widespread network of 17 Manufacturing Units, two Repair Units, four Regional Offices, eight Service Centers, eight Overseas Offices, six Joint Ventures, fifteen Regional Marketing Centers and current project execution at more than 150 project sites across India and abroad. The total installed capacity base of BHEL supplied equipment -138 GW in India speaks volumes about the contribution made by BHEL to Indian power sector. BHEL's 57% share in India's total installed capacity and 65% share in the country's total generation from thermal utility sets (coal based) as of March 31, 2014 stand testimony to this. BHEL also has a widespread overseas footprint in 76 countries with cumulative overseas installed capacity of BHEL manufactured power plants nearing 10,000 MW including Malaysia, Oman, Libya, Iraq, the UAE, Bhutan, Egypt and New Zealand. The high level of quality & reliability of BHEL products and systems is an outcome of strict adherence to international standards through acquiring and adapting some of the best technologies from leading OEM companies in the world together with technologies developed in our own R&D centers.

3. **Tractor India Limited** over the past six decades has been partnering India Infrastructure growth and has emerged as one of the leading providers of a wide range

of equipment that represent some of the finest in global technology. Today they have a large quantum of collective intellectual capital with a motivating workplace environment that enhances competency and encourages productivity. The Material Handling Solutions division of TIL is engaged in manufacture and marketing of a comprehensive range of state-of the art material handling equipment and lifting solutions with integrated customer support. Recently the division has embarked on a robust expansion plan offering road construction solutions, port equipment. The division uses the best technology available in its domain with world class associations such as Grove Worldwide USA, Manitowoc Crane Group- USA, Paceco Corp- USA (a part of Mitsui Engineering and Shipbuilding-Japan), FAMAK-SA Poland. The recent partnerships include NACCO Materials Handling Group, Inc. [NMHG] - a part of NACCO Industries Inc-USA and Astec INC-USA. TIL plant at Kolkata is the only purpose built mobile crane manufacturing facility in India. TIL are the exclusive dealer for Caterpillar products in North and East India, Bhutan and Nepal and effective 2nd April, 2010, their business of Construction, Mining and Power systems operates under Tractors India Pvt Limited (TIPL) - a wholly owned subsidiary of TIL Limited. TIL and its subsidiaries are well connected with a vast network over 60 branches and area offices to ensuring maximum coverage.

4. **The Saraswati Sugar Syndicate Ltd. (now ISGEC Heavy Engineering Ltd.)** is established in the year 1946 as Indian Sugar & General Engineering Corporation (Isgec Heavy Engineering Limited) is established to address the need for the Indian Capital Goods Industry. Isgec shifts Registered Office from Lahore, (undivided India) to

Abdullapur (now Yamunanagar in Haryana, India). Saraswati Sugar Mills (SSM) is established at Yamunanagar. Agreement with John Thompson Ltd., UK for manufacture of Boilers. In the year 1963. The Saraswati Sugar Syndicate Ltd. name changed to Saraswati Industrial Syndicate Ltd. (SIS Ltd.) and Isgec is amalgamated with SIS Ltd. Collaboration agreement with John Thompson Water Tube Boilers Ltd. for the manufacture of high pressure boilers having output in excess of 50 MW. In the year 2014   the entered into new products such as Heat Recovery Steam Generators, Waste Heat Recovery Boilers and Pin Hole Grate Boilers. Sugar Plants & Machinery business vertical successfully commissions its largest Sugar Mill - 1150 mm x 2290 mm (45" x 90"). Sugar Plants & Machinery business vertical successfully commissions first sugar refinery. EPC Power Plant business vertical secures its first order for Waste to Energy Power Plant Project, in consortium with Hitachi Zosen Limited, Japan.

5. **Heavy Engineering Corporation Ltd.,** is one of the leading suppliers of capital equipment in India for steel, mining, railways, power, defense, space research, nuclear and strategic sectors. It also executes turn-key projects from concept-to-commissioning. Set-up in the year 1958, HEC has acquired expertise in its field through its more than half a century's experience. With the seamless integration of its facilities, HEC is one of the largest integrated engineering complexes. Sprawling in an area of around 2100,000 sq.mt, HEC has facilities starting from steel melting, casting, forging, fabrication, machining, assembly and testing. It has its own in-house research and product development wing to deliver products suiting customers' specifications.HEC is headquartered at Ranchi, the capital city of Jharkhand, in eastern part of India, and also has its manufacturing facilities located here. A well-suited location nearing to customer

sites and proximity to the ports for import items is an added advantage for its cost-effectiveness.

V. Steel Industries ;

1. **Adhunik Metaliks Limited (AML)**, the flagship of the Group, has emerged as one of the fastest growing alloy, special and construction steel manufacturing companies in the country with significant presence in the mining and power sectors through its subsidiaries. It has completed almost all major capital expenditure for both backward and forward integration and emerged as an integrated manufacturer of special steel with downstream utilization of products. It has set up an integrated steel plant of 0.45 million ton at Sundergarh, Orissa, with state-of-the-art technology. The company has also started operations and dispatches from it captive iron ore mines. Within a very short span of time, the products of the Company have been recognized by major automobile component manufacturing and automobile companies. The Company caters to diversified sectors including automobiles, telecom, power, railways, engineering, oil & gas and construction.

2. **Steel Authority of India Limited (SAIL)** is the leading steel-making company in India. It is a fully integrated iron and steel maker, producing both basic and special steels for domestic construction, engineering, power, railway, automotive and defense industries and for sale in export markets. SAIL is also among the seven Maharatnas of the country's Central Public Sector Enterprises. SAIL manufactures and sells a broad range of steel products, including hot and cold rolled sheets and coils, galvanized sheets, electrical sheets, structural's, railway products, plates, bars and rods, stainless

steel and other alloy steels. SAIL produces iron and steel at five integrated plants and three special steel plants, located principally in the eastern and central regions of India and situated close to domestic sources of raw materials, including the Company's iron ore, limestone and dolomite mines. The company has the distinction of being India's second largest producer of iron ore and of having the country's second largest mines network. This vital responsibility is carried out by SAIL's own Central Marketing Organization (CMO) that transacts business through its network of 37 Branch Sales Offices spread across the four regions, 25 Departmental Warehouses, 42 Consignment Agents and 27 Customer Contact Offices. CMO's domestic marketing effort is supplemented by its ever widening network of rural dealers who meet the demands of the smallest customers in the remotest corners of the country. With the total number of dealers over 2000, SAIL's wide marketing spread ensures availability of quality steel in virtually all the districts of the country. SAIL has a well-equipped Research and Development Centre for Iron and Steel (RDCIS) at Ranchi which helps to produce quality steel and develop new technologies for the steel industry. Besides, SAIL has its own in-house Centre for Engineering and Technology (CET), Management Training Institute (MTI) and Safety Organization at Ranchi. The Environment Management Division and Growth Division of SAIL operate from their headquarters in Kolkata.

3. **Rashtriya Ispat Nigam Limited** the corporate entity of Visakhapatnam Steel Plant is a Navaratna PSE under the Ministry of Steel. Visakhapatnam Steel Plant - popularly known as Vizag Steel is the first Shore based Integrated Steel Plant in the country and is known for its Quality Products and Customer Delight. A market leader in long Steel

products, it caters to the requirements of the Construction, Manufacturing Automobile, General Engineering and Fabrication sectors. RINL-VSP is the first integrated Steel Plant to be certified for ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 standards. It is also the first PSE to be certified for ISO 50001 - Energy Management Systems and CMMI Level 3 Certification for Software Development.

4. **Tata steel Limited**, Established in 1907 as Asia's first integrated private sector steel company, Tata Steel Group is among the top-ten global steel companies with an annual crude steel capacity of over 29 million tonnes per annum. It is now the world's second-most geographically-diversified steel producer, with operations in 26 countries and a commercial presence in over 50 countries. The Tata Steel Group, with a turnover of Rs. 1, 48,614 crores in FY 14, has over 80,000 employees across five continents and is a Fortune 500 company. Tata Steel's larger production facilities comprise those in India, the UK, the Netherlands, Thailand, Singapore, China and Australia. The Tata Steel Group's vision is to be the world's steel industry benchmark in "Value Creation" and "Corporate Citizenship" through the excellence of its people, its innovative approach and overall conduct. In 2008, Tata Steel India became the first integrated steel plant in the world, outside Japan, to be awarded the Deming Application Prize 2008 for excellence in Total Quality Management. In 2012, Tata Steel became the first integrated steel company in the world, outside Japan, to win the Deming Grand Prize 2012 instituted by the Japanese Union of Scientists and Engineers.

5. **Jindal Steel & Power** is an industrial powerhouse with a dominant presence in steel, power, mining and infrastructure sectors. Part of the US $ 18 billion OP Jindal Group this young, agile and responsive company is constantly expanding its capabilities to fuel

its fairy tale journey that has seen it grow to a US $ 3.3 billion business conglomerate. The company has committed investments exceeding US $ 30 billion in the future and has several business initiatives running simultaneously across continents. JSPL operates the largest coal-based sponge iron plant in the world and has an installed capacity of 3 MTPA (million tonnes per annum) of steel at Raigarh in Chhattisgarh. Also, it has set up a 0.6 MTPA wire rod mill and a 1 MTPA capacity bar mill at Patratu, Jharkhand, a medium and light structural mill at Raigarh, Chhattisgarh and a 2.5 MTPA steel melting shop and a plate mill to produce up to 5.00-meter-wide plates at Angul, Odisha. The organization is wedded to ideals like innovation and technological leadership and is backed by a highly driven and dedicated workforce of 15000 people. JSPL has been rated as the second highest value creator in the world by the Boston Consulting Group, the 11th fastest growing company in India by Business World and has figured in the Forbes Asia list of Fab 50 companies. In Africa, the company has large mining interests in South Africa, Mozambique, Namibia, Botswana and Mauritania and is expanding into steel, energy and cement. In Australia, the company is investing in Greenfield and Brownfield resource sector companies and projects to supplement its planned steel and power projects in India and abroad. In Indonesia, the company has invested on the development of two Greenfield exploration assets.

3.5 TOOLS FOR ANALYSIS;

We have used various statistical and accounting techniques for analysis of working capital management of the selected companies. These are:-

3.5.1   Trend analysis;

To assess the performance of different Companies of Indian Industry, trend analysis of different components of working capital was done. The different components of working capital are considered for evaluating the working capital management of twenty five Indian companies. The components under our study are; 1).Inventory,2).Debtors,3).Cash,4).Other current assets, 5).Creditors and 6).Other current liabilities.

After necessary adjustments in the data set, the nominal and real growth rate of aforesaid components of working capital are studied for five different Indian industries namely Automobile, Cement, Fertilizer, Heavy Engineering and Steel.

Total data set cover two hundred fifty numbers of Annual Reports of twenty five Indian companies for ten years. The trend analysis of the components of working capital of companies as a whole were estimated in nominal terms for the period 2004-2005 to 2013-2014, from the estimated coefficient of the chosen trend equation. The growth rates have been directly measured from the estimated coefficients of 't' (i.e. Time), in the case of exponential (with normalization of time i.e., shifting the origin to the midpoint of the time period) trend equation. The form of the equations to estimate the growth rates of different components of working capital of twenty five Indian companies is given by:

$$\textbf{Log } \mathbf{Y_t = a + bt + ct^2}$$

Where: Y_t is the variable whose over time growth is measured

Log implies natural logarithm (i.e. Log_e) and all others

't' is the time variable.

a, b and c are the constant parameters.

The growth rate is expressed in percent per annum is presented in the Tables. The trend line fitted to the time series data of the components of working capital and $\bar{R}^2$ (Adjusted $\bar{R}^2$) indicates the goodness of fit for each of the estimated trend equation along with their statistical significance. Further to separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by the Real price index of Reserve Bank of India and then the modified trend line is fitted to the relevant data. (Source; https://www.sbi.co.in/portal/web/interest-rates/benchmark-prime-lending-rate - historical-data)

We also consider the Durbin-Watson statistic because the Durbin-Watson test statistic tests the null hypothesis that the residuals from an ordinary least-squares regression are not auto correlated against the alternative that the residuals follow an Auto Regressive process.

The statistical techniques used in this study are the arithmetic mean $(\bar{x})$, co-efficient of variance (C.V), trend indices, simple growth rates, correlation co-efficient of determination $(\bar{R}^2)$, liner regression equations. We also used SPSS software for statistical result.

3.5.2   Ratio Analysis:

We have used accounting technique of Ratio Analysis as this technique is regarded as one of the best tools in analysis and computing the time series accounting data of different firms. A ratio is defined as the indicated quotient of two mathematical expressions, and as a relationship between two or more things. It expresses the qualitative relationship. Ratio is used for evaluating the financial position and performance of a firm. The absolute financial figures do not add meaningful understanding of information that is available but expresses in ratios they show meaningful relationship between two items which helps management in drawing certain conclusion. Various ratios computed in order to analysis the size, composition and circulation of working capital and its various components are debtors turnover ratio, inventory turnover ratio, working capital turnover ratio, current ratio, quick ratio, net profit percentage, debt-equity ratio cash conversion cycle, cost of equity and P/E ratio.

3.5.3   Factor Analysis:

In the above section the liquidity and profitability positions have been analyses by using the relevant ratios for each of these positions and performance of the companies was assessed on the basis of these positions. It can be safely said that not all these factors with their all constituent ratios are not equally important in determining performance. One of these factors may be more important than others in the sense of its explaining power or predictive power. Further, all the ratios may not move in the same direction to derive valid conclusion. An attempt is made here to club the homogeneous ratios in the form of either liquidity or

profitability ratio through factor analysis and correlation coefficient has been calculated between the principal component factor of liquidity and profitability ratios.

3.5.4   Multiple Regression Analysis

We have done multiple regression analysis between the profitability and liquidity ratios of the companies under different industries. The profitability ratios like Return on Assets (ROA), Return on Equity (ROE) and Net Profit Ratio (NP) are taken as dependent variable and Debtor turnover ratio, Inventory turnover ratio; working capital turnover ratio, current ratio and Sales have been considered as independent ratios. The following equation has been used for the analysis.

$$\textbf{ROA / ROE / NP} = \boldsymbol{\beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon_I}$$

Where: X_1 =   Debtors Turnover Ratio

X_2 =   Inventory Turnover Ratio

X_3 =   Working Capital Turnover Ratio

X_4 =   Current Ratio

X_5 =   Log Sales

ε_I =   Error

3.6 SUMMARY OF THE CHAPTER;

To access the performance of the selected twenty five companies of five different Indian industries thus, automobile, cement, fertilizer, heavy engineering and steel we have collected data from the published financial report of each company. We have also collected data on consumer price index –annual average of industrial workers and agricultural laborer published by RBI. We have selected twenty five company out of many company listed in NSE by a random selection programme written by Java language. Trend equation; namely, log-quadratic have been fitted to different performance parameters for estimating their real as well as nominal growth rates over time (2004-05 to 2013-14). Financial ratio analysis has been used to assess the liquidity, profitability and efficiency positions of the selected companies. The regression equations considered in our study are linear forms. The least square methods or its variants are used to estimate the parameters and the statistical significance of the parameters is tested by applying appropriate tests. We have also used factor analysis to find out the most dominating variables within our selected variables. Besides this we also calculated multiple regression analysis for finding out the significant variables.

CHAPTER IV

WORKING CAPITAL MANAGEMENT OF SELECTED INDUSTRIES - REGRESSION MODEL: MEASUREMENT OF FIVE INDUSTRIES IN INDIA FROM ECONOMIST'S ANGLE

4.1   TRENDANALYSIS OF AUTOMOBILE INDUSTRIES;

i) Ashok Leyland Limited

Considering the nominal growth rate from the estimated value of different components of working capital of Ashok Leyland observed in the Table 4.1, growth rate of inventory is 5.30% which indicates that they maintain a low level of inventory and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is 7.70% which indicates increase in the volume of credit sale and recovery from the debtors are slow, whereas growth rate of cash is (-) 7.0% this indicates that the company is holding less amounts of cash in hand. Other current asset increased at 6.00%which indicates that there is sufficient increase of working capital which helps the organization to meet exigency requirements of running fund. The growth rates of creditor and other current liabilities increased at 1.70% and 18.20% respectively which are also statistically significant at 1% level of significance and indicates that the company is maintaining a good payment policy for the suppliers, but high percentage of other current liabilities indicates there are some short time liabilities which plays an important role for the organization as well as for the working capital also.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI, and then

the chosen trend line was fitted from the estimated parameter of different components of working capital of Ashok Leyland. From the estimates observed in the table 4.2, the real growth rate for inventory is 1.0%, debtors are 3.4% and for other current assets is 1.7%. This is an indication of stable growth, which is also statistically significant at 1% level of significance. Growth rate in other current liability is 13.90%.

ii) Bajaj Auto Limited

The growth rate of different components of working capital of Bajaj Auto is presented in table 4.3, it is observed that the nominal rate of growth of inventory is 6.30% which indicates they maintain a low level of inventory and the growth rate is statistically significant at 1% probability level. The growth rate of debtor is 5.90% which indicates increase in the volume of credit sale but the company has been able to increase the debtor's turnover ratio which indicating that the company is able to collect it's due from customers in time and hence the cash conversion cycle is only 1 week. Growth rate of cash is 13.90% and for other current asset is 3.40%, the company is maintaining cash at a high level which is reflected by growth rate in cash. The growth rate of creditor and other current liabilities is 1.70% and 2.60% respectively which are also statistically significant at 1% level of significance.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.4, the real growth rate of inventory is 2.0%, debtors is 1.6%, cash is 9.60% and other current assets growth in is (-) 9.0%, which are also statistically significant at 1% level of significance. Growth rate in creditors and other current liability is(-) 2.7% and (-) 1.8%respectively.When we separate out the influence of inflation there after we

have get the growth rate of inventory and debtors 2% and 1.6% respectively which shows that the company is not holding excess amount of stock and debtors which also affects the profitability. Net profit ratio of the company during the period of 2004-2005 to 2013-2014 on an average of 14.43% which is best within all the selected automobile companies. The growth rate of creditors is (-) 2.70% which shows that the company is paying off its creditors in time and not depriving them which is also an action for corporate social responsibility.

iii) Eicher Motors Limited

The estimated growth rates of different components of working capital have been presented in table 4.5. The growth rate of inventory is (-) 2.10% at 1% level of significance, which indicates that the company has been maintaining stable inventory position. The growth rate of debtors is (-) 20.70 at 1% level of significance. This result also validated by debtor's turnover ratio which is increasing at a high rate. This means that though the company is able to increase the sales but the company is following aggressive credit policy which is helping in reducing the commercial cycle. The growth rate of cash and other current asset are 7% and 11.1% respectively at 1% level of significance. The growth rate of creditors and other current liabilities are 1.4% and 7.4% respectively at 1% level of significance. Credit policy of the company has been changed from the year 2009-2010 where the debtor's turnover ratio has sharply increased from 11.97% (2005-2006) to 203.74% (2011-2012) which has directly affected the net profit ratio of the concern and the net profit ratio has increased from 2.31% (2006-2007) to 17.76% (2013-2014). It is found from the annual report of the company that the new CEO was appointed in the year 2008-2009 who has taken an aggressive credit policy.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. The estimates observed in the table 4.6, the real growth rate of the company found (-) 6.50% for inventory, debtors and cash growth rates are (-) 25.00%, (-) 11.40% respectively. Positive growth of other current assets is 6.70%, which are also statistically significant at 1% level of significance. Growth rate of creditors is (-) 5.70% and other current liability is 3% .This result indicates that the nominal growth result is better than every aspect of the real growth rate of the company for all the components of working capital except other current liabilities. The real growth rate of inventory and debtors are negative which shows that the company has been handling the working capital efficiently which helping in increasing the profitability of the company.

iv) Hindustan Motors Limited

The nominal growth rates of the elements of working capital of Hindustan Motors have been demonstrated in the table 4.7. The growth rate of inventory is (-) 0.20% which is statistically significant at 1% level of significance. The growth rate of debtor is (-) 4.90%. Growth rate of cash is(-)3.30% and for other current asset is also (-) 4.70, growth in other current asset indicates that there is not enough effort done by the company to maintain a effective working capital which effects the organization to unable to meet requirements of working capital. The growth rate of creditor is (-) 9.0% which is also statistically significant at 1% level of significance. Other current liability growth rate is 10.50% is indicates that short time liabilities plays an important role for the business, but high percentage indicates that there is some kind of short time liabilities which negatively affect the organization.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. It is observed in the table 4.8, the real growth rate is (-) 11.50% for inventory, growth rate of debtors is (-) 9.30%, growth rate of cash (-) 7.60% and other current asset's growth is (-) 9.00%, which are also statistically significant at 1% level of significance. Growth rate in creditors is (-) 13.00%, other current liability (-) 6.20% respectively .This result indicates that the nominal growth performance is better than every aspect of the real growth rate of the company for all the components of working capital. The performance of the company is bad during the study period of 2004-2005 to 2013-2014and has turned in closure.

v) Tata Motors Limited

The growth rate of different parameters of working capital has been presented in the table 4.9. There is no variation found in nominal rate of growth of inventory is which indicates the company maintains stable control in inventory; the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is also 1.30% which indicates increase in the volume of credit sale and recovery from the debtors are normal, growth rate of cash found (-)32.50% and growth rate of other current asset is (-)2.50%, indicates that the company is not maintaining the cash at in a proper way. Negative growth in cash and other current asset indicates that there is not enough effort done by the company to maintain a proper and effective working capital which effects the organization to meet positive requirements of working capital. The growth rate of creditor and other current liabilities is (-)1.50% and (-)0.30% respectively which are also statistically significant at 1% level of significance and indicates that company is maintaining a normal payment policy for the suppliers. Nominal growth rate other

current liability indicates that there is not fluctuation in the company policy regarding current liabilities as a whole.

The performance of Tata Motors is the stable among the selected automobile companies. The company is moving towards JIT where holding of inventory and debtors will no longer require. This is the evident from the result of the company during the period of our study and there is no fluctuation in the overall performance of the company. The average net profit ratio is 7.06% during the study period which is low in percentage but stable in nature.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.10, the real growth rate of Tata Motors is (-)4.40% for inventory , debtors growth is (-)3.0%, growth rate of cash is (-)14.80% and growth rate of other current assets found (-)6.90%, which are also statistically significant at 1% level of significance. Growth rate in creditors is (-) 15.80% and other current liability found (-)4.00% respectively .This result indicates that the nominal growth performance is better than every aspect of the real growth rate of the company for all the components of working capital except cash.

4.2   TRENDANALYSIS OF CEMENT INDUSTRIES;

i) Everest Cement Limited

The nominal growth rate of different components of working capital of Everest Cement observed in the table 4.11, the nominal growth rate of inventory is 0.90% the growth rate is statistically significant at 1% level of significance and indicates that the company maintain a

low level but stable inventory policy which is also supported by the inventory turnover ratio as it is found stable for selected ten years data. The growth rate of debtor is 17.90%, which indicates increase in the volume of credit sale, and recovery from debtors are very slow as a result company's average net profit ratio become low which is found only 5.42%. Growth rate of cash is 3.50% and for other current asset is 9.50%.Increase in other current asset indicates that there is sufficient increase of working capital which helps the organization to meet exigency requirements of running fund. The growth rate of creditor and other current liabilities is 8.80% and 19.10% respectively which are also statistically significant at 1% level of significance, but high percentage of other current liability indicates there are some short time liabilities which plays an important role for the company.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.12, the real growth rate of inventory is 5.60%, debtor's growth is 13.60%, in cash (-) 0.80% and growth of other current assets is (-) 3.10%, which are also statistically significant at 1% level of significance. Growth rate in creditors is 4.40%, other current liability 14.80% respectively .Other current liabilities is perform better in real growth. Debtor's performance is really bad which the indication of slow recovery against credit sale.

ii) ACC Cement Limited

Estimated value of different components of working capital of ACC Cement presented in the table 4.13. The nominal growth rate of inventory is 4.30% and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is 2.90%, which indicates low in the volume of credit sale and the company maintains an aggressive collection

policy from the debtors that is why we also found cash conversion cycle is only 1 week and net profit ratio 15.18% which may describe good profit earning company among the selected companies. Growth rate of cash is 3% and for other current asset is 9.90%, the company is maintaining cash at a low level. The growth rate of creditor is (-) 8.0% indicates that the company adopted advance payment policy for the suppliers. Growth rate of other current liabilities 10.5% which are also statistically significant at 1% level of significance but high percentage of other current liability indicates there are some short time liabilities which are important for the working capital as well as the overall performance of the organization. Another important observation is, with the negative growth of creditors and high turnover of debtors proves that company established trustworthiness of the company for suppliers and customers both.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.14, the in the real growth, there is no changes in inventory, Growth rate of debtor's is (-) 1.50%, cash is(-) 1.40% and growth of other current assets is (-) 5.60%, which are also statistically significant at 1% level of significance. Growth rate in creditors is (-) 5.20%; other current liability 6.20.This result indicates that the nominal growth performance of ACC Cement is better comparing with real growth. But it is also observed that there is some kind of other liability plays in important role for working capital as the nominal growth of other current liability is higher than real growth.

iii) Grasim Cement Limited

The nominal growth rate of different parameters of working capital of Grasim Cement is presented in the table 4.15. It is observed that the nominal growth rate of inventory is 1.60% which indicates they maintain a low level of inventory and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is 0.40%, which indicates no such increase in the volume of credit sale and realization from customers is first in nature. We also observed that net profit ratio is 16.64% on an average, but at the same time we found that in the subsequent two years 2012-2013 and 2013-2014 cash conversion cycle increased and net profit percentage also decreased to 9.38% and 6.46% respectively, which prove that debtors related activity affects the profitability of the organization. Growth rate of cash is (-)12.10% indicates that the company unable to maintain a stable cash balance in hand and for other current asset is 7.10%, in other current asset indicates that there is sufficient increase of working capital which helps the organization to meet exigency requirements of running fund. The growth rate of creditor and other current liabilities is (-)4.30% and (-)19.10% respectively which are also statistically significant at 1% level of significance and indicates that company take short time period to make payment to the suppliers. Percentage of other current liability indicates there are some other short time liabilities which have also an important role for the organization as well as working capital.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.16, the real growth rate of Grasim Cement, growth rate of inventory is (-)2.08%, Debtor's growth is (-)4.00% and cash is (-)16.04%, growth in other current assets is 2.70%, which are also statistically significant at 1% level of significance.

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Growth rate of other current liability is found 1.00% where the nominal growth rate was 5.30%, maybe there was some other liabilities which adversely affected by the inflations.

iv) Dalmiya Cement (Bharat) Limited

From the table 4.17 estimated values of different components of working capital of Dalmiya Cement, is observed that growth rate of inventory is 11.20%, the growth rate is statistically significant at 1% level of significance which indicates they maintain high level of inventory. The growth rate of debtor is 2.20%, which indicates low volume of credit sale, we observed that cash conversion cycle is 4 weeks on an average but the profit percentage is 15.67% , those result may conclude as , those are normal for the company. Growth rate of cash is (-) 9.20% indicates that the company unable to maintain stable cash balance in hand and growth rate for other current asset is 6.70%. The growth rate of creditor is 10.50%and other current liabilities 3.50% which are also statistically significant at 1% level of significance and indicates that company is maintaining advance in payment policy for the suppliers. Hare again we found another observation that without depriving the suppliers company can earn good amount of profit also.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.18, growth rate of inventory is 15.50%, which is higher comparing with other selected companies but it is also found that this company earns a good amount of profit. Growth rate of debtors is(-) 2.40%, growth rate of cash is(-) 13.05% and growth of other current assets is 2.40%, which are also statistically significant at 1% level of significance. Growth rate in creditors is (-) 14.80%; other current liability 0.60%. This result

indicates that the nominal growth performance of Grasim Cement is better comparing with real growth. It is also found that creditor's growth is high for nominal and real growth rate is high, may be due to the nature of raw material it happened.

v). JK Cement Limited

From the table 4.19 estimated values of different components of working capital of JK Cement is observed that the nominal rate of growth of inventory is 12.20% which indicates they maintain a high level of inventory and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is 5.20%, which is the indication of efficient credit policy that is why the cash conversion cycle is only 1 week on an average. Growth rate of cash is 6.70% and for other current asset is 3.40%, the company is to maintain cash at a low level which is reflected by growth rate in cash and increase in other current asset indicates that there is normal increase of working capital which helps the organization to meet exigency requirements of running fund. The growth rate of creditor and other current liabilities is 1.70% which are also statistically significant at 1% level of significance and indicates that company is maintaining a normal payment policy for the suppliers.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.20, the real growth rate of JK Cement, growth rate of inventory is 7.90%. Debtor's growth is negative (-) 0.90%, cash 2.40%, growth in other current assets is (-) 0.90%, which are also statistically significant at 1% level of significance. Growth rate in creditors is (-) 2.6%. Growth rate of other current liabilities found 40.50% which is very high in percentage comparing with other selected companies of cement industries. This result

indicates that there was some kind of short term liabilities which directly affected by the inflationary rate, as the other current liabilities includes short term liabilities which is creates obstruction for the value of working capital as well as total performance of the company.

4.3   TRENDANALYSIS OF FERTILIZER INDUSTRIES;

i) Hindustan Insecticides Limited

Table 4.21 represents the nominal growth rate of different components of working capital of Hindustan Insecticides Limited. From this table we observed that growth rate of inventory is 3.50%, growth rate of debtor is 4.70% and that growth rate is statistically significant at 1% level of significance. After analyzing the growth rate of inventory and debtors an important fact came to surface that due to the nature of the fertilizer business, high time period of cash conversion cycle is not an obstacle for the profit, most of the company's cash conversion cycle found between 4 to 5 weeks. Growth rate of cash is (-) 3.90% and for other current asset is(-) 5.80%, the company maintains cash at a low level which is reflected by the growth rate in cash, negative growth in the other current assets indicates that there is decrease in working capital. The growth rates of creditor and other current liabilities is 4.10% and 3.20% respectively which are also statistically significant at 1% level of significance and indicates that the company is maintaining a stable payment policy for the suppliers, but high percentage of other current liabilities indicates there are some short time liabilities that affects the working capital.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.22, the real growth rate of Hindustan Insecticides Limited is

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negative of all the selected components of working capital except debtors. Growth rate of inventory is (-) 9.0%, growth rate of debtors is 3.00%. Growth rate of cash (-)8.20% and growth rate of other current assets is (-)10.10%, which are also statistically significant at 1% level of significance. Growth rate of creditors is 0.01% indicates that there were no such affects made regarding payment policy of the company. These results indicate that the nominal growth performance is better than the real growth rate of the company for all the components of working capital.

ii) National Fertilizer Limited

Table 4.23 is the representation of analyzed result of different components of working capital of National Fertilizer. From the estimated value of the table we found, the nominal rate of growth of inventory is 1.80% which indicates they maintain a low level of inventory and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is found 11.90% which indicates increase in the volume of credit sale and recovery from the debtors is very slow which against the profitability of the organization, this statement supported by the net profit ratio of the company which is very poor only 2.06% and there was loss for some of the year also. Growth rate of cash is (-) 33.50% and for other current asset is negative (-)2.80%, the company not maintains cash or there is no such requirements of liquid cash which is reflected by the growth rate in cash, negative growth in the other current assets indicates that there is decrease in working. The growth rates of creditor and other current liabilities are (-) 1.80% and 1.63% respectively which are also statistically significant at 1% level of significance and indicate that the company is not depriving the suppliers.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.24, the real growth rate of National Fertilizer Limited. Real growth rate of inventory (-) 2.80%, for debtors is 7.30%. A growth rate of cash is (-) 12.20% and other current assets is 8.30%, which are also statistically significant at 1% level of significance. Growth rate of creditors is (-)8.50%, which may have some adverse effect on the organization because we found that the company not so aggressive regarding the credit policy or the collection from the debtors but surprisingly the company is more concern to advance payment policy to the suppliers there is no such answer found for this activity. Growth rate in other current liability is (-) 7.50%, this is a good indication that the company try to remove on the dependency of short term liabilities. Nominal growth performance is better than the real growth rate of the company for all the components of working capital.

iii) Paradeep Phosphate Limited

Considering the nominal growth rate of different components of working capital of Paradeep Phosphate Limited observed in the Table 4.25, the nominal rate of growth of inventory is 5.10% and the growth rate is statistically significant at 1% level of significance, which indicates the company maintains a stable inventory growth which is also supported by the inventory turnover ratio. The growth rate of debtor is 0.07% which indicates that they are very much aggressive in credit policy also recovery from the debtors, reflection of this policy is also found the debtors turnover ratio which is 2.29 times on an average for the study period. Growth rate of cash is 4.50% and for other current asset is 0.20%, the company maintains cash efficiently which is reflected by the growth rate in cash, growth in the other current assets indicates that there is no such affect in working capital for the activity of other current asset.

The growth rates of creditor and other current liabilities is (-) 6.40% and positive 33.90% respectively which are also statistically significant at 1% level of significance and hare we found another factor that the company is more concern for the suppliers because they payment to the suppliers more first than collection from the debtors, may be this is an example for corporate social responsibility. High percentage of other current liabilities indicates there are some short time liabilities which the company may not use properly as a result value of working capital is directly affected.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.26, the real growth rate of Paradeep Phosphate Limited is inventory is 0.08%, debtors is 2.70%. Growth rate of cash is 0.20% and growth rate of other current assets is 15.80%, which are also statistically significant at 1% level of significance. Growth rate of creditors is (-) 10.80%, growth rate in other current liability is 29.60%. These results indicate that the nominal growth performance is not so much good comparing with the real growth rate mainly for other current asset and other current liabilities of the company. Both are important for the efficiency of working capital specifically when one of the parameters value gets too high or low.

iv) National Fertilizer Limited

Table 4.27 is the presentation of estimated value of different components of working capital of National Fertilizer Limited. From the estimate we observed that the nominal rate of growth of inventory is 4.0% and the growth rate is statistically significant at 1% level of significance, which indicates they maintain a higher level of inventory. The growth rate of

debtor is 8.20% which indicates recovery from the debtors slow, whereas growth rate of cash is 6.30% and growth rate of other current asset is (-) 6.50%, the company maintains cash efficiently which is reflected by the growth rate in cash, growth in the other current assets indicates that previously there was some current asset other than debtors and stock, presently the company going to reduce those kind of current asset, which directly affect in working. The growth rates of creditor and other current liabilities is 4.80% and 14.30% respectively which are also statistically significant at 1% level of significance and indicates that the company is maintaining a slow payment policy for the suppliers, but high percentage of other current liabilities indicates there are some short time liabilities which the company may not use properly as a result value of working capital is also directly affected.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.28, the real growth rate of National Fertilizer Limited. Real growth rate if inventory is (-) 0.30%, growth of debtors is 3.90%. Growth rate of cash is 2.0% for other current assets is(-) 10.80%, which are also statistically significant at 1% level of significance. Growth rate of creditors is 0.40%, is the direct reflection of the aggressive policy related with suppliers. Growth of other current liability is 9.90%, these results indicate that the nominal growth performance is better comparing with the real growth rate.

v) DCM Sriram Fertilizer Limited

From the estimated value of different components of working capital of Sriram Fertilizer observed in the Table 4.29, the nominal growth rate of inventory is 7.10% and the growth rate of debtor is 5.20%. High growth rate of inventory represents the unnecessary

blockage of capital as well as high debtor's growth reflects that too much flexible policy by the company regarding credit sale and collection from debtors or the company not considers appropriate steps for collection from debtors. Whereas growth rate of cash is 10.80% is also another result which reflects blockages of cash. When we look after the net profit ratio we found that net profit ratio of the company is only 2.98% which is poor in percentage, even there was loss for the year 2010-2011 and for the year 2011-2012. These result surfaced the fact that profitability of the company directly affected by the growth rate of inventory debtor and cash and current asset. The growth rates of creditor and other current liabilities is 5.0% and 25.60% respectively which are also statistically significant at 1% level of significance. High percentage of other current liabilities indicates there are some short time liabilities which the company may not use properly as a result value of working capital is directly affected.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.30, the real growth rate of DCM Sriram Limited real growth rate if inventory is 2.8%, growth rate of debtors is 0.8%. Growth rate of cash 6.4% and for growth of other current assets is 3.70%, which are also statistically significant at 1% level of significance. Growth rate of creditors is 0.60%, growth rate in other current liability is 16.40%. In real growth rate we observed that all the selected components of working capitals growth rate less than nominal growth, somehow inflationary condition positively affect the real growth. These results indicate that the nominal growth performance is better comparing with the real growth rate.

4.4 TRENDANALYSIS OF HEAVY ENGINEERING INDUSTRIES;

i). Bharat Earth Movers Limited (BEML)

Considering the nominal growth rate from the estimated value of different components of working capital of Bharat Earth Movers   Limited observed in the Table 4.31, the nominal growth rate of inventory is 8.70% which indicates they maintain a high level of inventory and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is 1.10%, it is found that company's credit sale become stable for selected ten years data range but due to the heavy in nature of the company's cash conversion cycle is very slow comparing with automobile, cement and fertilizer industry, as a result profitability become poor because net profit ratio is found only 5.87%, this can conclude as performance of all the components of working capital affect the overall profitability of the company. Growth rate of cash is found (-) 14.90% and growth rate of other current asset is 9.20%, the company not maintains cash efficiently which is reflected by the growth rate in cash. We also found that growth rates of creditor are(-) 7.20% represents the company's payment policy in advance in nature as a result creditor's growth become negative. Growth rates of other current liabilities is 23.90% which is too high are also statistically significant at 1% level of significance , but high growth percentage of other current liabilities indicates that there are large amount of current liabilities other than creditors which negatively affects the profitability and efficiency on the overall performance of the company.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the

estimates observed in the table 4.32, the real growth rate of BEML Limited. Real growth rate of inventory is 4.4%, growth rate of debtors is (-) 3.30%. Growth rate of cash is (-) 19.30% and growth rate of other current assets is 4.90%, which are also statistically significant at 1% level of significance. Growth rate of creditors is (-) 11.60%, growth rate in other current liability is 19.60%. All those selected parameters performance are same in nature when we consider inflation rate, is the indication of large business should consider the entire financial factor very efficiently.

ii) Bharat Heavy Electricals Limited (BHEL)

From the estimated value of different components of working capital of BHEL Limited observed in the Table 4.33, the nominal growth rate of inventory is 8.10% which indicates that the maintain a high level of inventory and the growth rate is statistically significant at 1% level of significance. Due to the growth rate of debtor is 9.30% cash conversion become very high 13 weeks on an average and this things directly affected on net profit ratio, because in the year 2013-2014 cash conversion cycle touched to 18 weeks and we found that this year net profit percentage 9.02% is the lowest within the selected ten years data which indicates recovery from the debtors is one of the most important factor for the profitability of that company. whereas growth rate of cash is 5.20% and growth rate of other current asset growth is 4.0%, the company is efficiently maintains cash and handling other current asset which is reflected by the growth rate in cash and other current assets. It also indicates that cash and other current assets are also make positive effect in working capital as we found working capital turnover is almost stable. There are no changes of the growth rates of creditors. Other current liabilities growth rate is 16.60% which are also statistically significant at 1% level of significance and indicates that the company already established a effective payment policy for the suppliers, but

high percentage of other current liabilities indicates there are some short time liabilities which the company may not use efficiently.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.34, the real growth rate of BHEL Limited. Real growth rate of inventory is 3.8%, growth rate of debtors is 4.90%. Growth rate of cash is 0.9% and growth rate of other current assets is (-) 0.30%, which are also statistically significant at 1% level of significance. Only growth rate of creditors is affected much than nominal growth which is (-) 4.40%, growth rate in other current liability is 12.3%. These results indicate that the nominal growth performance is better comparing with the real growth rate for all the considered parameter.

iii) Tractor India Limited (TIL)

Analysis of different components of working capital of Tractor India Limited presented in the Table 4.35, the nominal growth rate of inventory is (-) 1.1% and the growth rate is statistically significant at 1% level of significance, growth rate of debtors is (-) 2.90%, both indicates that company is not holding excess inventory in hand at the same time company become more aggressive regarding the sales and credit policy for the debtors, as a result both growth rate are become negative and this affect directly on the profitability of that company. This statement also justified by the cash conversion cycle which is only 8 weeks is the lowest among the selected heavy engineering industries. We also found that in the year 2013-2014 cash conversion cycle was 15 weeks which was highest within the selected data range and that year TIL's net profit ratio was 0.19% which was the lowest net profit within the selected ten

years. Growth rate of cash is 7.30% and growth of other current asset is 3.60%, the company is efficiently maintains cash and handling other current asset. Higher growth rate of cash indicates that there is sufficient amount of working capital is available for all kind requirements of running funds. We also found that growth rates of creditors are(-) 5.50%, and growth rate of other current liabilities is 11.70% which are also statistically significant at 1% level of significance and indicates that the company is performing some kind of corporate social responsibility by the payment policy to the suppliers. But high percentage of other current liabilities indicates there are some short time liabilities which the company may not use properly.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.36, the real growth rate of TIL, growth rate if inventory is (-) 4.0%, growth rate of debtors is also (-) 7.0%. Growth rate of cash is 0.30% and growth rate of other current assets is (-) 0.70%, which are also statistically significant at 1% level of significance. Growth rate of creditors is(-) 9.8%, growth rate in other current liability is 6.8%. These results indicate that the inflationary rate not effect so much for this company for the different selected parameters of working capital.

iv) ISGEC Heavy Engineering Limited

Table 4.37 has been representing the estimated value of different components of working capital of ISGEC Heavy Engineering Limited, the nominal rate of growth of inventory is 5.5% and the growth rate is statistically significant at 1% level of significance. The growth rate of debtors is 8.9%. Inventory and debtors growth indicates that the company holding large

amount of inventory and unable to collect dues from the debtors which is the unnecessary blockage of working capital and obviously affect the cash conversion cycle from the year 005-2006 to 2007-2008 we observed that when the cash conversion become slow profitability also moving downward and vice versa. Growth rate of cash is 21.30% and for other current asset growth is 8.80%, the company is maintains high level of cash and handling other current asset. Higher growth rate of cash indicates that the company holding unused cash in hand. Growth rates of creditors are 4.4%. Other current liabilities growth rate is 16.40% which are also statistically significant at 1% level of significance and indicates that the company is maintaining a slow payment policy for the suppliers, but high percentage of other current liabilities indicates that there are short time liabilities which the company may not use efficiently as a result value of working capital is directly affected.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.38, the real growth rate of ISGEC Heavy Engineering Limited. Growth rate if inventory is 1.10%, growth rate of debtors is 4.60%. Growth rate of cash is 16.90% and for other current assets growth rate is 4.40%, which are also statistically significant at 1% level of significance. Growth rate of creditors is 0.10%, growth rate in other current liability is 12.10%. These results indicate that the nominal growth performance is better comparing with the real growth rate for all the considered parameter.

v) Heavy Engineering Corporation

From the estimated value of different components of working capital of Heavy Engineering Corporation, observed in the Table 4.39, the nominal growth rate of inventory is

6.60% which indicates they maintain a high level of inventory and the growth rate is statistically significant at 1% level of significance. The growth rate for debtors is 9.80% which indicates recovery from the debtors is very slow in nature, which directly affect cash conversion cycle which is 33 week on an average as a result profitability and occurred loss on an average 0.16%, we also found that the company continually focused on the cash conversion cycle because profitability is highly affected by the cash conversion cycle but it is also observed that in the year 2013-2014 cash conversion cycle was 48 weeks but that year company also able to create profit whereas in the year 2004-2005 the company suffered from loss 20.54% with 28 week cash conversion cycle, this is the reason for focused on cash conversion cycle. Growth rate of cash is (-) 6.9% and growth rate of other current asset is 4.9%, the company is trying to reduce holding unutilized cash in hand and handling other current asset for the requirements of working capital that is why working capital turnover found stable. Growth rates of creditors are (-) 5.5%. Other current liabilities growth rate is 3.30% which are also statistically significant at 1% level of significance and indicates that the company is maintaining a better payment policy for the suppliers, but high percentage of other current liabilities indicates there are some short time liabilities which the company may not use efficiently.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.40, the real growth rate of Heavy Engineering Limited. Real growth rate if inventory is 2.3%, growth rate of debtors is 5.5%. Negative growth rate of cash is (-) 11.3% and for other current assets growth rate is 0.5%, which are also statistically significant at 1% level of significance. Growth rate of creditors is (-) 9.90% and other current

liability growth rate are (-) 1.1%. These results indicate that the nominal growth performance is better comparing with the real growth rate for all the considered parameter.

4.5   TREND ANALYSIS OF STEEL INDUSTRIES;

i) Tata Steel Limited

Table 4.41has been represented the estimated value of different components of working capital of Tata Steel, the growth rate of inventory is 6.50% and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is only 1.80% and cash conversion period is only one week , we also found that debtors turnover is 41.69% , this happened only due to the appropriate sales policy and aggressive collection methods adopted by that company as a result we found that net profit ratio is 20.72% which is really a good amount of profit .whereas growth rate of cash is 9.20% and growth of other current asset is 3.80%, the company maintains cash at a high level which is reflected by the growth rate in cash, increase in the other current assets indicates that there is sufficient increase of working capital which helps the organization to meet exigency requirements of running fund. The growth rates of creditor and other current liabilities is 5.70% and 14.90% respectively which are also statistically significant at 1% level of significance and indicates that the company is maintaining a stable payment policy for the suppliers, but high percentage of other current liabilities indicates there are some short time liabilities that plays an important role for the organization.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.42, the real growth rate of inventory is 2.20%, for debtors is (-

) 2.5%, growth rate of cash is 4.90% and for other current assets is (-) 0.60/% which are also statistically significant at 1% level of significance. Growth rate of creditors is 1.40% and other current liability growth rate is 10.60%. These results indicate that the nominal growth performance is better than the real growth of the company for all the components of working capital.

ii) Steel Authority of India (SAIL)

From the estimated value of different components of working capital of Steel Authority of India observed in the Table 4.43, the nominal rate of growth of inventory is 4.50% which indicates they maintain a high level of inventory and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is 7.90% which indicates recovery from the debtors are slow in nature which affects net profit of that company also. This can be justified by the cash conversion cycle which is 4 weeks on an average, we also found that cash conversion cycle affects net profit as in the year 2004-2005 cash conversion cycle was 2 week and the net profit was highest 23.55% and net profit ratio was 4.75% against 8 weeks of cash conversion cycle. Growth rate of cash is (-) 8.10% and for other current asset it is 5.90%, the company not maintains cash at positive level which is reflected by the growth rate in cash, increase in the other current assets indicates that is increase of working capital which helps the organization to meet exigency requirements of running fund. The growth rates of creditor is(-) 3.70% and other current liabilities is 8.90%, which are also statistically significant at 1% level of significance and indicates that the company is maintaining a good payment policy for the suppliers which is the indication of corporate social responsibilities. But high percentage of other current liabilities indicates there are some short term liabilities that play some important role for the organization as well as for the working capital.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.44, the real growth rate of inventory is 0.20% in inventory , indicates stable maintenance of inventory, growth rate of debtors is 3.50%, growth rate of cash is (-) 12.50% and for other current assets is 1.60% which are also statistically significant at 1% level of significance. Growth rate of creditors is (-) 8.0% is the indication of advance payment policy to the suppliers and other current liability growth rate is 4.60%.

iii) Adhunik Metaliks Limited

From the estimated value of different components of working capital of Adhunik Metaliks Limited observed in the Table 4.45, the nominal rate of growth of inventory is 14.0% and growth rate of debtor is 10.20% which are comparatively high among the selected steel companies. We also found that due to high growth rate of debtor and inventory, cash conversion cycle time period is also become slow on an average 6 weeks, another observation is that from the year 2012-2013 cash conversion cycle become 9 weeks and the company starts loss from 0.17%, all those factor directly affect net profit ratio for selected ten years data range. Growth rate of cash is (-) 20.80% is a good indication that the company is holding much amount of cash in hand. Growth of other current liabilities is 26.20%, reflects there is some short time liabilities also which is frequently used for the business. The growth rates of creditor are 10.20% which are also statistically significant at 1% level of significance and indicates that the company is maintaining a slow payment policy for the suppliers. We found that growth of all the components of working capital is higher but working capital turnover is 2.63 times on an average.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.46, the real growth rate inventory is 9.60% in inventory, growth for debtors is 5.80%, growth rate of cash is(-) 25.10% and for other current assets is 6.50% which are also statistically significant at 1% level of significance. Growth rate of creditors is 5.80% and other current liability growth rate is 21.90%. Trend of the entire growth rate is same as nominal growth rate, difference found due to the consideration of inflationary rate.

iv) Rastriyo Ispat Nigam Limited/Vizag steel (RINL)

Table 4.47 is the representation of estimated nominal growth rate of all the selected components of working capital. Growth rate of inventory is 7.5% and debtor's growth rate is 13.6%. Though the growth rate is high but due to the shorter time periods of collection from debtors affects positively on net profit ratio. Growth rate of cash is (-) 14.3% is the indication that the company trying to reduce the liquid cash holding which is a good indication for the business. Growth of other current assets is 6.50% which are also statistically significant at 1% level of significance. Growth rate of creditors is (-) 2.3% indicates that the company's payment policy become slowly. Growth rate of other current liability is 18.9% which shows activity of short term liabilities are also has same important role for the business

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimated value of different components of working capital of Vizag steel (RINL) observed in the Table 4.48, the real rate of growth of inventory is 3.20% which indicates they are

maintaining a low level of inventory and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is 9.30% which indicates recovery from the debtors are slow in nature, whereas growth rate of cash is (-) 18.60% and for other current asset it is 2.20%, the company not holding cash in hand. Increase in the other current assets indicates that is increase of working capital which helps the organization to meet exigency requirements of running fund. The growth rates of creditor are (-) 6.70% is indicates slow payment policy of the company, and other current liabilities is 14.50%, which are also statistically significant at 1% level of significance. These results indicate that the nominal growth performance is better than the real growth of the company for all the components of working capital.

v) Jindal Steel & Power Limited

Performance of all the selected components of working capital presented in the table 4.49. Nominal rate of growth of inventory is 9.5% which indicates they maintain a very high level of inventory and the growth rate is statistically significant at 1% level of significance. The growth rate of debtor is 11.3% which is high due to the increase of credit sale but at the same time we found that debtors turnover is 22.39 times and cash conversion cycle is only 3 week on an average, All those factor affects working capital in positive manner and also found company's net profit ratio is 11.54% this percentage of profit is one of the best profit within the selected steel companies. Growth rate of other current asset it is 13.40%, represents that the company using some short term asset for the betterment of the business, this statements also justified by the working capital turnover ratio also. The growth rates of creditor is(-) 4.60% and other current liabilities is 29.90%, which are also statistically significant at 1% level of significance and indicates that the company is maintaining a slow payment policy for the

suppliers, but high percentage of other current liabilities indicates there are some short time liabilities which is also important for the business.

To separate out the influence of inflation on the growth rate necessary adjustment in the nominal value was made by deflating the nominal value by Real Price Index of RBI. From the estimates observed in the table 4.50, the real growth rate of inventory is 5.2% , growth rate of debtors is 7.3%, growth rate of cash is (-) 9.4% and for other current assets is 9.1% which are also statistically significant at 1% level of significance. Growth rate of creditors is (-) 8.9% and other current liability growth rate is 25.5%. we observed that other current liabilities includes different kind of short term liabilities which always take some dominating roll for the business otherwise profit percentage may be higher than present profit.

4.6 SUMMARY OF THE CHAPTER:

Intensive analysis of different components of working capital from the total data set may summaries as follow;

Automobile Industries:

According to the analysis of nominal growth rate, the performance of Bajaj auto is better within the selected companies of automobile industries considering overall growth rates of various components of working capital. Eicher Motors have a negative growth of debtors which is also reflected with high debtor turnover ratio showing better management of debtors and same thing is applicable for creditors also. Hindustan Motors have negative performance of working capital, only other current liabilities growth is positive, resulting performance of

working capital was not satisfactory. Ahoke Leyland with a negative growth in cash shows a good amount of working capital and efficient cash management.

The Real Growth rates of Eicher Motors are negative for all the parameters except other current assets and other current liabilities. Working capital requirement is decreasing while the profitability of Eicher Motors is increasing which indicates the negative relation between the working capital and profitability of this company. The management is handling the working capital efficiently. For Bajaj Auto it is found that all the parameters of current assets have positive growth rate except other current asset with 0.90% of negative growth rate. Hindustan Motors performed badly and have negative growth rates for all parameters which are also reflected in the ratio analysis with a negative profitability. The real growth rates of Tata Motors are negative but the profitability ratio has increased over the years which show that the management is efficiently managing the working capital.

Cement Industry:

Study of the available data has projected that the Nominal growth rate of Everest Cement is positive in all respect with a higher working capital though an increased value of other current liabilities. The performance of ACC cement is well evident by its positive growth rate. The growth rate for Grasim cement found to be a little negative taking into consideration the data provided for cash and creditors. In case of Dalmiya Cement inventory and creditors growth rate is negative otherwise all other growth rates are positive. In the case of JK Cement, as all the selected parameters project a positive growth rate which in turn has provided a positive impact on working capital.

Analysis of the collected data from the five selected cement companies namely Everest, ACC, Grasim, Dalmiya and JK Cement, has revealed that the other current liability of JK Cement has inflated up to 40.50%, affecting the working capital in a negative manner due to an un proportionate increase in the other parameters of current assets. In case of Grasim Cement real growth rate is not effective due to a negative growth rate in all the parameters of current asset with a maximum of (-)16.40% in case of cash. Comparatively Everest Cement has performed much better when real growth rate is taken into consideration as all the parameter except for cash reflects a positive growth. ACC's endeavor towards betterment is indicated in its significant increase in the current asset which is the highest within the selected parameters. Grasim Cement has projected a negative growth in case of all the parameter, affecting the performance of working capital. The working capital of Dalmiya Cements has enjoyed a positive effect due to a positive growth of 15.50%, in case of inventory.

Fertilizer Industry:

Nominal growth rate when taken into consideration the fertilizer companies it has been observed that for Hindustan Insecticides Limited growth for all the parameters tends to be positive other than cash and other current asset. National Fertilizer Corporation Limited manifested a negative growth in the case of other current asset and creditors affecting the working capital in negative manner. For Paradeep Phosphate is detected that other current liabilities growth rate i.e. 33.90% is higher in percentage within the selected components of working capital. Rashtriya Chemical and Fertilizer manifest a better growth rate percentage in the case of debtors and inventory providing a positive effect on working capital. Also found in our study that DCM Sriram is only company which has really maintained with utmost property the components of working capital.

While analyzing the real growth rate of the selected fertilizer companies it is found that Hindustan Insecticides Limited shows a negative growth regarding other current asset 10.10%, this affects working capital in negative way. In case of National Fertilizer it is observed that other current liabilities growth rate is 17.50% eventually decreasing the working capital. For Paradeep Phosphate it is found positive growth rate except creditors. As seen earlier in this case also DCM Sriram is the only company within the industry which has manifested a positive growth all the selected components.

Heavy Engineering Industry;

Considering the Heavy Engineering industry it is found that in case of BEML the Current liability has significantly reaching a figure of 23.90%, where as the growth of current asset has not increased noticeably otherwise the performance of working capital would have been better. While dealing with the Nominal growth rate of BHEL it has been observed that all the growth rates are in a positive manner. TIL has shown an increase in positive value when current asset, other current liability and cash taken into consideration. Other parameters of TIL show a negative growth. All the parameters in a positive note ISGEC are the best working capital maintaining company as is the case. HEC which also has reflected a positive maintenance of inventory and debtor's growth and a low increase of other current liabilities indicates the positive performance of working capital.

Scrutinizing the real growth in the case of BEML it is found except for inventory and other current asset it is in a negative manner. Other current liability growth is 19.60% affecting the working capital by reducing it. In case of BHEL it is noted that all the growth is within 5%, only the other current liability growth percentage is a little more. TIL's growth is 6.80% in case

of other current liabilities but negative growth (-) 9.80% in creditors is an indication that too much fluctuation of working capital has not taken palace for last 10 years. Only ISGEC is such a company who's the entire growth rate reflects positivity any naturally the working capital is high. The working capital of HEC is affected by the negative growth in the case of cash though the debtors and inventory maintain are in positive growth.

Steel Industry:

Taking into consideration the nominal growth rate of the steel Industry it has came to the forefront that more or less the other current liability shows a high growth rate for all the companies with Jindal Steel at its summit with the highest growth rate of 29.20 and lowest in cash (-) 5.10%. Adhunik Steel also manifests a highest and lowest growth among all the components of working capital with other current liabilities is 26.20% and cash to be (-) 20.80%. Thus it is a significant indication that the real and nominal growth is almost same in nature, but cash being affected more in real growth. Finally the ultimate effect on the working capital is that it is losing its value.

Dealing with real growth in the steel industry it is found that Tata Steel is comparatively better, only with an increase growth 10.60% of other current liabilities. Other than cash and other current liabilities SAIL has maintain a positive growth which is also same for Adunik steel, Rastriya Ispat Nigam and Jindal.

Table 4.1

Nominal Growth Rate of different performance indicator of working capital of Ashok Leyland Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.850*	1.206	5.30*	-0.80*
	(0.1653)		(0.009)	(0.002)
Debtors	0.760*	1.852	7.70*	-0.10*
	(0.2552)		(0.014)	(0.003)
Cash	0.334*	1.316	-7.0*	-0.10*
	(0.7482)		(0.051)	(-0.40)
Other Current Asset	0.447*	1.860	6.00*	-0.20*
	(0.3645)		(0.20)	(0.004)
Creditors	0.343*	1.150	1.70*	0.30*
	(0.3167)		(0.656)	(-0.243)
Other Current Liabilities	0.732*	1.940	18.20*	0.60*
	(0.6500)		(0.036)	(0.007)

Notes: - '*' implies significant at 1% probability level, '**'implies significant at 5% probability level, '***'implies significant at 10% probability level. Figures under the $\bar{R}^2$ column indicate observed values of F statistics; all other figures within the parenthesis are standard errors. All the values of DW statistics indicate the absence of autocorrelation problem in the disturbance term. Growth rates are represented in the form of percent per annum. Growth Rate and Acceleration / Deceleration is calculated using the formula $\text{Ln} Y_t = a + bt + ct^2$, where b is the growth rate coefficient and c is the acceleration / deceleration rate coefficient

Table 4.2

Real Growth Rate of different performance indicator of working capital of Ashok Leyland Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.736* (0.1559)	1.127	1.00* (0.009)	-0.90* (0.002)
Debtors	0.359* (0.2423)	1.690	3.40* (0.013)	-0.20* (0.003)
Cash	0.621* (0.6140)	1.939	-12.00* (0.34)	-1.40* (0.007)
Other Current Asset	0.395* (0.3784)	1.777	1.70* (0.021)	-0.30* (0.004)
Creditors	0.495* (0.3264)	1.261	0.00* (0.018)	-0.40* (0.004)
Other Current Liabilities	0.610* (0.6395)	1.888	13.90* (0.035)	0.50* (0.007)

Note : Same as those Table 4.1

Table 4.3

Nominal Growth Rate of different performance indicator of working capital of Bajaj Auto
during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.934*	0.480	6.30*	-0.10*
	(0.1011)		(0.6)	(0.001)
Debtors	0.491*	1.809	5.90*	0.30*
	(0.3385)		(0.19)	(0.004)
Cash	0.565*	1.898	13.90*	0.08*
	(0.7119)		(0.39)	(0.008)
Other Current Asset	0.419*	1.363	3.40*	0.80*
	(0.3240)		(0.018)	(0.004)
Creditors	0.392*	1.848	1.70*	0.30*
	(0.5760)		(0.032)	(0.006)
Other Current Liabilities	0.478*	1.668	2.60*	0.30*
	(0.4830)		(0.027)	(0.005)

Note : Same as those Table 4.1

Table 4.4

Real Growth Rate of different performance indicator of working capital of Bajaj Auto during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (-) Deceleration (-)
Inventory	0.638* (0.0948)	1.590	2.00* (0.005)	-0.20* (0.001)
Debtors	0.433* (0.3531)	1.735	1.60* (0.019)	0.20* (0.004)
Cash	0.355* (0.7062)	1.934	9.60* (0.039)	0.70* (0.008)
Other Current Asset	0.596* (0.3219)	1.348	-0.90* (0.018)	0.70* (0.004)
Creditors	0.348* (0.5860)	1.800	-2.70* (0.032)	0.20* (0.006)
Other Current Liabilities	0.767* (0.4718)	1.713	-1.80* (0.026)	0.30* (0.005)

Note : Same as those Table 4.1

Table 4.5

Nominal Growth Rate of different performance indicator of working capital of EICHER during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.307* (0.6010)	1.688	-2.10* (0.033)	0.10* (0.007)
Debtors	0.682* (0.8159)	1.332	-20.70* (0.045)	0.30* (0.009)
Cash	0.454* (0.8104)	1.447	7.00* (0.1)	1.10* (0.02)
Other Current Asset	0.955* (0.1444)	1.865	11.10* (0.008)	0.10* (0.002)
Creditors	0.644* (0.8029)	1.670	1.40* (0.044)	0.30* (0.009)
Other Current Liabilities	0.447* (0.4454)	1.753	7.40* (0.025)	0.20* (0.005)

Note : Same as those Table 4.1

Table 4.6

Real Growth Rate of different performance indicator of working capital of EICHER during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (-) Deceleration (-)
Inventory	0.359* (0.6122)	1.650	-6.50* (0.034)	0.10* (0.007)
Debtors	0.756* (0.8317)	1.307	-25.00* (0.046)	0.20* (0.009)
Cash	0.542* (1.8200)	1.441	-11.40* (0.1)	-1.20* (0.02)
Other Current Asset	0.901* (0.1349)	1.968	6.70* (0.007)	-0.20* (0.001)
Creditors	0.417* (0.8089)	1.748	-5.70* (0.045)	-0.40* (0.009)
Other Current Liabilities	0.513* (0.4519)	1.717	3.00* (0.025)	-0.30* (0.005)

Note : Same as those Table 4.1

Table 4.7

Nominal Growth Rate of different performance indicator of working capital of Hindustan Motors during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.374*	0.506	-0.20*	0.80*
	(0.5523)		(0.03)	(0.006)
Debtors	0.356*	1.913	-4.90*	0.50*
	(0.5271)		(0.29)	(0.006)
Cash	0.387*	1.882	-3.30*	-2.90*
	(0.3529)		(0.074)	(0.015)
Other Current Asset	0.375*	1.653	-4.70*	0.40*
	(0.7853)		(0.43)	(0.009)
Creditors	0.386*	1.259	-9.00*	-0.70*
	(0.6329)		(0.35)	(0.007)
Other Current Liabilities	0.752*	1.702	10.50*	3.10*
	(0.6366)		(0.35)	(0.007)

Note: Same as that Table 4.1

Table 4.8

Real Growth Rate of different performance indicator of working capital of Hindustan Motors during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (-) Deceleration (-)
Inventory	0.620* (0.5499)	0.502	-11.50* (0.03)	-0.90* (0.006)
Debtors	0.489* (0.5302)	1.917	-9.30* (0.029)	0.40* (0.006)
Cash	0.362* (0.3450)	1.896	-7.60* (0.074)	-3.00* (0.015)
Other Current Asset	0.311* (0.7904)	1.634	-9.00* (0.044)	0.30* (0.009)
Creditors	0.610* (0.6292)	1.259	-13.30* (0.035)	-0.80* (0.007)
Other Current Liabilities	0.686* (0.6469)	1.760	6.20* (0.036)	3.00* (0.007)

Note : Same as those Table 4.1

Table 4.9

Nominal Growth Rate of different   performance indicator of working capital of Tata Motors during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.438*	1.926	0.00*	-0.40*
	(0.2020)		(0.011)	(0.002)
Debtors	0.228*	1.993	1.30*	-0.90*
	(0.4138)		(0.023)	(0.005)
Cash	0.369*	1.499	-32.50*	1.50*
	(0.2550)		(0.399)	(0.079)
Other Current Asset	0.398*	1.756	-2.50*	-6.00*
	(0.2436)		(0.013)	(0.003)
Creditors	0.287*	0.405	-1.50*	-1.00*
	(0.4054)		(0.022)	(0.004)
Other Current Liabilities	0.646*	1.919	-0.30*	-1.10*
	(0.2387)		(0.013)	0.003)

Note : Same as those Table 4.1

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Table 4.10

Real Growth Rate of different performance indicator of working capital of Tata Motors during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (-) Deceleration (-)
Inventory	0.665* (0.2046)	1.831	-4.40* (0.011)	-0.50* (0.002)
Debtors	0.372* (0.4008)	1.964	-3.00* (0.022)	-1.00* (0.004)
Cash	0.384* (0.3580)	1.403	-14.80* (0.13)	0.00* (0.026)
Other Current Asset	0.752* (0.2549)	1.676	-6.90* (0.014)	-0.60* (0.003)
Creditors	0.560* (0.0397)	1.971	-5.80* (0.022)	-1.10* (0.004)
Other Current Liabilities	0.783* (0.2241)	1.801	-4.00* (0.012)	-1.20* (0.002)

Note : Same as those Table 4.1

Table 4.11

Nominal Growth Rate of different performance indicator of working capital of Everest Cement during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.817*	1.660	6.60*	0.50*
	(0.1950)		(0.011)	(0.002)
Debtors	0.894*	1.494	5.30*	0.70*
	(0.1301)		(0.007)	(0.001)
Cash	0.367*	1.854	5.20*	0.10*
	(0.4171)		(0.052)	(0.005)
Other Current Asset	0.454*	1.524	47.00*	-0.30*
	(0.2913)		(0.016)	(0.003)
Creditors	0.357*	1.448	0.40*	-0.771*
	(0.1887)		(0.01)	(0.002)
Other Current Liabilities	0.871*	1.986	18.90*	0.60*
	(0.4397)		(0.024)	(0.005)

Note: Same as those Table 4.1

Table 4.12

Real Growth Rate of different performance indicator of working capital of Everest Cement
during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.854*	1.466	5.60*	-0.20*
	(0.1395)		(0.008)	(0.002)
Debtors	0.848*	0.495	13.60*	-0.40*
	(0.3437)		(0.019)	(0.004)
Cash	0.350*	1.888	-0.80*	0.10*
	(0.3687)		(0.02)	(0.004)
Other Current Asset	0.345*	1.928	3.10*	-0.20*
	(0.3212)		(0.018)	(0.003)
Creditors	0.861*	1.742	4.40*	0.00*
	(0.1058)		(0.006)	(0.001)
Other Current Liabilities	0.912*	1.951	14.80*	0.30*
	(0.2770)		(0.015)	(0.003)

Note : Same as those Table 4.1

Table 4.13

Nominal Growth Rate of different performance indicator of working capital of ACC during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.953*	1.939	4.30*	0.00*
	(0.0568)		(0.003)	(0.001)
Debtors	0.317*	1.170	2.90*	0.40*
	(0.2570)		(0.014)	(0.003)
Cash	0.753*	1.738	3.00*	-2.20*
	(0.3823)		(0.021)	(0.004)
Other Current Asset	0.681*	1.433	9.90*	0.40*
	(0.3993)		(0.022)	(0.004)
Creditors	0.787*	0.905	-8.00*	-1.30*
	(0.2057)		(0.011)	(0.002)
Other Current Liabilities	0.972*	0.862	10.50*	-0.10*
	(0.1085)		(0.006)	(0.001)

Note : Same as those Table 4.1

Table 4.14

Real Growth Rate of different performance indicator of working capital of ACC during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.344*	1.763	0.00*	-0.10*
	(0.0520)		(0.003)	(0.001)
Debtors	0.312*	1.139	-1.50*	0.30*
	(0.2753)		(0.015)	(0.003)
Cash	0.755*	1.763	-1.40*	-2.30*
	(0.3842)		(0.021)	(0.004)
Other Current Asset	0.367*	1.472	5.60*	0.30*
	(0.3930)		(0.022)	(0.004)
Creditors	0.864*	0.928	-5.20*	-1.40*
	(0.2072)		(0.011)	(0.002)
Other Current Liabilities	0.924*	0.923	6.20*	-0.20*
	(0.1075)		(0.006)	(0.001)

Note : Same as those Table 4.1

Table 4.15

Nominal Growth Rate of different performance indicator of working capital of Grasim Cement during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.317*	0.654	1.60*	-0.10*
	(0.4837)		(0.027)	(-0.086)
Debtors	0.366*	1.697	0.40*	0.00*
	(0.2326)		(0.013)	(0.003)
Cash	0.343*	0.890	-12.10*	-0.40*
	(0.8604)		(0.047)	(0.009)
Other Current Asset	0.362*	1.850	7.10*	0.30*
	(0.4930)		(0.027)	(0.005)
Creditors	0.339*	0.855	-4.30*	-5.00*
	(0.6865)		(0.038)	(0.007)
Other Current Liabilities	0.523*	0.532	5.30*	-0.60*
	(0.3173)		(0.017)	(0.003)

Note : Same as those Table 4.1

Table 4.16

Real Growth Rate of different performance indicator of working capital of Grasim Cement during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.495* (0.4886)	0.691	-2.80* (0.027)	-0.20* (0.005)
Debtors	0.425* (0.2447)	1.818	-4.00* (0.013)	0.00* (0.003)
Cash	0.530* (0.8669)	0.921	-16.40* (0.048)	-0.50* (0.009)
Other Current Asset	0.405* (0.5036)	1.835	2.70* (0.028)	0.20* (0.005)
Creditors	0.486* (0.6930)	0.891	-8.60* (0.038)	-0.60* (0.008)
Other Current Liabilities	0.560* (0.3202)	0.568	1.00* (0.018)	-0.60* (0.003)

Note : Same as those Table 4.1

Table 4.17

Nominal Growth Rate of different performance indicator of working capital of Dalmiya Cement during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration(+) Deceleration (-)
Inventory	0.474* (0.6443)	1.821	-11.20* (0.035)	0.01* (0.007)
Debtors	0.351* (0.6410)	1.684	2.20* (0.045)	2.20* (0.009)
Cash	0.364* (0.0767)	1.680	-9.20* (0.059)	0.60* (0.012)
Other Current Asset	0.461* (0.6489)	1.739	6.70* (0.036)	1.80* (0.007)
Creditors	0.637* (0.4912)	1.440	-10.50* (0.027)	0.90* (0.005)
Other Current Liabilities	0.484* (0.5069)	1.703	3.70* (0.028)	1.60* (0.006)

Note : Same as those Table 4.1

Table 4.18

Real Growth Rate of different performance indicator of working capital of Dalmiya Cement during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.666* (0.6324)	1.768	15.50* (0.035)	0.20* (0.007)
Debtors	0.508* (0.5920)	1.601	-2.40* (0.033)	2.10* (0.006)
Cash	0.388* (0.1620)	1.703	-13.50* (0.058)	-0.60* (0.012)
Other Current Asset	0.317* (0.6421)	1.697	2.40* (0.035)	1.70* (0.007)
Creditors	0.765* (0.4986)	1.487	-14.80* (0.027)	0.80* (0.005)
Other Current Liabilities	0.408* (0.4970)	1.632	-0.60* (0.027)	1.50* (0.005)

Note : Same as those Table 4.1

Table 4.19

Nominal Growth Rate of different performance indicator of working capital of JK Cement during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration(+) Deceleration(-)
Inventory	0.972*	1.552	12.20*	0.00*
	(0.1256)		(0.007)	(0.001)
Debtors	0.795*	1.173	5.20*	0.10*
	(0.1574)		(0.009)	(0.002)
Cash	0.326*	1.835	6.70*	0.10*
	(0.4859)		(0.207)	(0.005)
Other Current Asset	0.315*	1.778	3.40*	-1.10*
	(0.4881)		(0.027)	(0.005)
Creditors	0.350*	1.634	1.70*	0.40*
	(0.2062)		(0.011)	(0.002)
Other Current Liabilities	0.553*	1.724	9.50*	-14.10*
	(0.9630)		(0.328)	(0.065)

Note : Same as those Table 4.1

Table 4.20

Real Growth Rate of different performance indicator of working capital of JK Cement during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.949* (0.1109)	1.668	7.90* (0.006)	0.00* (0.001)
Debtors	0.316* (0.1638)	1.389	0.90* (0.009)	0.00* (0.002)
Cash	0.455* (0.4886)	1.837	2.40* (0.027)	6.13* (0.005)
Other Current Asset	0.353* (0.4995)	1.747	-0.90* (0.027)	-1.20* (0.005)
Creditors	0.436* (0.2109)	1.715	-2.60* (0.012)	-0.50* (0.002)
Other Current Liabilities	0.675* (0.7480)	1.645	40.50* (0.098)	-3.80* (0.019)

Note : Same as those Table 4.1

Table 4.21

Nominal Growth Rate of different performance indicator of working capital of Hindustan
Insecticides Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration(+) Deceleration (-)
Inventory	0.804* (0.1069)	1.695	3.50* (0.006)	-0.20* (0.001)
Debtors	0.355* (0.7981)	1.935	4.70* (0.044)	1.70* (0.009)
Cash	0.321* (0.9930)	0.993	-3.90* (0.055)	-2.20* (0.011)
Other Current Asset	0.604* (0.2965)	1.763	-5.80* (0.016)	-0.70* (0.003)
Creditors	0.437* (0.2494)	1.839	4.10* (0.014)	0.00* (0.003)
Other Current Liabilities	0.727* (0.1360)	1.464	3.20* (0.007)	0.40* (0.001)

Note : Same as those Table 4.1

Table 4.22

Real Growth Rate of different performance indicator of working capital of Hindustan

Insecticides Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.385*	1.899	-0.90*	-0.30*
	(0.1186)		(0.007)	(0.001)
Debtors	0.339*	1.910	0.30*	1.60*
	(0.8147)		(0.045)	(0.009)
Cash	0.345*	1.406	-8.20*	-2.30*
	(0.9846)		(0.054)	(0.011)
Other Current Asset	0.828*	1.753	-10.10*	-0.80*
	(0.2920)		(0.016)	(0.003)
Creditors	0.401*	1.905	-0.20*	-0.20*
	(0.2356)		(0.013)	(0.003)
Other Current Liabilities	0.306*	1.359	-1.10*	0.30*
	(0.1513)		(0.008)	(0.002)

Note : Same as those Table 4.1

Table 4.23

Nominal Growth Rate of different performance indicator of working capital of National
Fertilizer Corporation Limited during the period 2004-2005 to 2013-2014

Parameter	$\overline{R}^2$	DW	Growth Rate Percentage [k]	Acceleration(+) Deceleration (-)
Inventory	0.415*	1.756	1.80*	0.27*
	(0.1426)		(.070)	(0.004)
Debtors	0.963*	1.772	11.90*	0.60*
	(0.1330)		(0.025)	(0.004)
Cash	0.503*	1.942	3.50*	1.00*
	(0.4732)		(0.278)	(0.04)
Other Current Asset	0.908*	1.655	-2.80*	3.80*
	(0.3190)		(0.06)	(0.009)
Creditors	0.545*	1.144	-1.80*	-0.50*
	(0.1792)		(0.034)	(0.005)
Other Current Liabilities	0.857*	1.653	1.63*	2.11*
	(0.5214)		(0.099)	(0.014)

Note : Same as those Table 4.1

Table 4.24

Real Growth Rate of different performance indicator of working capital of National Fertilizer Corporation Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.659* (0.1142)	1.701	-2.80* (0.006)	0.00* (0.001)
Debtors	0.613* (0.3345)	1.554	7.30* (0.018)	0.30* (0.004)
Cash	0.457* (0.3711)	1.872	-12.20* (0.075)	-3.90* (0.015)
Other Current Asset	0.818* (0.6150)	1.842	8.30* (0.144)	-7.30* (0.028)
Creditors	0.928* (0.1441)	1.084	-8.50* (0.008)	-0.30* (0.002)
Other Current Liabilities	0.859* (0.4478)	1.756	17.50* (0.025)	1.30* (0.005)

Note : Same as those Table 4.1

Table 4.25

Nominal Growth Rate of different performance indicator of working capital of Paradeep Phosphate during the period 2004-2005 to 2013-2014

Parameter	$\overline{R}^2$	DW	Growth Rate Percentage [k]	Acceleration(+) Deceleration (-)
Inventory	0.501*	1.521	5.10*	0.10*
	(0.2798)		(0.015)	(0.003)
Debtors	0.606*	1.828	0.07*	0.70*
	(0.3648)		(0.02)	(0.004)
Cash	0.348*	1.103	4.50*	-2.00*
	(0.5674)		(0.086)	(0.017)
Other Current Asset	0.772*	1.556	0.20*	-2.40*
	(0.7519)		(0.041)	(0.008)
Creditors	0.480*	1.258	-6.40*	-1.20*
	(0.4982)		(0.027)	(0.005)
Other Current Liabilities	0.882*	1.948	33.90*	1.00*
	(0.7468)		(0.357)	(0.008)

Note : Same as those Table 4.1

Table 4.26

Real Growth Rate of different performance indicator of working capital of Paradeep Phosphate during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.339* (0.2733)	1.392	0.80* (0.015)	-6.60* (0.003)
Debtors	0.309* (0.3744)	1.874	2.70* (0.021)	0.70* (0.004)
Cash	0.367* (0.5620)	1.101	0.20* (0.086)	-0.20* (0.017)
Other Current Asset	0.711* (0.7507)	1.559	15.80* (0.041)	-2.50* (0.008)
Creditors	0.673* (0.5033)	1.276	-10.80* (0.028)	-1.30* (0.005)
Other Current Liabilities	0.847* (0.7559)	1.929	29.60* (0.042)	0.90* (0.008)

Note : Same as those Table 4.1

Table 4.27

Nominal Growth Rate of different performance indicator of working capital of Rastriyo
Chemical & Fertilizer Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration(+) Deceleration (-)
Inventory	0.489*	1.583	4.00*	0.00*
	(0.3618)		(0.02)	(0.004)
Debtors	0.636*	1.666	8.20*	0.10*
	(0.3539)		(0.019)	(0.004)
Cash	0.450*	1.702	6.30*	-2.30*
	(0.7822)		(0.043)	(0.009)
Other Current Asset	0.376*	1.385	-6.50*	-1.70*
	(0.7158)		(0.039)	(0.008)
Creditors	0.435*	1.556	4.80*	-1.20*
	(0.4788)		(0.048)	(0.005)
Other Current Liabilities	0.815*	1.868	14.30*	0.90*
	(0.4198)		(0.023)	(0.005)

Note : Same as those Table 4.1

Table 4.28

Real Growth Rate of different performance indicator of working capital of Rastriyo Chemical & Fertilizer Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.472* (0.3758)	1.552	-0.30* (0.021)	0.00* (0.004)
Debtors	0.348* (0.3718)	1.617	3.90* (0.02)	-7.80* (0.004)
Cash	0.408* (0.7694)	1.649	2.00* (0.042)	-2.40* (0.008)
Other Current Asset	0.553* (0.7041)	1.396	-10.80* (0.039)	-1.80* (0.008)
Creditors	0.333* (0.4780)	1.524	0.40* (0.026)	-1.30* (0.005)
Other Current Liabilities	0.679* (0.4234)	1.869	9.90* (0.023)	0.80* (0.005)

Note : Same as those Table 4.1

Table 4.29

Nominal Growth Rate of different performance indicator of working capital of DCM Sriram
Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration(+) Deceleration (-)
Inventory	0.919* (0.1302)	1.724	7.10* (0.007)	-0.40* (0.001)
Debtors	0.567* (0.3568)	1.896	5.20* (0.02)	1.00* (0.004)
Cash	0.747* (0.3963)	1.261	10.80* (0.022)	0.90* (0.004)
Other Current Asset	0.603* (0.3908)	1.102	8.00* (0.022)	-0.60* (0.004)
Creditors	0.456* (0.3320)	1.876	5.00* (0.018)	0.50* (0.004)
Other Current Liabilities	0.817* (0.5961)	1.827	25.60* (0.042)	1.50* (0.008)

Note : Same as those Table 4.1

Table 4.30

Real Growth Rate of different performance indicator of working capital of DCM Sriram Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.681* (0.1398)	1.657	2.80* (0.008)	-0.40* (0.002)
Debtors	0.286* (0.3673)	1.938	0.80* (0.02)	0.90* (0.004)
Cash	0.520* (0.4029)	1.307	6.40* (0.022)	0.80* (0.004)
Other Current Asset	0.540* (0.4057)	1.082	3.70* (0.022)	-0.60* (0.004)
Creditors	0.351* (0.3449)	1.959	0.60* (0.019)	0.50* (0.004)
Other Current Liabilities	0.658* (0.6826)	1.564	16.40* (0.038)	0.40* (0.007)

Note : Same as those Table 4.1

Table 4.31

Nominal Growth Rate of different performance indicator of working capital of Bharat Earth Movers Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.916* (0.1605)	1.599	8.70* (0.009)	-0.30* (0.002)
Debtors	0.530* (0.2134)	1.371	1.10* (0.012)	-0.80* (0.002)
Cash	0.673* (0.6727)	0.720	-14.90* (0.037)	-1.50* (0.007)
Other Current Asset	0.558* (0.4581)	1.564	9.20* (0.025)	0.10* (0.005)
Creditors	0.802* (0.2184)	1.415	-7.20* (0.012)	-0.40* (0.002)
Other Current Liabilities	0.703* (0.9305)	1.690	23.90* (0.051)	1.20* (0.01)

Note: Same as that Table 4.1

Table 4.32

Real Growth Rate of different performance indicator of working capital of Bharat Earth Movers Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.783* (0.1499)	1.776	4.40* (0.008)	-0.40* (0.002)
Debtors	0.662* (0.2235)	1.364	-3.30* (0.012)	-0.90* (0.002)
Cash	0.768* (0.6732)	0.769	-19.30* (0.037)	-1.60* (0.007)
Other Current Asset	0.475* (0.4476)	1.608	4.90* (0.025)	0.00* (0.005)
Creditors	0.901* (0.2338)	1.333	-11.60* (0.013)	-0.40* (0.003)
Other Current Liabilities	0.612* (0.9217)	1.712	19.60* (0.051)	1.20* (0.01)

Note : Same as those Table 4.1

Table 4.33

Nominal Growth Rate of different performance indicator of working capital of Bharat Heavy Electricals Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.946*	1.228	8.10*	-0.60*
	(0.1233)		(0.007)	(0.001)
Debtors	0.984*	1.514	9.30*	-0.40*
	(0.0740)		(-0.004)	(0.001)
Cash	0.697*	1.356	5.20*	-0.60*
	(0.2335)		(0.013)	(0.003)
Other Current Asset	0.689*	1.287	4.00*	-0.50*
	(0.1872)		(0.01)	(0.002)
Creditors	0.400*	1.917	0.00*	-1.10*
	(0.3637)		(0.02)	(0.004)
Other Current Liabilities	0.901*	1.919	16.60*	-0.30*
	(0.3316)		(0.018)	(0.004)

Note : Same as those Table 4.1

Table 4.34

Real Growth Rate of different performance indicator of working capital of Bharat Heavy Electricals Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.880* (0.1099)	1.415	3.80* (0.006)	-0.60* (0.001)
Debtors	0.957* (0.0697)	1.315	4.90* (0.004)	-0.40* (0.001)
Cash	0.386* (0.2427)	1.299	0.90* (0.013)	-0.70* (0.003)
Other Current Asset	0.471* (0.1750)	1.341	-0.30* (0.01)	-0.60* (0.002)
Creditors	0.562* (0.3699)	1.870	-4.40* (0.02)	-1.20* (0.004)
Other Current Liabilities	0.837* (0.3255)	1.843	12.30* (0.018)	-0.40* (0.004)

Note : Same as those Table 4.1

Table 4.35

Nominal Growth Rate of different performance indicator of working capital of Tractor India Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.461*	1.931	-1.10*	-0.20*
	(0.3014)		(0.017)	(0.003)
Debtors	0.305*	1.810	-2.90*	-0.50*
	(0.3369)		(0.019)	(0.004)
Cash	0.557*	1.281	7.30*	1.00*
	(0.4362)		(0.024)	(0.005)
Other Current Asset	0.672*	1.466	3.60*	0.40*
	(0.1659)		(0.009)	(0.002)
Creditors	0.433*	1.799	-5.50*	-0.10*
	(0.3363)		(0.019)	(0.004)
Other Current Liabilities	0.960*	1.732	11.70*	0.70*
	(0.1202)		(0.008)	(0.002)

Note : Same as those Table 4.1

Table 4.36

Real Growth Rate of different performance indicator of working capital of Tractor India
Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.390*	1.381	-0.40*	0.20*
	(0.3660)		(0.02)	(0.004)
Debtors	0.503*	1.752	-7.00*	-0.20*
	(0.3862)		(0.021)	(0.004)
Cash	0.433*	1.355	0.30*	0.90*
	(0.4451)		(0.025)	(0.005)
Other Current Asset	0.394*	1.607	-0.70*	0.30*
	(0.1497)		(0.008)	(0.002)
Creditors	0.734*	1.725	-9.80*	-0.20*
	(0.3436)		(0.019)	(0.004)
Other Current Liabilities	0.939*	1.763	6.80*	0.50*
	(0.1117)		(0.006)	(0.001)

Note : Same as those Table 4.1

Table 4.37

Nominal Growth Rate of different performance indicator of working capital of ISGEC Heavy Engineering Limited during the period 2004-2005 to 2013-2014

Parameter	$\overline{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.779*	1.141	5.50*	-0.50*
	(0.1858)		(0.01)	(0.002)
Debtors	0.959*	1.448	8.90*	-0.40*
	(0.1137)		(0.006)	(0.001)
Cash	9.000*	0.761	21.30*	0.70*
	(0.4298)		(0.024)	(0.005)
Other Current Asset	0.843*	1.317	8.80*	0.70*
	(0.2413)		(0.013)	(0.003)
Creditors	0.550*	1.725	4.40*	-0.50*
	(0.2582)		(0.014)	(0.003)
Other Current Liabilities	0.904*	1.917	16.40*	0.90*
	(0.3328)		(0.018)	(0.004)

Note : Same as those Table 4.1

Table 4.38

Real Growth Rate of different performance indicator of working capital of ISGEC Heavy Engineering Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.419* (0.1839)	1.129	1.10* (0.01)	-0.50* (0.002)
Debtors	0.879* (0.1151)	1.532	4.60* (0.006)	-0.50* (0.001)
Cash	0.845* (0.4231)	0.684	16.90* (0.023)	0.60* (0.005)
Other Current Asset	0.632* (0.2329)	1.359	4.40* (0.013)	0.60* (0.003)
Creditors	0.349* (0.2471)	1.642	0.10* (0.014)	-0.60* (0.003)
Other Current Liabilities	0.836* (0.3364)	1.912	12.10* (0.019)	0.80* (0.004)

Note : Same as those Table 4.1

Table 4.39

Nominal Growth Rate of different performance indicator of working capital of Heavy Engineering Corporation Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.873*	1.511	6.60*	0.00*
	(0.1507)		(0.008)	(0.002)
Debtors	0.824*	1.194	9.80*	-0.40*
	(0.2740)		(0.015)	(0.003)
Cash	0.517*	1.845	-6.90*	-1.50*
	(0.0526)		(0.058)	(0.011)
Other Current Asset	0.769*	1.214	4.90*	0.10*
	(0.1567)		(0.009)	(0.002)
Creditors	0.564*	1.788	-5.50*	-1.00*
	(0.3754)		(0.021)	(0.004)
Other Current Liabilities	0.599*	1.550	3.30*	0.90*
	(0.2526)		(0.014)	(0.003)

Note : Same as those Table 4.1

Table 4.40

Real Growth Rate of different performance indicator of working capital of Heavy Engineering Corporation Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.429* (0.1407)	1.622	2.30* (0.008)	0.00* (0.002)
Debtors	0.644* (0.2546)	1.234	5.50* (0.014)	-0.50* (0.003)
Cash	0.300* (1.0410)	1.815	-11.30* (0.057)	-1.60* (0.011)
Other Current Asset	0.309* (0.1427)	1.284	0.50* (0.008)	-8.50* (0.002)
Creditors	0.767* (0.3684)	1.765	-9.90* (0.02)	-1.10* (0.004)
Other Current Liabilities	0.458* (0.2400)	1.645	-1.10* (0.013)	0.80* (0.003)

Note : Same as those Table 4.1

Table 4.41

Nominal Growth Rate of different performance indicator of working capital of Tata Steel
during the period 2004-2005 to 2013-2014

Parameter	$\overline{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.966*	0.968	6.50*	0.00*
	(0.7413)		(0.004)	(0.001)
Debtors	0.484*	1.762	1.80*	0.30*
	(0.2256)		(0.018)	(0.002)
Cash	0.341*	1.043	9.20*	-2.00*
	(0.9725)		(0.054)	(0.011)
Other Current Asset	0.355*	1.508	3.80*	-1.90*
	(0.8173)		(0.045)	(0.009)
Creditors	0.783*	1.980	5.70*	-0.20*
	(0.1797)		(0.01)	(0.002)
Other Current Liabilities	0.868*	1.837	14.90*	-0.20*
	(0.4377)		(0.019)	(0.004)

Note : Same as those Table 4.1

Table 4.42

Real Growth Rate of different performance indicator of working capital of Tata Steel during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.698* (0.0828)	1.193	2.20* (0.005)	0.00* (0.001)
Debtors	0.535* (0.2378)	1.846	-2.50* (0.013)	0.30* (0.003)
Cash	0.241* (0.9699)	1.033	4.90* (0.053)	-2.10* (0.011)
Other Current Asset	0.331* (0.8246)	1.546	-0.60* (0.045)	-1.90* (0.009)
Creditors	0.558* (0.1845)	1.960	1.40* (0.01)	-0.30* (0.002)
Other Current Liabilities	0.762* (0.3489)	1.821	10.60* (0.019)	-0.20* (0.004)

Note : Same as those Table 4.1

Table 4.43

Nominal Growth Rate of different performance indicator of working capital of Steel Authority of India Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.344*	1.582	4.50*	0.20*
	(0.4521)		(0.025)	(0.005)
Debtors	0.436*	1.891	7.90*	-0.50*
	(0.5054)		(0.079)	(0.005)
Cash	0.462*	1.636	-8.10*	-1.10*
	(0.9273)		(0.051)	(0.01)
Other Current Asset	0.465*	1.566	5.90*	-0.80*
	(0.6742)		(0.037)	(0.007)
Creditors	0.394*	1.942	-3.70*	-0.70*
	(0.3408)		(0.019)	(0.004)
Other Current Liabilities	0.747*	0.995	8.90*	0.40*
	(0.3123)		(0.017)	(0.003)

Note : Same as those Table 4.1

Table 4.44

Real Growth Rate of different performance indicator of working capital of Steel Authority of India Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.366*	1.533	0.20*	0.20*
	(0.4646)		(0.026)	(0.005)
Debtors	0.304*	1.829	3.50*	-0.60*
	(0.4938)		(0.027)	(0.005)
Cash	0.376*	1.613	-12.50*	-1.20*
	(0.9361)		(0.052)	(0.01)
Other Current Asset	0.430*	1.607	1.60*	-0.90*
	(0.6612)		(0.036)	(0.007)
Creditors	0.697*	1.998	-8.00*	-0.80*
	(0.3452)		(0.019)	(0.004)
Other Current Liabilities	0.416*	0.890	4.60*	0.30*
	(0.3072)		(0.017)	(0.003)

Note : Same as those Table 4.1

Table 4.45

Nominal Growth Rate of different performance indicator of working capital of Adhunik Metaliks Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.975*	1.227	14.00*	-0.90*
	(0.1404)		(0.008)	(0.002)
Debtors	0.696*	1.876	10.20*	-0.10*
	(0.3894)		(0.021)	(0.004)
Cash	0.301*	1.719	-20.80*	-0.50*
	(0.6889)		(0.12)	(0.024)
Other Current Asset	0.722*	1.981	10.90*	0.00*
	(0.3921)		(0.022)	(0.004)
Creditors	0.929*	1.632	10.20*	-0.40*
	(0.1722)		(0.009)	(0.002)
Other Current Liabilities	0.853*	1.793	26.20*	2.30*
	(0.7090)		(0.39)	(0.008)

Note : Same as those Table 4.1

Table 4.46

Real Growth Rate of different performance indicator of working capital of Adhunik Metaliks Limited during the period 2004-2005 to 2013-2014

Parameter	$\overline{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.950* (0.1490)	1.441	9.60* (0.008)	-0.90* (0.002)
Debtors	0.397* (0.3827)	1.828	5.80* (0.021)	-0.20* (0.004)
Cash	0.311* (0.1870)	1.722	-25.10* (0.12)	-0.60* (0.024)
Other Current Asset	0.441* (0.3967)	1.950	6.50* (0.022)	-0.10* (0.004)
Creditors	0.835* (0.1686)	1.625	5.80* (0.009)	-0.50* (0.002)
Other Current Liabilities	0.802* (0.7205)	1.846	21.90* (0.04)	2.20* (0.008)

Note : Same as those Table 4.1

Table 4.47

Nominal Growth Rate of different performance indicator of working capital of Rastriya Ispat
Nigam Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.847*	1.893	7.50*	-0.20*
	(0.1927)		(0.011)	(0.002)
Debtors	0.757*	1.732	13.60*	0.30*
	(0.4536)		(0.025)	(0.005)
Cash	0.883*	1.582	-14.30*	-2.20*
	(0.3924)		(0.022)	(0.004)
Other Current Asset	0.681*	1.023	6.50*	0.00*
	(0.2567)		(0.014)	(0.003)
Creditors	0.372*	1.415	-2.30*	-1.00*
	(0.6215)		(0.034)	(0.007)
Other Current Liabilities	0.916*	1.736	18.90*	-0.20*
	(0.3421)		(0.019)	(0.004)

Note : Same as those Table 4.1

Table 4.48

Real Growth Rate of different performance indicator of working capital of Rastriya Ispat Nigam Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.521* (0.1883)	1.779	3.20* (0.01)	-0.30* (0.002)
Debtors	0.564* (0.4597)	1.764	9.30* (0.025)	0.20* (0.005)
Cash	0.917* (0.3947)	1.601	-18.60* (0.022)	-2.30* (0.004)
Other Current Asset	0.424* (0.2764)	1.008	2.20* (0.015)	-0.10* (0.003)
Creditors	0.322* (0.6283)	1.392	-6.70* (0.035)	-1.10* (0.007)
Other Current Liabilities	0.859* (0.3520)	1.707	14.50* (0.019)	-0.30* (0.004)

Note : Same as those Table 4.1

Table 4.49

Nominal Growth Rate of different performance indicator of working capital of Jindal Steel & Power Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.960*	1.784	9.50*	-0.20*
	(0.1176)		(0.006)	(0.001)
Debtors	0.962*	1.831	11.30*	0.40*
	(0.1367)		(0.008)	(0.001)
Cash	0.315*	1.562	-5.10*	0.80*
	(0.8117)		(0.1)	(0.02)
Other Current Asset	0.866*	1.918	13.40*	0.40*
	(0.3163)		(0.017)	(0.003)
Creditors	0.539*	1.703	-4.60*	-1.40*
	(0.8117)		(0.045)	(0.009)
Other Current Liabilities	0.687*	1.965	29.90*	2.20*
	(0.2360)		(0.068)	(0.013)

Note : Same as those Table 4.1

Table 4.50

Real Growth Rate of different performance indicator of working capital of Jindal Steel & Power Limited during the period 2004-2005 to 2013-2014

Parameter	$\bar{R}^2$	DW	Growth Rate Percentage [k]	Acceleration (+) Deceleration (-)
Inventory	0.880* (0.1194)	1.831	5.20* (0.007)	-0.30* (0.001)
Debtors	0.923* (0.1232)	1.982	7.00* (0.007)	0.30* (0.001)
Cash	0.325* (0.1825)	1.550	-9.40* (0.1)	0.70* (0.02)
Other Current Asset	0.756* (0.3050)	1.977	9.10* (0.017)	0.30* (0.003)
Creditors	0.337* (0.8189)	1.685	-8.90* (0.045)	-1.40* (0.009)
Other Current Liabilities	0.620* (0.2277)	1.982	25.50* (0.068)	2.10* (0.013)

Note : Same as those Table 4.1

CHAPTER V

WORKING CAPITAL MANAGEMENT OF SELECTED INDUSTRIES: MEASUREMENT OF FIVE INDUSTRIS PERFORMANCE FROM ACCOUNTING ANGLE

Ratio Analysis:

This is the most important tool available to financial analysis for this work. An accounting ratio is the mathematical relationship between two interrelated accounting figures. The figures have to be interrelated because no useful purpose will be served if ratio is calculated between two figures that are not at all related to each other. The ratio analysis is one of the most useful and effective methods of analysis of financial statements. A ratio can be defined as an indicator of the relationship between two variables having either cause and effect relationship or connected with each other in some or the other manner. Those two variables selected from the balance sheet and from the profit and loss account. The usefulness of the ratio lies in the fact that the data to be analyzed are reduced and expressed in a simple form that makes it very convenient to study and evaluate the relationship between various related items as well as changes that have taken place. In our study we had calculated many ratios to determine the efficiency, liquidity and profitability of each company. Calculated the value of debtor's turnover, inventory turnover working capital turnover and cash conversion cycle to determine the efficiency of each company. Current ratio, quick ratio and debt equity ratio used for finding out the liquidity position of the selected companies. We had calculated net profit percentage, ROA, ROE and PE ratio to determine performance of profitability. We calculated

the value of cost of equity; also consider prime lending rate by Reserve Bank of India to determine how the inflation affects on the selected companies financial activity.

Formula used for this study:

Debtors Turnover Ratio   : $\dfrac{\text{Net credit sale}}{\text{Average Debtors}}$

Inventory Turnover Ratio   : $\dfrac{\text{Cost of goods sold}}{\text{Average inventory}}$

Working Capital Turnover Ratio   : $\dfrac{\text{Sales}}{\text{Average Working Capital}}$

Current Ratio   : $\dfrac{\text{Current Asset}}{\text{Current Liability}}$

Quick Ratio   : $\dfrac{\text{(Current asset-Stock-prepaid expense)}}{\text{(Current Liability-Bank Overdraft)}}$

Net Profit Ratio   :   (Net profit / Net sales) x 100

Debt Equity Ratio   : $\dfrac{\text{External Borrowing}}{\text{Total Equity}}$

Cost of Equity   : $\dfrac{\text{Earning per Share}}{\text{Market price per Share}}$ x100

Cash Conversion Cycle   :   (Debtors Velocity + Inventory Velocity)- Creditors Velocity

Cost of Equity   : $\dfrac{\text{Dividend in Next Period}}{\text{Current Market Price}}$ +growth rate

Price Earnings Ratio   : $\dfrac{\text{Market Value per Share}}{\text{Earnings per share}}$

Return on Asset   :   Net Profit/Total Asset

Return on Equity   :   Net Profit/ Total Equity (Book Value)

5.1. ANALYSIS OF RATIOS OF AUTOMOBILE INDUSTRY

i)   Ashok Leyland Limited ;

Financial position and analysis of different components of working capital of Ashok Leland Limited has been presented in table 5.1. Average debtors turnover ratio is 11.02 times during the study period. From the average debtors turnover ratio the debtors velocity has been calculated which is 1.08 months (12 months / 11.02) suggest that credit available to the customers is 1.08 months which is quite high among the automobile industries. Average inventory turnover ratio is 6.63 times, the lowest inventory turnover ratio is 5.11 times in the year 2009-2010 and highest is 8.36 times in the year 2013-2014. The company is able to increase the inventory turnover ratio over the years during the study period. The inventory velocity (12 months/6.63) is 1.80 months, which suggest that the production is carried on without considering its demand since the finished stock are in hand on an average of 2 months. Production policy cannot be changed but it can obviously try to increase its sales and to increase the inventory turnover ratio. When the stocks are held in hand then it is adversely affecting the profitability position of the company. Current ratio is 1.28; this ratio is decreasing from 1.85 to 0.86 from the year 2004-2005 to 2013-2014 respectively, liquidity and profitability are negatively related but if liquidity is reduced, then the chances of not meeting the short term current liabilities may also increase. Considering the profitability ratio i.e. NP, ROA and ROE of the company shows that the performance is decreasing during the study period. The debt-equity ratio suggests that the company is not taking the advantage of leverage may be due to the fact that the Prime Lending Rate is higher than cost of equity as well as the

NP ratio is very low. From the fundamental analysis shows that the financial performance is not satisfactory but P/E is quite high which suggests that the share of the company is highly quoted in the stock exchange.

i) **Bajaj Auto Limited ;**

Scrutinized result of the financial position and analysis of different components of working capital of Bajaj Auto Limited is represented in the table 5.2. From that table it is observed that average debtors turnover ratio is 31.16 times which is almost same as industry average and inventory turnover ratio found 31.74 times is much higher than the industry average and cash conversion cycle is 1 week. Performance of debtors and inventory movement is better or fast moving comparing with average of selected five companies of automobile industries, velocity of debtors (12 months / 31.16) and inventory(12 months / 31.74)   are calculated 0.39 month and 0.38 month representing 10 days which indicates that the company's credit policy to the customers and movement of stock maintaining very efficiently. Current ratio is 0.97 times, quick ratio is 0.85 times established the fact that these two ratios are negatively related with net profit, lower liquidity ratio signifies that the company is pursuing aggressive working capital management and failure of payment of current liabilities in time. When we consider other profitability ratio we found that average ROA and ROE is 7.12% and 17.14% respectively. It is also found that there is some fluctuation of net profit percentage during the study period, maximum profit earned by the company in the year 2010-2011 is 20.88% and minimum profit earned in the year 2008-2009 is 7.76%. On the other hand PE ratio of this company is 20.95 indicates that the company's share are trading at low price. There was a major change in the year 2008-2009 in PE ratio which is found 38.98, other than that PE ratio is always in between 6.15% to 26.22%. Cost of equity is 6.06% which is lower than industry average, cost of equity

is lower than prime lending rate, due to this result company are not using external fund and is performing better with their own funding.   After analyzing all the relevant ratios we can conclude as Bajaj Auto is the best profit earnings company within the selected five companies and able to manage all the accounting aspect efficiently.

ii)   **Eicher Motors Limited ;**

Financial performance of all the selected components of working capital has been presented in the table 5.3. It is observed in the table that, average debtors turnover ratio is 105.33 times which very high and the velocity of debtors (12 months / 105.33)   found only 0.11 month which is very minimum that means the company are not interested to sale the product on credit and reflection of this policy is found from the year 2005-2006 onward the company gradually increased its debtors turnover ratio and within our study period it reached 265.33 times. We also observed from the financial report of the company that Mr. Siddartha Lal was appointed as CEO in the year 2005-2006 who is a talented automotive engineer from the University of Leeds, after his appointment we detect that the performance of the company has changed. Inventory turnover ratio found 14.25 times and inventory velocity (12 months /14.25) is 0.84 months which are almost stable during our study period, which also exhibit that the company holding stock in hand for less than four weeks and they are able to control the production process accordingly. Average working capital turnover ratio is 8.25 times and average net profit ratio is 10.80%, in the year 2007-2008 working capital turnover ratio was highest 19.69 times because we found that in the year 2008-2009 suddenly cash and bank balance increased to Rupees 1260.1 crore which was only Rupees51.90 crore during the year 2007-2008. Net profit ratio was also found lowest 2.11 % in the year 2007-2008, we also found that after the year 2008-2009 working capital turnover become downwards moving and profit increased

towards higher value, because the company is able to control excess amount of cash in hand. So the amount of working capital and profit are negatively related for Eicher motors. Actual performance is very good comparing with average of selected five companies of automobile industries performance. Cash conversion is same as industry average. Current ratio is 1.43; quick ratio is 1.17 represents that company are well aware about performance of those ratios. Debt equity ratio is 0.27 and cost of equity is 4.18% on an average for the study period is the reflection of, that the company is not using the outsiders found as the PLR is found higher than cost of equity, but they are able to manage the internal fund efficiently. When we consider other two profitability ratio ROA and ROE is 20.82% and 47.14% respectively which is higher than average industry profitability ratios except ROE which is little more comparing with industry average. On the other hand PE ratio of this company is 42.82 in the year 213-2014 which helps the company to get appropriate price quote the for the share market, but there was a major change in the year 2008-2009 in PE ratio where suddenly increased the market value of the share of that company. All these observation wrap up that Eicher Motors Limited is a profitable company and perform better in every aspect within the selected five companies of automobile industries and the role of the CEO is very positive.

iii) **Hindustan Motors Limited;**

Analysis of different components and financial position and of working capital of Hindustan Motors Limited has been presented in table 5.4. We do not found any specific trend due to poor performance of the company which leads to closer of the company. Within the study period we found in the table that average debtors turnover ratio is 22.69 times and the debtors velocity was (12 months /22.69) 0.53 month which represents that collection from debtors taking two weeks of time, we also found that cash conversion cycle is only 1 week but

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these turnover ratio has made no effect on the profit earning, because we found that the company suffered from the loss of 2.97% on an average for our study period. Inventory turnover ratio found 9.41times; working capital turnover ratio is 3.91times, performance is good comparing with the average of selected five companies of automobile industries. Current ratio is 1.67 times, quick ratio is 1.29 times and debt equity ratio is 0.62 are also even better comparing with industry average. When we consider profitability ratio we found that average net loss for our study period is (-) 2.97%, ROA is found poor (-) 5.13% and ROE is (-) 6.90%. Surprisingly there is no such stability found in the area of main objective of the business, because company face large percentage of loss in the 2005-2006 and 2012-2013 which are (-) 9.58 and (-) 9.85 respectively. Other than those two years other five years also suffered fromloss, only the year 2006-2007 and 2007-2008 generates profit 1.99% and 4.38%. In the year 2010-2011 earns a very little profit percentage which is 0.11%. Considering those net profit ratio related analysis it is clearly revealed that presently Hindustan Motors is basically a loss making company. Cost of equity is negative 8.05%. Considering all the facts revealed from the analysis we can clearly stated that Hindustan Motors a loss making company and not performed good comparing with the other four company within the automobile industry.

iv) **Tata Motors Limited ;**

Performance and financial aspect of different components of working capital is presented in the table 5.5. From that table we found that average debtor's turnover ratio is 23.41timesand the velocity of debtors (12 months/23.41) is 0.51 months i.e. two weeks required to collect payment from the debtors on an average. This result revealed that the company maintains credit policy very efficiently, it moves fast and in a stable manner. It is also observed that from the year 2008-2009 debtors' turnover suddenly decreased. When we consider inventory turnover

ratio we found 12.89 times on an average and the velocity observed 0.93 month which is almost one month, because of the company holding stock in hand for long period which directly affecting cash conversion cycle, working capital and profit also. Inventory turnover of Tata Motors Limited is stable during the study period and always stand between 11.70 times to 14.44 times, we furthermore found in the year 2013-2014 it become 9.78 times. Current ratio is 1.07, quick ratio is 0.81 and debt equity ratio is 1.06 which indicates that the company is using external sources to fund its working capital in spite of higher PLR. Other profitability ratio ROA and ROE is 50.26% and 158.49% respectively which is higher than average industry profitability ratios. We also found that there is stable profit earnings trend except in the year 2010-2011 net profit percentage decreased to 3.77%. Another important observation is, in the year 2011-2012 company earned maximum net profit within the selected ten years of period. On the other hand ROA and ROE is also in good percentage indicates that the company is able to utilize the asset and funds very efficiently. Average PE ratio of this company is 107.38 which are the highest within the five selected company, noticeable that the market response and return both are very good position resulting high value quote of the company. We also found that the year 2008-2009 is the specific year when Tata Motors acquired Jaguar and from that year share quoted become high and which continued up to the year 2013-2014 except in the year 2010-2011, is the reflection of the positive result for acquiring jaguar.

5.2 ANALYSIS OF RATIOS OF CEMENT INDUSTRY

i)   Everest Cement Industries;

Table 5.6 presents the performance of financial result of different components of working capital. The table shows average debtors turnover ratio is 33.25times and the debtors velocity

calculated (12 months/ 33.25) 0.36 month i.e.10 days only proves debtors moves very fast even we found in the year 2005-2006 turnover is 74.53 times. Debtor's turnover is the indication of efficient debtor's management. Inventory turnover ratio stood 4.94 times and inventory velocity is (12 months/4.94) 2.43 months or almost two and half months which may consider as an example of bad inventory management comparing with other selected companies of cement industries. Working capital turnover ratio changed its nature from the year 2010-2011 where we found current assets increased and even working capital turnover arrive at 43.54 in the year 2011-2012, this indicates that the company is unable current asset by a proper way. We also found that outstanding expense bank overdraft is also increased which directly affected quick ratio because current ratio is always positive and almost stable within the study period, for the same period we found quick ratio become negative, this is only occur because the amount of bank overdraft and outstanding expenses are not within the control of the company. Cash conversion cycle is also affected due to those reasons. When we consider profitability ratio we found that average net profit is 5.42% ROA and ROE is 7.18% and 14.89% respectively which is lower than average industry profitability ratios but ROE perform better than average industry average. It is also found that there is no major fluctuation of net profit percentage for the study period only exception in the year 2005-2006 where the net profit ratio found 12.30% which was the highest profit percentage within the study period ,and debtors turnover ratio was found highest for that year. In the year 2013-2014 profit turnover shift downhill to 0.88% which was the lowest profit percentage. In the year 2005-2006 we found that cost of equity was maximum 18.42% , the company did not use external fund and debt capital in its capital structure except in the year 2008-2009 . Everest is the only company within the selected five cement company whose cost of equity is higher than prime lending rate

as the prime lending rate average is 12.62% since PLR is less than cost of equity so the company could have used debt capital to finance its working capital and then the return to equity would have been increase. On the other hand PE ratio of this company is fluctuating very much due to the fluctuation of financial performance of the company. After considering all the ratios we can finish off as Everest Cement is a profitable industry and handles all the accounting aspect efficiently except cost of equity and current liabilities.

ii)   ACC Limited;

Performance of financial activities of ACC Limited is revealed from the Table 5.7. From that table we found average debtors turnover ratio is 32.65 times and velocity of debtors is 0.37 month or 12 days established frequent debtors movement. Inventory turnover ratio 15.17 times and inventory velocity calculated 0.79 month or 23 days is the reflection of such kind of inventory management where the inventory remains in stock for long time. Working capital turnover ratio found 10.95 times and stable in nature but it also indicates that there is large volume of current asset always remains idle. Cash conversion cycle is 1 weeks. Comparing with selected five companies of cement industries average performance of ACC Cement perform better, specifically debtors turnover and inventory turnover ratio moves first. It is also found that there is not much fluctuation in debtors and inventory turnover of this company within the selected ten years time period, from the year 2004-2005 inventory turnovers gradually moves upwards, from the year 2010-2011 inventory turnover start moving downward, though it pulls through from the year 2011-1012. Quick ratio is 0.06 on an average for the study period but we also noticed that there was short time liability like bank overdraft outstanding expenses are maximum in amount which is the reason for negative quick ratio from the year 2004-2005 to 2009-2010 after these years company are able to control these kind of

short time liability in efficient manner as a result quick ratio become positive. Debt equity ratio is 0.22 which are lower than industry average. When we consider profitability ratio we found that average net profit ratio is 15.18% ROA and ROE is 13.12% and 22.89%. It is also found that from the year 2011-2012 profit percentage decreasing as we found that operating profit percentage gradually decreased from 24% against the sales amount Rupees 7770 Crore in the year 2010-2011 to 13% against the sales amount Rupees 11481 Crore at the end of the year 2013-2014.Surprisingly there was no such affect of operating profit found on the PE ratio of this company, because the company may suffer from lower amount of profit from the year 2011-2012 but due to the goodwill of the company there was no such affect found in the share market as we found that quotation of the share has increased. Cost of equity is 6.22% is lower than prime lending rate indicates that the company are not using external fund due to the low percentage to cost of equity. Finally we can conclude as ACC Cement is a profitable industry and handles all the accounting aspect efficiently.

iii)   Grasim Cement Industries;

It is observed from the Table 5.8 that average debtors turnover ratio is 13.73 times and inventory turnover ratio 13.97 times, both turnover are good in nature and affects in right way to the profitability of the company because we found that average net profit ratio of the company is 16.64% and the profit is stable for the study period, can be awarded as the best profit earning company within the selected five cement companies. But it is also observed that debtors turnover and inventory turnover only in the year 2011-2012 both turnover was decreased. Working capital turnover ratio is 10.19 is found with fluctuation because some of the year we tracked that bank over draft, outstanding expenses are high in amount which influence to found quick ratio negative for five years during the study period. Cash conversion

cycle is 3 weeks is comparatively less efficient comparing with the industry average. Current ratio is 1.85, quick ratio is 0.28 and debt equity ratio is 0.42 which are almost same as industry average. When we consider other profitability ratio we found that average ROA and ROE is 10.96% and 18.57% respectively which is higher than average industry profitability ratios. On the other hand average PE ratio of this company is 18.17 and stable for the study period except for the year and gradually increasing from the year which are higher than industry average. Cost of equity is 6.72% which are lower than industry average. An important observation is when we consider the financial result altogether of cost of equity, P/E ratio and net profit. In spite of high net profit ratio the PE ratio is low which suggests that share price are quoted in the stock exchange below per, in the year 2007-2008. Cost of equity increased to 18.34% but P/E ratio decreased to 5.45 which is the lowest PE ratio within the study period but profit found highest (21.26%) for that year is clearly revealed that borrowing from external funds is also a considerable factor for the share market quote. After critically analysis of the financial performance of the company we found that Everest Cement is a profitable industry and handles all the accounting aspect efficiently.

iv)   Dalmiya Cement (Bharat) Limited;

Scrutinized result of performance and financial activities of Dalmiya Cement presented in the Table 5.9. Average debtors turnover ratio is found 9.03 times and inventory turnover ratio 6.24 times, working capital turnover ratio is 6.28 times, all those three ratios are found stable during the study period with little fluctuation in debtor's turnover ratios. Cash conversion cycle is 4 weeks which is too long comparing with other companies of cement industries. Current ratio is 3.41, quick ratio is 1.11 and debt equity ratio is 1.03 which is higher than industry average. The company used debt capital up to 2009-2010. The PLR was higher than cost of

equity resulting in the fall in net profit ratio. Since 2010-2011 use of debt capital to finance its requirement and increase in the net profit ratio. Working capital turnover ratio was less during the year 2004-2005 to 2009-2010. Since 2010-2011 the company could increase the working capital turnover ratio and could improve the net profit ratios then. So, the hypothesis that working capital and net profit are positively related is clearly found in the result. Thus increase in the working capital turnover the company improves its profitability positions .When we consider other profitability ratio we found that average ROA and ROE is 5.90% and 13.85% respectively, it is also found that there is some variation for the net profit percentage and varies from 6.21% in the year 2009-2010 to 21.68% for the year 2012-2013. On the other hand PE ratio of this company is 70.23 which are too higher than industry average, which cans manifests that the acceptability of this company is very good to the market. Cost of equity is 2.11 which are lower than industry average and lower than prime lending rate also.

v)   JK Cement Limited;

It is observed from the Table 5.10 that average debtors turnover ratio is 45.49 times and velocity of debtors is (12 months/ 45.49) only 1 week and inventory turnover ratio is 35.19 and the velocity of inventory found (12 months /35.19) is only 10 days. Result related with debtors and inventory clearly established that the company are very aggressive regarding credit policy, Company also holding inventory very short time, these movement directly affect on working capital, but for the years 2012-2013 and 2013-2014 company's current liabilities decreased due to the fast payment schedule which affect working capital directly. Current liabilities includes bank overdraft and outstanding expenses increasing from the year 2009-2010 resulting quick ratio begin negative. Cash conversion cycle is 1 week because we have already found that the company is not holding inventory for long time as well as collection from debtors are also very

fast. All the calculated ratios are higher than industries average. From that ratio it is clearly reveals that the company perform very well and maintain a good policy regarding debtors and inventory, it is also found that there is not more fluctuation for the last ten years performance of JK Cement. Current ratio is 1.93 which is theoretically almost ideal ratio, quick ratio is 0.17. Profitability ratio we found that average net profit ratio is 8.13% , ROA and ROE is 5.67% and 11.75%, respectively it is also found that there is some fluctuation for the net profit percentage which varies from 1.91% in the 2004-2005% and for the year 2007-2008 is highest 18.18%. On the other hand PE ratio of this company is 20%, with some little fluctuation it may described as stable. Cost of equity average is 14.57% which is higher than industry average and obviously higher than prime lending rate also. Here is an important observation is, the result of the cost of equity found 84.92% in the year 2007-2008. The rise in the cost of equity is substantiate by acquiring the fund for increasing the fixed asset in the same year , as a result company spending more for acquiring equity fund. Finally we can conclude as JK Cements a profitable industry and handles all the accounting aspect perfectly.

5.3 ANALYSIS OF RATIOS OF FERTILIZER INDUSTRY;

i) Hindustan Insecticides Limited;

It is observed from the Table 5.11 that average debtor's turnover ratio is 2.85times and inventory turnover ratio is 5.24 times, debtors and inventory movement is stable but collection from debtors takes more than 4 months. Debtor's turnover clearly indicates that the company maintain the own credit policy efficiently. Working capital turnover ratio is 4.19 times and cash conversion cycle is 4 weeks. Cash conversion is same as industry average which is 4 weeks. Current ratio is 1.84, quick ratio is 1.30.Debt equity ratio fund0.96is indicates that the company

are not using the debt finance but it is also found that cost of equity is 15.53% which is higher than PLR, which revealed that, if the company able to use external sources to finance its working capital then return to equity may increase. When we consider profitability ratio we found that average net profit is 5.82%, ROA and ROE is 3.11% and 11.68% respectively. Net profit turnover and ROA perform better than industry average. We also found that there is no major fluctuation of net profit percentage for selected ten year period only exception in the year 2009-2010 where the net profit ratio found 12.79% which was the highest profit percentage within the selected ten years time period, in the year 2013-2014 profit turnover decreased to 0.82% which was the lowest profit percentage. On the other hand PE ratio of this company is 15.91. Hindustan Insecticides proved itself that, it is a profitable industry according to the performance of financial activity.

ii)   National Fertilizer Limited;

Table 5.12 is the representation of financial performance of National Fertilizer Limited. From that table we observed, average debtor's turnover ratio is 4.51times and the velocity of debtors is 2.66 months which may consider as long time and the reflection of slow recovery from debtors in due time or the submissive credit policy of the company. However debtor's movement is slow but stable. Inventory turnover ratio is 21.38 times and the velocity calculated 0.56 months which indicates that the company holding inventory for short period or the inventory movement is fast in nature. Working capital turnover ratio found 6.36 on an average, but we observed that 7 years during the study period nature of working capital was current liabilities dominated which changed from the year 2011-2012 where we found value of current asset increased and the working capital nature has been changed. Cash conversion cycle is 4 weeks which is found same as industry average. Current ratio is 1.49; quick ratio is 1.39 and

stable in nature. Considering profitability ratio we found that average net profit is 2.06% ROA and ROE is 3.51% and 5.09% respectively. A fact was established through the analysis of profitable ratios that net profit; ROA and ROE started declining from the period 2012-2013 and arrive at negative value this mean that the net worth of the equity holders are decreasing. The average cost of equity is 2.32% this shows that the return to equity is very low because of poor financial performance. PE ratio is higher side i.e. share are quoted in market higher than its potential. During the last three years the company is raising debt capital and impact on the earnings to equity is adverse because of higher cost of debt.

iii)   Paradeep Phosphate Limited;

Analysis of financial performance of Paradeep Phosphate Limited is represented in the Table 5.13, where we detect that average debtors turnover ratio is 2.29 times and inventory turnover ratio 1.03 times, velocity of debtors calculated 5.24 months and inventory velocity found11.65 months or almost one year, which revealed the fact that debtor's and inventory movement is very slow in nature, because we found that collection from debtor required nearly six months and inventory acquire time to move approximately one year. The production and credit policy of the company to be reviewed as inventory holding for long time affects the productivity of the company adversely. However highest debtors turnover was 4.57 times in the year 2011-2012 and 1.32 times was lowest in the year 2008-2009. Inventory turnover highest was 1.44 times in the year 2008-2009 and lowest was 0.81times in the year 2009-2010. Working capital turnover ratio is 4.27times and cash conversion cycle is 4 weeks. Working capital turnover ratio was stable and performs better. Cash conversion is same as industry average is 4 weeks. Current ratio is 2.19, quick ratio is 1.68. Debt equity ratio is found 1.18 which indicates that the company using debt capital, unexpectedly we found that PLR

(12.62%) is higher than cost of equity (1.74%), if the company based on own equity then they are able to spent less amount of money, but they are using external funds and spending more money to acquire debt funds, definitely affects profitability of the company. When we consider profitability ratio we found that average net profit ratio is 5.82% ROA and ROE is 4.42% and 18.76% respectively. From the year 2008-2009 and continues for the next year with net profit percentage 12.65% which was the highest profit percentage within the study period. Another object note in the year 2013-2014 the company suffers from loss of (-) 2.98%. Another important remark found from these analysis that this company gradually decreased profit percentage from the year 2010-2011. Though the company turned a loss making status in the year 2013-2014 which also affect to the ROA and ROE directly, and the ROA and ROE is declining over the years.

iv)   Rastriyo Chemicals & Fertilizers Limited;

It is observed from the Table 5.14 average debtors turnover ratio is 4.71 times indicates slow movement of debtors and average inventory turnover ratio found 12.02 times, in the year 2009-2010 inventory turnover increased to 33.01 times and the lowest turnover was in the year 2006-2007 which is 4.92 times. Which is the reflection of fast movement of inventory or in other word company are not holding inventory for long time in comparing to other firms within the industry, this is also justified by the working capital turnover ratio, for the reason that average working capital turnover ratio is 2.71times , but we also observed from the year 2011-2012 working capital has been changed , this observation revealed the fact that company are taking more time to paying the creditors' as a result current liabilities increased and working capital movement become inferior comparing with the previous years working capital turnover. Cash conversion cycle is also taking too long time 5 weeks on an average, the time period is

longer than average of industry. Current ratio is 2.21, quick ratio is 1.60 which may describe as ideal ratio and debt equity ratio is 0.57. Considering the profitability ratio we found that average net profit is 7.01% ROA and ROE is 4.91% and 11.33% respectively. All the profitability ratios are not stable. In the year 2011-2012 profit reduced to 4.15% and finally net profit percentage found 3.79%as the lowest net profit turnover ratio in the year 2013-2014. ROA is stable for ten years .On the other hand PE ratio of this company is 18.21 which are higher than industry average, indicates the excellent acceptability of the company stock market. Cost of equity is 7.08% which are lower than prime lending rate that means the company is not getting chances to use external funds and they are only using internal funds only. Finally we can finish off as Rastriyo Chemicals & Fertilizers is a profitable industry and handles all the accounting aspect efficiently.

v) DCM Sriram Limited;

Financial position and analysis of different components of working capital of DCM Sriram Limited has been presented in table 5.15, average debtors turnover ratio is9.69times and the velocity of debtors (12months/9.69) calculated 5 weeks and the inventory turnover ratio found 1.08 times, inventory velocity (12 months/1.02) is 1 year and cash conversion cycle is 4 weeks. Debtor's turnover clearly indicates that collection from debtors is slow. It is also found that inventory turnover of this company is also very slow movement in nature because we found that highest inventory turnover ratio is 1.14 times only in the year 2011-2012 and 0.90 is the lowest turnover ratio in the year 2013-2014, though the inventory movement is slow but it is stable according to the study periods result, it also surfaced the fact that this kind of long time stock holding causes unnecessary blockage of funds which affects the profitability of the company. Cash conversion cycle time period is same as industry average 4 weeks. Working

capital turnover is positive and high in nature but some of the year we found working capital turnover ratio was too high 25.93 times in the year 2011-2012 is represents that there was outsized amount of current assets are holding in hand. Current ratio is 1.81 is ideal in nature and the company are able to maintain the same. Quick ratio is 0.95 and debt equity ratio is 1.49 which is better comparing with industry average. When we consider profitability ratio we found that average net profit is 2.98% ROA and ROE is 3.55% and 13.45%. All the profitability ratios are not stable. In the year 2010-2011 company suffered from loss (-) 0.74% and improves from the next year and finally net profit initiate to 4.53%. Highest net profit established in the year 2004-2005 which 5.98% was. ROA also fluctuate in the year 2011-2012 we found (-) 0.31% and in the year 2005-2006 is found 6.67%.On the other hand PE ratio of this company was stable up to the year 2009-2010 where we found positive quoted price for the share market. The cost of equity for the company is 25.98%which is twice than prime lending rate, which leaves opportunities for the company to acquire external funds. It is being observed from the above table that the net profit ratio for the financial year 2010-2011 and 2011-2012 is negative which is further depicted in ROA and ROE. Finally we can conclude that DCM Sriram Limited should be more concern about profit and thereby on the cost of equity.

5.4. ANALYSIS OF RATIOS OF HEAVY ENGINEERING INDUSTRY

i) Bharat Earth Movers Limited;

Table 5.16 represents the scrutinized result of financial performance of BEML, where average debtors turnover ratio is observed 2.64 times and the debtors velocity (12 months /

2.64) is 4.54 months, inventory turnover ratio 2.24 with inventory velocity (12 months / 2.24) is calculated 5.34 months. Debtor's turnover ratio and inventory turnover ratio both are very slow progress in nature on an average five and half months which may consider as long time, though there is not so much difference found in the average industry turnover. Working capital turnover ratio is 1.90 with small amount of fluctuation. Cash conversion cycle is 14 weeks. This result clearly revealed that due to the involvement of huge amount of money cash conversion cycle obtain utmost time to complete each cycle, this is supported by the industry average which is found 15 weeks. Current ratio is 1.48, quick ratio is 0.95. Debt equity ratio is 0.13% which is the indication of appropriate utilization against minimum expenses against obtain the equity fund. Performance of profitability ratio found that, average net profit is 5.87% ROA and ROE is 4.79% and 10.91% respectively. Net profit turnover and ROA are almost same according to industry average. It also found that net profit was highest in the year 2004-2005 which is 10.12% and the company suffers from loss in the year 2012-2013, but it again increased from the next year. Surprisingly it is observed that all the three profitability ratios are found negative for the year 2012-2013 represents all those ratios are related with each other. On the other hand PE ratio of this company is 84.50 is significantly prove that the company is choice by the share market that is the reason for higher quote. Also found an abnormal hike in PE ratio in the year 2013-2014.Cost of equity is 4.45% represent that the company are not getting the advantage of external finances because prime lending rate is higher than cost of equity. Bharat Earth Movers Limited found as a profitable industry and handles all the accounting aspect efficiently.

ii)   Bharat Heavy Electrical Limited;

It is observed from the Table 5.17 average debtor's turnover ratio is 1.87 times and the debtor's velocity was 6.87 months and inventory turnover ratio found 3.87 times with inventory velocity 3.10 months, performance of inventory is comparatively better than debtor's related activity. Company is giving long time to debtors, at the same time company holds inventory for longer period; as a result both are taking extensive time for progress. Debtors and inventory directly affect cash conversion cycle which is found 13 weeks on an average this result clearly revealed that due time factor of debtors and inventory has taken more time to complete each cash conversion cycle. Working capital turnover ratio is 3.00 which is less than industry average. Current ratio is 1.59, quick ratio is 1.24 and debt equity ratio is 0.22 which are better comparing with industry average. When we consider profitability ratio we found that average net profit is 12.33% ROA and ROE is 8.65% and 23.38%.It also observed that net profit was highest in the year 2011-2012 is 14.30% and least profit earn by the company in the year 2004-2005 is 8.89% also observed that net profit ratio is stable for last ten years with little bit fluctuation. PE ratio is 20.24 on an average. This quote was almost stable up to the year 2009-2010, it is also observed that quoted price has been decreased with massive difference in the year 2010-2011 stand only 1.95, but the company able to pull through at 18.76 at the end of the year 2013-2014. Cost of equity is found 10.50%, while it is lower than prime lending rate so the company is not acquiring external funds. Finally we can conclude that Bharat Heavy Electrical Limited earn highest profit, so the company can be awarded the best company title surrounded by the selected five companies

iii) Tractors India Limited;

Table 5.18 is signifying the financial performance of Tractors India Limited, from that table we found average debtors turnover ratio is 4.83 times and inventory turnover ratio 4.45 times, both the ratios are very slow in character because velocity are just about 3 months is indicate that the payment realize from the debtors are taking long time and the inventory are also keep on in stock for long time. Working capital turnover ratio is 4.76 and cash conversion cycle is 8 weeks. Working capital performance of this company is almost same as the average of selected five companies. We also found that cash conversion cycle is 8 weeks on an average for the tractor India which can remark as best performing company intended for the cash conversion cycle as the other company's cash conversion cycle is very slow. This result also clearly revealed the company is more aggressive for cash related activity. Current ratio is 1.54, quick ratio is 0.93 and debt equity ratio is 0.54 which are better comparing with industry average. Considering the profitability ratio found, average net profit is 5.90% ROA and ROE is 5.13% and 13.68%, all are higher than industry average. It also found that net profit percentage highest which is 22.28% in the year 2011-2012 and lowest amount of profit earn by the company in the year 2013-2014 is 0.19% , also observed that net profit ratio is stable for last ten years only above maintained two years are different in nature otherwise there was not so much fluctuation. Another observation is subsequent two years 2012-2013 and 2013-2014 company's profit losing to 0.98 and 0.19 respectively are also affecting ROA and ROE. PE ratio is 19.23 on an average with some fluctuation like 54.61 in the year 2012-2013 and lowest 3.94 in the year 207-2008 .Cost of equity is 9.40 which are higher than industry average, but lower than prime lending rate. Finally we can conclude as Tractor India Limited is a profitable industry and handles all the accounting aspect efficiently.

iv)   ISGEC Heavy Engineering Limited;

It is observed from the Table 5.19 average debtors turnover ratio is 4.06 and inventory turnover ratio 5.58 both are taking stretched time two and half months for debtors and three months for inventory which is revealed that both are moving slow. Working capital turnover ratio found 13.14 times which fluctuating in nature because it is observed that 2004-2005 to 2006-2007 current asset value was higher and working capital found in high turnover rate, again 2007-2008 onwards working capital turnover goes low because value of the current liabilities found high, all these activity indicates that the company are unable to handle current asset and current liabilities also. But surprisingly average cash conversion cycle was 7 weeks in our study period after considering 5 weeks lowest in the year 2005-2006 and 12 weeks highest in the year 2013-2014 conversion cycle. We also found that cash conversion cycle is 7 weeks average for the ISGEC which can remarked as one of the best performing company for the cash conversion cycle as the other company's cash conversion cycle is very slow. Current ratio is 1.19, quick ratio is 0.82 and debt equity ratio is 0.45 which are better comparing with industry average. When we consider profitability ratio we found that average net profit is 3.71% ROA and ROE is 4.14% and 14.77%. It also found that net profit percentage highest in the year 2005-2006 with percentage of 6.21 and lowest amount profit earn by the company in the year 2007-2008 is 2.12% also observed that net profit ratio is more or less stable for last ten years. Average PE ratio is 18.66, except in the year 2013-2014 where we discover PE ratio is quoted 82.64, other than remaining nine years quote were 5.52 to 18.38. Cost of equity is 9.26% which are higher than industry average, but lower than prime lending rate. Finally we can bring to a close as ISGEC is a profitable industry and handles all the accounting aspect efficiently.

v)   Heavy Engineering Corporation Limited;

It is observed from the Table 5.20 that average debtors turnover ratio is 1.06 and inventory turnover ratio 1.05, debtor's turnover ratio and inventory turnover ratio both are very slow in nature, according to velocity result found roughly 1 year for both of them, though there is not so much difference found in the average industry turnover. Working capital turnover ratio is 2.36 times on an average and there is not so much variation found within our study period. Average cash conversion cycle is 33 weeks, which is very stretched period for each cycle, which can remarked as slowest performing company for the cash conversion cycle comparing with the other company's cash conversion cycle. This result also clearly revealed that due to the participation of bulky amount of money this cycle obtain more time for each cycle. Current ratio is 0.52, quick ratio is (-) 0.16 and debt equity ratio is also negative (-) 0.84 which are not good comparing with industry average. Considering the profitability ratio we found average net profit ratio is negative which represents loss is (-) 0.16% ROA and ROE is (-) 0.67%, (-) 9.59%. It also found that net loss percentage highest in the year 2005-2006. From the year 2006-2007 the companies slowly pull through from the loss, finally it generates profit in the year 2007-2008. From 2007-2008 company amplified the profit turnover in positive manner, again profit decreased to 1.20% in the year 2011-2012. In the year 2013-2014 the company earns a good profit because the net profit percentage found 6.27%. We also found that average of ROA and ROE both are in negative rate. Cost of equity is 7.27%. Though the cost of equity is less than prime lending rate company are not getting chances to use external funds. PE ratio is (-) 64.99 on an average , but this ratio is transform from negative to positive quote from the year 2007-2008 and this affirmative quote maintain within our study period. It is also monitor

that ISGEC is a may be a profitable industry if the company able to handle all the accounting aspect efficiently.

5.5. ANALYSIS OF RATIOS OF STEEL INDUSTRY

i)   Tata Steel Limited;

Table 5.21represents the financial performance of Tata Steel Limited, from table illustrate average debtors turnover ratio is 41.69 times and the debtors velocity is only 8 days , which symbolize the company is very aggressive for the credit policy. Inventory turnover ratio 9.14 times and inventory velocity 39 days, which is much lower than the industry average may be Tata Steel is moving towards JIT. Cash conversion cycle is very fast because it is found only 1 week, debtor's turnover influence in a positive way to the cash conversion cycle. All the performance ratios are better in every aspect comparing with the average of selected five companies under steel industries. Working capital found always between 6.65 times to 0.61 times for Tata steel. We also found Current ratio is 1.80, quick ratio is 1.27 and debt equity ratio is 0.90 which are better comparing with industry average. It is study that the average net profit is 20.72% ROA and ROE is 11.89% and 21.05%. The entire three profitability ratio performs very well as a result this company earned highest profit within the selected five steel companies. It also found that net profit percentage is stable for last ten years without major oscillation. ROA & ROE also better comparing with other company. Cost of equity is 14.61% which are higher than industry average, even higher than prime lending rate also; due to the low PLR the Company is able to use external funds which evidently affects the financial performance of Tata Steel.PE ratio stand 7.88% on an average for our study period without wide variation, which points out that the PE ratio, is very low comparing with to the other

financial performance and return to equity is found high, company are heartrending through first-rate quoted price, which is the evidence of goodwill and market confidence on the Tata Steel. According to the evaluation of financial performance Tata Steel Limited can be awarded as the best profit earning company within our selected five companies.

ii)   Steel Authority of India Limited;

Financial position and analysis of different components of working capital of Steel Authority of India Limited has been presented in table 5.22. An average debtor turnover ratio is 13.03 times and the velocity is less than 1 month, inventory turnover ratio 5.22 times with velocity more than 2 months. Only for the year 2009-2010 and 2010-2011 debtors turnover reduced to 3.87 and 3.62 times respectively, or else this ratio is stable , which is the indication that the company are maintaining credit policy very competently. Inventory turnover ratio is better and higher than average industry average with negligible fluctuation for the 2012-2013 and 2013-2014. Working capital turnover ratio is 4.57 times and cash conversion cycle is 4 week. All the performance ratios are better in every aspect comparing with the average of selected five companies under steel industries. Working capital found always between 7.51 times to2.05times for SAIL. We also found that cash conversion cycle is 4 weeks for the industry average and the company's average is also 4 week. Current ratio is 1.62, quick ratio is 1.14 and debt equity ratio is 0.45 which are better comparing with industry average. When we judge profitability ratio we found that average net profit is 13.49% ROA and ROE is 11.08% and 214.30%. The entire profitability ratio performs very well as a result this company earned excellent profit. It also found that net profit percentage is stable for first seven years without major fluctuations, but it started reduce from the year 2011-2012. ROA & ROE also better comparing with other company. A particular observation is, from the year 2011-2012 the

profitability ratios shrink all together.PE ratio found 11.50 on an average however that was not stable for the study period, but overall PE ratio pull out the fact that the company is always receiving the trust of market. Cost of equity and prime lending rate are almost same on an average, due to the changeable nature of cost equity the company get chances to obtain the external funds as and when required. Considering all the financial activity Steel Authority of India Limited is described is a profitable.

iii)   Adhunik Metaliks Limited;

It is studied from the Table 5.23, average debtors turnover ratio is 7.46times from the year 2013-2014 debtors turnover amplified to 10.81 times otherwise this ratio is stable, velocity found one and half months which is better comparing with the average of selected five steel industries. Inventory turnover ratio 3.92 times on an average, between 2.10 to 5.39 except in the year 2004-2005 where we found inventory turnover ratio was 10.18 times which high-quality certainly. Working capital turnover ratio is found 2.63times variety between 0.67 times to5.64times. We found that cash conversion cycle average is 6weeks, but be in motion of downhill from commencement of our study period. Current ratio is 1.95, quick ratio is 1.12 and debt equity ratio is 2.02 which are better comparing with industry average. Profitability ratio stand for average net profit is 4.25% ROA and ROE is 0.78% and 2.31% respectively. These three profitability ratio perform well , only in the year 2011-2012 company undergo a loss resulting net profit percentage set negative (-)0.03. ROA &ROE almost stable. PE ratio turns out to be26.72on an average with some up and down in nature. Company is not using external funds because cost of equity is lower than Prime lending rate. We can conclude as Adhunik Metaliks Limited is a profitable industry.

iv)   **Rastriyo Ispat Nigam Limited;**

It is observed from the Table 5.24, average debtors turnover ratio is 39.87 times indicates the company is very aggressive regarding credit policy, only 9 days is average time period required for collection from debtors, this is very remarkable. Inventory turnover ratio 3.44which is slow in character and always stand between 2.12 times to 4.95 times. Average working capital turnover ratio is 2.40times which are found almost stable for the study period. Cash conversion cycle is 4 weeks. We also detect that cash conversion cycle is 4 weeks, but in the year 2011-2012 cash conversion cycle arrived at 12 weeks, or else performance of this ratio is excellent which the reflection of aggressive collection policy is also. Current ratio is 2.95, quick ratio is 2.31 and debt equity ratio is 0.10. Average net profit is 12.27% ROA and ROE is 8.02% and 10.50% respectively. All the profitability ratios started decrease from the year 2009-2010 otherwise those are excellent from the year 2004-2005 onwards.

v)   **Jindal Steel & Power Limited;**

Table 5.25 demonstrates the financial performance of Jindal Steel & Power Limited. From the table it is observed that average debtor's turnover ratio is 21.62 times, velocity of debtors (12 months/21.62) is found only 16 days which establish the aggressive credit policy of the company. Inventory turnover ratio 6.59 times which is slow comparing with debtors turnover ratio and it indicates that the company hold inventory for lengthy time which is also directly affected working capital and cash conversion cycle. Cash conversion cycle found only 3 weeks after considering long time velocity of inventory otherwise cash conversion cycle become more successful. Working capital turnover ratio is 18.16 times, it is found that from the year 2009-2010 onwards volume of current liabilities raise and the working capital efficiency be converted into trim down. Current ratio is 0.86, quick ratio is 0.54 and debt equity ratio is 1.24.

Profitability ratio similar to net profit is found 11.54% ROA and ROE is 6.25% and 18.57% respectively. Selected three profitability ratio performs very well. It also found that net profit percentage is rise and fall nature for last ten years. ROA & ROE is found stable. PE ratio is 21.86% is indicates market trust on the company. Cost of equity is 7.12 which are less than prime lending rate as a result company are not getting the benefit for the using of borrowing funds.

Table 5.1

Table Showing Ratio Analysis of Ashok Leyland Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	9.88	7.59	5.42	1.85	1.36	6.49	1.20	23.24
2005-2006	12.14	5.99	6..30	1.58	0.94	6.24	1.41	23.17
2006-2007	15.54	6.93	9.97	1.54	0.93	6.16	1.63	23.29
2007-2008	17.74	7.90	14.53	1.27	0.73	6.07	1.56	21.84
2008-2009	9.25	5.36	9.17	1.48	0.86	3.18	5.38	54.69
2009-2010	7.51	5.11	7.81	1.40	0.84	5.85	9.51	115.48
2010-2011	10.34	5.86	2.10	1.06	0.47	5.19	1.36	15.93
2011-2012	11.02	6.63	6.47	0.89	0.43	4.12	1.12	13.45
2012-2013	9.42	6.58	5.28	0.83	0.47	3.26	0.81	6.33
2013-2014	7.32	8.36	10.16	0.86	0.60	0.28	0.06	0.43
Average	11.02	6.63	7.72	1.28	0.76	4.68	2.40	29.79

Table 5.1

Table Showing Ratio Analysis of Ashok Leyland Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.90	4	7.16	10.25	13.97
2005-2006	0.62	4	6.03	10.75	16.59
2006-2007	0.44	3	6.50	12.25	15.38
2007-2008	0.44	2	23.50	12.25	4.25
2008-2009	0.53	4	2.89	12.25	34.65
2009-2010	0.49	5	4.98	11.75	20.09
2010-2011	0.72	6	10.42	12.75	9.60
2011-2012	0.68	4	7.90	14.75	12.65
2012-2013	0.49	5	9.48	14.45	10.55
2013-2014	0.55	5	0.21	14.75	466.82
Average	0.61	4	7.91	12.62	60.46

Table 5.2
Table Showing Ratio Analysis of Bajaj Auto Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	20.13	32.95	2.99	0.93	0.85	16.13	9.24	18.55
2005-2006	21.34	34.14	2.74	0.81	0.73	14.75	11.16	23.09
2006-2007	22.66	36.88	4.71	0.88	0.81	13.32	10.70	22.37
2007-2008	21.93	29.33	5.92	0.88	0.69	8.72	15.71	47.61
2008-2009	27.45	28.64	9.82	0.95	0.81	7.76	11.49	35.01
2009-2010	37.41	28.87	11.03	0.70	0.60	14.8	1.99	5.82
2010-2011	51.83	31.67	30.44	0.79	0.64	20.88	3.61	6.80
2011-2012	49.90	30.18	23.92	1.12	0.98	15.91	2.69	4.97
2012-2013	33.60	33.20	18.38	1.50	1.35	15.62	2.43	3.85
2013-2014	25.31	31.50	13.36	1.19	1.05	16.44	2.19	3.37
Average	31.16	31.74	12.33	0.97	0.85	14.43	7.12	17.14

Table 5.2
Table Showing Ratio Analysis of Bajaj Auto Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.33	1	9.16	10.25	7.85
2005-2006	0.33	1	10.92	10.75	9.12
2006-2007	0.31	1	12.12	12.25	6.15
2007-2008	0.85	1	13.85	12.25	7.22
2008-2009	0.74	1	2.57	12.25	38.98
2009-2010	0.46	1	3.81	11.75	26.22
2010-2011	0.10	1	7.25	12.75	13.80
2011-2012	0.08	1	4.87	14.75	20.53
2012-2013	0.06	1	5.51	14.45	18.16
2013-2014	0.05	1	4.60	14.75	21.76
Average	0.33	1	6.06	12.62	20.95

Table 5.3
Table Showing Ratio Analysis of Eicher Motors Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	12.75	12.43	15.64	1.11	0.75	2.94	6.52	24.42
2005-2006	11.97	10.34	10.21	1.24	0.83	12.94	20.54	48.74
2006-2007	12.83	11.77	11.44	1.15	0.83	2.31	44.36	127.49
2007-2008	13.42	12.63	11.25	1.17	0.78	2.11	44.17	119.56
2008-2009	73.71	19.68	19.69	1.38	1.22	9.22	6.81	9.32
2009-2010	100.11	17.97	5.56	0.61	0.43	15.18	11.88	16.52
2010-2011	173.50	17.16	1.36	2.73	2.53	16.65	15.92	23.06
2011-2012	203.74	13.91	3.08	1.99	1.79	13.22	14.13	23.01
2012-2013	185.76	11.84	1.76	1.65	1.43	15.63	18.77	33.92
2013-2014	265.55	14.78	2.49	1.31	1.09	17.76	25.08	45.31
Average	105.33	14.25	8.25	1.43	1.17	10.80	20.82	47.14

Table 5.3
Table Showing Ratio Analysis of Eicher Motors Limited

Year	Debt Equity Ratio	Cash Conversion Cycle(Week)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.85	2	20.16	10.25	4.95
2005-2006	0.49	3	21.19	10.75	4.72
2006-2007	0.58	2	5.35	12.25	18.69
2007-2008	0.53	2	5.91	12.25	16.93
2008-2009	0.03	1	2.11	12.25	47.31
2009-2010	0.04	1	0.18	11.75	567.83
2010-2011	0.03	1	3.13	12.75	31.96
2011-2012	0.03	1	1.85	14.75	54.14
2012-2013	0.03	1	2.07	14.45	48.25
2013-2014	0.03	1	3.04	14.75	42.82
Average	0.27	2	4.18	12.62	98.73

Table 5.4

Table Showing Ratio Analysis of Hindustan MotorsLimited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	15.88	14.45	4.80	0.88	0.51	5.48	11.10	34.48
2005-2006	9.71	5.33	3.09	0.91	0.51	-9.58	-7.87	-24.59
2006-2007	14.81	6.52	2.49	1.16	0.69	1.99	2.27	7.53
2007-2008	16.72	10.81	2.04	1.05	0.60	4.38	6.35	17.68
2008-2009	20.33	10.60	3.96	0.89	0.43	-6.20	-8.31	-22.40
2009-2010	42.37	10.64	1.95	0.75	0.43	-8.33	-9.97	-29.63
2010-2011	37.87	6.84	1.55	0.81	0.40	0.11	0.16	0.85
2011-2012	23.98	8.01	6.73	9.19	8.65	-6.05	-6.69	-10.66
2012-2013	35.83	8.89	9.36	0.44	0.15	-9.85	-6.69	-25.35
2013-2014	9.41	12.04	3.14	0.58	0.51	-1.68	-1.63	-8.80
Average	22.69	9.41	3.91	1.67	1.29	-2.97	-5.13	-6.9

Table 5.4

Table Showing Ratio Analysis of Hindustan MotorsLimited

Year	Debt Equity Ratio	Cash Conversion Cycle(Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.87	3	-6.27	10.25	-10.52
2005-2006	0.91	2	-7.97	10.75	-12.55
2006-2007	1.07	2	1.34	12.25	74.45
2007-2008	0.73	1	14.60	12.25	6.85
2008-2009	0.75	1	-9.05	12.25	-11.05
2009-2010	0.67	1	-12.99	11.75	-7.70
2010-2011	1.68	1	0.61	12.75	164.20
2011-2012	0.55	1	-19.27	14.75	-5.19
2012-2013	-0.67	1	45.66	14.45	-2.19
2013-2014	-0.38	1	2.16	14.75	-46.35
Average	0.62	1	-8.05	12.62	17.83

Table 5.5
Table Showing Ratio Analysis of Tata Motors Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	24.12	14.06	3.22	1.08	0.84	7.03	90.20	300.86
2005-2006	26.31	12.63	1.34	1.36	1.08	7.40	94.31	276.12
2006-2007	35.60	13.26	1.03	1.36	1.04	6.97	98.69	278.53
2007-2008	30.08	14.44	1.28	0.97	0.75	7.06	78.86	258.81
2008-2009	19.11	13.47	2.10	0.89	0.68	3.90	26.88	81.87
2009-2010	17.19	13.50	1.87	0.66	0.50	6.29	44.38	149.68
2010-2011	18.86	13.15	2.33	0.87	0.71	3.77	33.43	90.53
2011-2012	20.45	12.91	6.59	1.13	0.80	10.81	14.29	49.93
2012-2013	19.78	11.70	7.49	1.11	0.79	7.69	9.46	34.30
2013-2014	22.60	9.78	1.85	1.26	0.88	9.69	12.06	64.26
Average	23.41	12.89	2.91	1.07	0.81	7.06	50.26	158.49

Table 5.5
Table Showing Ratio Analysis of Tata Motors Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.74	1	3.97	10.25	21.72
2005-2006	0.64	1	4.44	10.75	22.54
2006-2007	0.70	1	6.69	12.25	14.95
2007-2008	0.93	1	33.09	12.25	3.02
2008-2009	1.16	2	2.46	12.25	40.69
2009-2010	1.21	2	3.01	11.75	33.27
2010-2011	0.90	2	16.00	12.75	6.25
2011-2012	0.91	2	1.25	14.75	79.90
2012-2013	1.04	2	0.25	14.45	396.21
2013-2014	2.38	2	0.21	14.75	477.02
Average	1.06	2	6.74	12.62	107.38

Table 5.6

Table Showing Ratio Analysis of Everest Cement Industries

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	65.35	4.89	5.46	1.94	-0.83	8.35	10.90	17.35
2005-2006	74.53	4.85	5.37	2.39	-0.80	12.30	15.38	23.99
2006-2007	45.76	5.24	6.06	1.86	-0.74	3.84	4.25	8.67
2007-2008	32.99	4.19	4.77	2.10	-0.89	5.02	4.02	10.13
2008-2009	34.45	4.54	5.33	2.54	-1.17	2.73	3.21	9.55
2009-2010	27.75	5.92	5.77	1.90	-0.71	4.60	6.86	17.28
2010-2011	26.56	5.22	13.33	1.05	-0.57	5.54	8.49	19.52
2011-2012	24.50	6.25	43.54	1.14	-0.58	5.83	10.13	21.15
2012-2013	21.75	3.99	17.04	1.28	-0.64	5.13	7.49	18.12
2013-2014	15.56	4.28	40.50	0.92	-0.40	0.88	1.11	3.11
Average	33.25	4.94	14.72	1.71	-0.73	5.42	7.18	14.89

Table 5.6

Table Showing Ratio Analysis of Everest Cement Industries

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.20	1	6.01	10.25	16.65
2005-2006	0.27	1	18.42	10.75	5.43
2006-2007	0.63	2	5.25	12.25	19.05
2007-2008	1.06	2	16.25	12.25	6.15
2008-2009	1.37	2	6.22	12.25	16.07
2009-2010	0.88	2	9.84	11.75	10.16
2010-2011	0.24	2	24.96	12.75	4.01
2011-2012	0.17	2	18.27	14.75	5.47
2012-2013	0.31	3	27.56	14.45	3.63
2013-2014	0.29	3	1.96	14.75	51.12
Average	0.54	2	13.47	12.62	13.77

Table 5.7
Table Showing Ratio Analysis of ACC Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	16.88	5.37	4.19	1.16	-0.07	16.90	11.24	25.47
2005-2006	28.09	9.33	15.45	1.31	-0.05	21.23	20.86	39.19
2006-2007	27.78	24.85	10.53	0.99	-0.13	20.58	20.52	34.64
2007-2008	24.30	27.51	6.01	1.00	-0.05	16.65	14.29	24.61
2008-2009	31.24	25.22	12.84	0.72	-0.08	20.02	15.99	26.71
2009-2010	40.41	19.04	16.22	0.73	-0.09	14.51	10.09	17.31
2010-2011	53.83	8.79	10.66	1.36	0.13	13.45	11.05	18.43
2011-2012	47.32	10.02	8.90	1.42	0.46	9.13	8.90	14.37
2012-2013	32.64	11.14	10.42	1.21	0.35	9.58	9.06	14.00
2013-2014	29.72	10.44	14.23	0.96	0.11	9.73	9.22	14.19
Average	32.65	15.17	10.95	1.09	0.06	15.18	13.12	22.89

Table 5.7
Table Showing Ratio Analysis of ACC Limited

Year	Debt Equity Ratio	Cash Conversion Cycle(Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.69	3	5.52	10.25	18.11
2005-2006	0.39	2	6.06	10.75	16.50
2006-2007	0.15	1	6.90	12.25	14.50
2007-2008	0.17	1	13.52	12.25	7.40
2008-2009	0.15	1	9.82	12.25	10.18
2009-2010	0.14	1	5.55	11.75	18.03
2010-2011	0.21	1	6.21	12.75	16.10
2011-2012	0.15	1	3.95	14.75	25.29
2012-2013	0.08	1	5.27	14.45	18.99
2013-2014	0.08	1	4.45	14.75	22.49
Average	0.22	1	6.72	12.62	16.76

Table 5.8

Table Showing Ratio Analysis of Grasim Industries limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	12.38	15.54	8.93	1.84	-0.11	13.86	10.73	19.94
2005-2006	14.22	15.39	8.32	1.59	-0.03	12.98	9.79	17.33
2006-2007	17.38	17.75	10.46	1.62	0.00	17.85	13.58	24.29
2007-2008	15.86	19.40	11.97	1.38	0.08	21.86	15.74	27.43
2008-2009	16.99	13.10	13.72	1.36	-0.15	15.25	10.29	17.39
2009-2010	18.17	25.79	15.50	1.32	-0.04	15.51	11.73	15.30
2010-2011	32.29	11.89	19.41	1.09	-0.26	10.63	11.19	30.70
2011-2012	9.78	8.49	8.39	3.63	1.98	21.65	10.67	12.93
2012-2013	10.36	7.27	2.29	2.31	0.97	21.88	9.38	12.11
2013-2014	10.01	5.03	2.89	2.37	0.37	14.96	6.46	8.28
Average	13.73	13.97	10.19	1.85	0.28	16.64	10.96	18.57

Table 5.8

Table Showing Ratio Analysis of Grasim Industries limited

Year	Debt Equity Ratio	Cash Conversion Cycle(Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.63	2	6.94	10.25	26.76
2005-2006	0.51	2	3.38	10.75	29.62
2006-2007	0.56	2	4.59	12.25	21.80
2007-2008	0.48	2	18.34	12.25	5.45
2008-2009	0.45	2	7.25	12.25	13.79
2009-2010	0.18	2	9.75	11.75	10.26
2010-2011	0.99	3	5.14	12.75	19.47
2011-2012	0.09	4	4.06	14.75	24.64
2012-2013	0.14	5	4.92	14.45	20.32
2013-2014	0.14	6	2.88	14.75	21.14
Average	0.42	3	6.72	12.62	18.17

Table 5.9

Table Showing Ratio Analysis of Dalmiya Cement (Bharat) Ltd

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	14.26	3.20	2.78	2.38	-0.60	5.95	2.88	8.58
2005-2006	12.61	4.10	3.39	1.93	-0.20	13.04	5.97	19.81
2006-2007	13.91	6.30	8.33	1.35	0.19	23.2	9.55	30.38
2007-2008	15.82	5.22	4.71	1.68	-0.09	23.45	9.76	30.26
2008-2009	10.99	7.12	3.67	1.78	-0.30	9.10	3.60	12.51
2009-2010	10.07	3.21	3.18	2.82	-0.96	6.21	3.04	9.94
2010-2011	1.20	4.53	8.90	8.55	4.52	14.50	4.05	4.33
2011-2012	13.30	4.86	8.68	4.22	2.48	17.87	5.67	6.30
2012-2013	5.22	9.12	9.64	4.45	2.84	21.68	6.78	7.65
2013-2014	3.25	14.75	9.56	4.97	3.18	21.65	7.71	8.71
Average	9.03	6.24	6.28	3.41	1.11	15.67	5.90	13.85

Table 5.9

Table Showing Ratio Analysis of Dalmiya Cement (Bharat) Ltd

Year	Debt Equity Ratio	Cash Conversion Cycle(Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	1.55	5	10.29	10.25	61.86
2005-2006	1.77	4	-0.28	10.75	-357.50
2006-2007	1.52	4	-0.04	12.25	-2268.13
2007-2008	1.52	4	0.04	12.25	2837.00
2008-2009	1.98	3	0.59	12.25	170.22
2009-2010	1.92	4	1.59	11.75	62.80
2010-2011	0.00	4	2.25	12.75	44.49
2011-2012	0.01	3	2.26	14.75	44.19
2012-2013	0.01	6	3.05	14.45	32.84
2013-2014	0.02	5	1.34	14.75	74.49
Average	1.03	4	2.11	12.62	70.23

Table 5.10

Table Showing Ratio Analysis of JK Cement Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	8.15	15.04	2.73	1.76	0.16	1.91	0.53	1.60
2005-2006	19.77	16.04	4.04	2.65	0.05	3.73	2.22	4.83
2006-2007	22.78	15.28	3.89	2.48	0.26	14.48	11.06	21.78
2007-2008	24.42	64.12	4.18	2.31	0.82	18.18	13.92	25.17
2008-2009	27.14	87.02	3.09	2.89	1.44	9.51	6.59	12.00
2009-2010	27.08	77.26	4.00	1.91	-0.01	12.37	7.61	16.69
2010-2011	29.37	24.83	7.09	1.41	-0.13	3.02	1.88	4.58
2011-2012	35.25	14.31	8.39	1.47	-0.21	6.84	4.95	11.60
2012-2013	29.27	17.89	12.42	1.14	-0.37	7.89	5.99	13.76
2013-2014	24.64	20.08	12.80	1.32	-0.26	3.41	1.90	5.52
Average	45.49	35.19	6.26	1.93	0.17	8.13	5.67	11.75

Table 5.10

Table Showing Ratio Analysis of JK Cement Limited

Year	Debt Equity Ratio	Cash Conversion Cycle(Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	1.64	1	2.94	10.25	9.61
2005-2006	0.89	1	6.29	10.75	15.89
2006-2007	0.71	1	14.38	12.25	6.95
2007-2008	0.53	1	84.92	12.25	1.18
2008-2009	0.56	1	13.60	12.25	7.36
2009-2010	0.93	1	7.31	11.75	13.68
2010-2011	0.96	1	4.83	12.75	20.71
2011-2012	0.86	1	2.46	14.75	40.61
2012-2013	0.77	1	7.71	14.45	12.96
2013-2014	1.35	1	1.24	14.75	80.61
Average	0.92	1	14.57	12.62	20.00

Table 5.11

Table Showing Ratio Analysis of Hindustan Insecticides Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	2.40	5.25	3.62	1.33	0.95	2.36	9.89	33.24
2005-2006	2.36	5.84	3.87	1.47	1.00	8.34	10.02	35.82
2006-2007	2.94	3.83	3.46	1.54	0.96	3.17	2.75	6.19
2007-2008	3.88	4.81	3.39	1.58	1.07	3.51	3.25	7.14
2008-2009	2.96	6.20	3.07	1.65	1.06	7.20	1.23	2.96
2009-2010	4.86	5.66	4.02	1.34	0.88	12.79	1.21	3.36
2010-2011	3.51	5.29	8.58	1.10	0.66	6.98	0.59	1.73
2011-2012	2.09	5.12	5.19	1.82	1.19	7.05	0.63	1.84
2012-2013	2.08	4.73	2.95	1.67	1.12	5.85	0.97	3.25
2013-2014	1.82	5.63	3.72	1.34	1.01	0.82	0.55	2.01
Average	2.85	5.24	4.19	1.48	0.99	5.82	3.11	9.75

Table 5.11

Table Showing Ratio Analysis of Hindustan Insecticides Limited

Year	Debt Equity Ratio	Cash Conversion Cycle(Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.83	3	2.58	10.25	38.77
2005-2006	0.91	4	20.95	10.75	4.77
2006-2007	0.17	4	5.91	12.25	16.92
2007-2008	0.13	4	17.66	12.25	5.66
2008-2009	0.22	3	12.93	12.25	7.74
2009-2010	0.38	3	24.73	11.75	4.04
2010-2011	0.35	3	25.07	12.75	3.99
2011-2012	0.60	4	16.38	14.75	6.10
2012-2013	0.77	4	27.61	14.45	3.62
2013-2014	0.43	4	1.48	14.75	67.51
Average	0.48	4	15.53	12.62	15.91

Table 5.12

Table Showing Ratio Analysis of National Fertilizers Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	7.77	26.09	6.09	1.05	0.78	4.61	6.14	10.84
2005-2006	5.72	11.22	4.07	1.04	1.21	3.23	4.98	6.85
2006-2007	3.81	21.85	3.68	1.17	1.51	4.56	6.81	9.30
2007-2008	4.24	21.75	3.36	1.77	1.30	2.58	3.75	7.72
2008-2009	6.10	27.61	3.75	1.72	1.33	1.87	3.56	6.63
2009-2010	5.56	27.47	2.06	2.62	2.19	3.33	5.92	10.84
2010-2011	4.63	28.39	1.56	2.12	1.76	2.37	4.11	8.28
2011-2012	3.63	14.14	10.24	1.11	0.93	1.73	1.98	7.22
2012-2013	2.41	16.09	16.63	1.13	1.02	-2.54	-1.54	-10.78
2013-2014	2.06	19.17	12.14	1.14	1.07	-1.12	-0.65	-6.00
Average	4.51	21.38	6.36	1.49	1.31	2.06	3.51	5.09

Table 5.12

Table Showing Ratio Analysis of National Fertilizers Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.05	2	7.53	10.25	11.03
2005-2006	0.18	4	7.69	10.75	13.00
2006-2007	0.24	2	4.27	12.25	23.41
2007-2008	0.48	2	8.40	12.25	11.90
2008-2009	0.26	2	3.10	12.25	32.21
2009-2010	0.33	2	3.08	11.75	32.46
2010-2011	0.42	2	5.22	12.75	19.17
2011-2012	1.07	7	3.38	14.75	29.59
2012-2013	3.64	8	-14.44	14.45	-6.93
2013-2014	4.27	5	-5.03	14.75	-19.89
Average	1.09	4	2.32	12.62	14.99

Table 5.13

Table Showing Ratio Analysis of Paradeep Phosphates Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	3.89	1.00	4.20	1.83	1.26	6.79	0.60	2.08
2005-2006	2.26	1.04	4.59	1.74	1.17	6.12	0.58	2.10
2006-2007	1.80	0.93	2.46	2.11	1.52	9.16	5.56	18.99
2007-2008	1.92	0.86	2.25	1.71	1.42	6.96	3.99	14.52
2008-2009	1.32	1.44	8.05	1.44	1.11	10.50	15.09	93.34
2009-2010	1.63	0.81	1.05	3.50	2.89	12.65	6.25	22.18
2010-2011	2.29	1.14	3.35	5.69	4.33	3.25	7.48	20.58
2011-2012	4.57	1.15	3.84	1.37	1.03	3.76	5.85	17.12
2012-2013	2.44	1.01	6.87	1.25	1.04	1.96	2.28	9.07
2013-2014	1.87	0.88	6.06	1.26	1.02	-2.98	-3.48	-12.39
Average	2.29	1.03	4.27	2.19	1.68	5.82	4.42	18.76

Table 5.13

Table Showing Ratio Analysis of Paradeep Phosphates Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	1.56	2	3.01	10.25	34.15
2005-2006	1.60	2	2.75	10.75	36.34
2006-2007	1.57	2	3.09	12.25	32.35
2007-2008	1.37	2	2.25	12.25	44.35
2008-2009	2.22	7	7.55	12.25	13.24
2009-2010	1.65	4	1.74	11.75	27.47
2010-2011	1.32	5	1.78	12.75	56.13
2011-2012	0.03	6	1.74	14.75	57.54
2012-2013	0.14	5	1.74	14.45	57.55
2013-2014	0.32	6	1.74	14.75	57.54
Average	1.18	4	1.74	12.62	57.55

Table 5.14

Table Showing Ratio Analysis of Rashtriya Chemicals & Fertilizers Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	3.28	6.54	2.30	2.78	1.87	8.24	6.16	11.00
2005-2006	2.88	7.35	2.01	2.29	1.67	8.50	5.63	10.83
2006-2007	2.28	4.92	1.48	4.27	2.78	8.13	4.65	10.26
2007-2008	2.60	8.18	1.84	2.26	1.40	6.02	3.99	10.28
2008-2009	2.09	18.23	1.93	1.98	1.62	6.89	3.90	12.59
2009-2010	2.05	33.01	1.42	2.24	1.98	8.67	4.79	12.79
2010-2011	6.44	22.56	1.94	1.85	1.41	8.54	6.54	12.18
2011-2012	4.54	5.46	3.23	1.40	0.98	7.18	4.44	11.48
2012-2013	2.97	5.72	5.86	1.42	1.00	4.15	4.82	11.93
2013-2014	2.46	8.21	5.12	1.58	1.24	3.79	4.45	9.96
Average	4.71	12.02	2.71	2.21	1.60	7.01	4.94	11.33

Table 5.14

Table Showing Ratio Analysis of Rashtriya Chemicals & Fertilizers Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.41	6	6.01	10.25	12.04
2005-2006	0.43	5	7.27	10.75	13.75
2006-2007	0.87	7	2.29	12.25	43.69
2007-2008	0.92	5	8.39	12.25	11.92
2008-2009	1.08	2	3.84	12.25	26.04
2009-2010	0.83	1	4.18	11.75	23.91
2010-2011	0.26	2	9.60	12.75	10.42
2011-2012	0.32	6	8.29	14.75	12.07
2012-2013	0.26	10	14.34	14.45	6.97
2013-2014	0.30	10	6.62	14.75	15.10
Average	0.57	5	7.08	12.62	18.21

Table 5.15

Table Showing Ratio Analysis of DCM Shriram Limited.

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	7.41	1.22	5.91	1.85	1.08	5.98	6.42	24.29
2005-2006	14.81	1.18	12.60	1.83	1.05	2.96	6.67	30.09
2006-2007	5.88	1.09	7.66	1.53	0.89	4.08	4.77	26.95
2007-2008	6.71	1.17	4.65	2.86	1.26	4.64	4.15	12.92
2008-2009	11.71	0.98	3.30	3.06	1.71	3.00	2.62	8.26
2009-2010	12.89	1.01	3.62	2.12	0.97	2.10	2.04	5.54
2010-2011	14.72	1.13	9.39	1.09	0.44	-0.74	-0.81	-2.43
2011-2012	9.57	1.14	25.93	1.11	0.53	-0.28	-0.31	-1.15
2012-2013	6.83	1.01	11.94	1.29	0.69	3.54	4.15	13.61
2013-2014	6.41	0.90	8.18	1.38	0.88	4.53	5.76	16.41
Average	9.69	1.08	9.32	1.81	0.95	2.98	3.55	13.45

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	1.84	4	75.03	10.25	1.33
2005-2006	2.38	5	6.50	10.75	15.40
2006-2007	3.06	5	3.02	12.25	33.15
2007-2008	1.68	5	131.51	12.25	0.76
2008-2009	1.71	3	9.94	12.25	10.07
2009-2010	1.20	3	8.48	11.75	11.79
2010-2011	0.81	4	-4.65	12.75	-21.49
2011-2012	0.85	5	-1.26	14.75	-79.59
2012-2013	0.69	5	20.61	14.45	4.85
2013-2014	0.63	5	10.62	14.75	9.42
Average	1.49	4	25.98	12.62	-1.43

Table 5.16

Table Showing Ratio Analysis of Bharat Earth Movers Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	3.30	2.85	3.18	1.53	1.02	10.12	8.66	23.86
2005-2006	2.99	3.23	2.98	1.60	1.07	9.08	8.80	21.25
2006-2007	2.90	3.40	3.05	1.70	1.10	8.45	9.00	19.83
2007-2008	2.12	3.04	1.95	2.27	1.60	8.89	6.67	13.23
2008-2009	1.84	1.87	1.27	3.25	1.89	9.61	6.48	14.04
2009-2010	1.95	2.40	0.98	4.27	2.53	7.85	5.07	10.94
2010-2011	2.26	1.90	1.21	1.88	0.85	5.25	3.51	6.99
2011-2012	2.83	1.13	1.51	2.03	0.81	2.07	1.16	2.63
2012-2013	3.52	1.14	1.42	1.99	0.81	-2.74	-1.53	-3.84
2013-2014	3.24	1.45	1.47	2.17	0.90	0.16	0.10	0.22
Average	2.64	2.24	1.90	2.27	1.26	5.87	4.79	10.91

Table 5.16

Table Showing Ratio Analysis of Bharat Earth Movers Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.11	10	4.43	10.25	22.59
2005-2006	0.03	10	5.01	10.75	19.97
2006-2007	0.03	10	3.28	12.25	30.51
2007-2008	0.18	13	16.11	12.25	6.21
2008-2009	0.30	25	5.72	12.25	17.49
2009-2010	0.45	22	5.18	11.75	19.31
2010-2011	0.13	17	7.90	12.75	12.66
2011-2012	0.36	13	4.92	14.75	20.34
2012-2013	0.51	11	-8.15	14.45	-12.28
2013-2014	0.47	11	0.14	14.75	708.21
Average	0.26	14	4.45	12.62	84.50

Table 5.17

Table Showing Ratio Analysis of Bharat Heavy Electrical Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	1.82	3.41	4.38	1.58	1.23	8.89	6.35	15.82
2005-2006	2.04	3.68	2.62	1.58	1.22	11.74	9.24	23.00
2006-2007	2.05	4.24	2.88	1.46	1.17	13.25	10.40	27.48
2007-2008	1.79	3.88	2.97	1.40	1.11	1079	9.32	26.54
2008-2009	1.88	3.70	3.54	1.29	1.02	10.79	7.48	24.11
2009-2010	1.79	3.77	4.32	1.32	1.03	13.12	8.85	27.12
2010-2011	2.04	3.89	2.98	1.74	1.30	14.07	10.14	29.83
2011-2012	2.03	3.57	2.57	1.70	1.23	14.30	10.54	27.75
2012-2013	1.71	4.12	2.21	1.83	1.41	13.89	9.43	21.73
2013-2014	1.34	3.99	1.55	2.04	1.65	9.02	4.75	10.47
Average	1.87	3.83	3.00	1.59	1.24	12.23	8.65	23.38

Table 5.17

Table Showing Ratio Analysis of Bharat Heavy Electrical Limited

Year	Debt Equity Ratio	Cash Conversion Cycle(Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.09	11	2.81	10.25	29.74
2005-2006	0.08	11	2.99	10.75	33.50
2006-2007	0.01	10	3.82	12.25	26.19
2007-2008	0.01	10	4.29	12.25	23.32
2008-2009	0.01	11	2.66	12.25	37.53
2009-2010	0.01	11	3.79	11.75	26.40
2010-2011	0.70	17	51.38	12.75	1.95
2011-2012	0.50	18	12.59	14.75	7.94
2012-2013	0.39	17	15.32	14.45	6.53
2013-2014	0.43	18	5.33	14.75	18.76
Average	0.22	13	10.50	12.62	20.24

Table 5.18

Table Showing Ratio Analysis of Tractors India Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	3.18	5.21	2.57	1.75	1.11	2.07	1.82	5.97
2005-2006	3.73	5.35	5.63	1.72	1.03	1.65	2.99	10.29
2006-2007	4.19	6.05	4.62	1.69	0.89	3.23	5.05	16.57
2007-2008	5.94	5.63	7.75	1.61	0.88	3.69	8.13	24.58
2008-2009	7.83	6.00	6.35	1.89	1.06	3.78	7.15	20.35
2009-2010	6.22	5.97	5.23	1.78	1.14	5.36	8.65	23.63
2010-2011	2.07	3.98	1.85	1.42	1.03	15.11	7.39	14.03
2011-2012	5.15	2.73	5.38	1.20	0.79	22.28	9.30	19.50
2012-2013	5.08	2.03	5.43	1.21	0.73	0.98	0.46	0.98
2013-2014	4.10	1.54	6.12	1.10	0.60	0.19	0.34	0.92
Average	4.83	4.45	4.76	1.54	0.93	5.90	5.13	13.68

Table 5.18

Table Showing Ratio Analysis of Tractors India Limited

Year	Debt Equity Ratio	Cash Conversion Cycle(Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.86	6	3.19	10.25	12.83
2005-2006	0.85	6	5.53	10.75	18.08
2006-2007	0.79	5	2.52	12.25	39.62
2007-2008	0.63	5	25.40	12.25	3.94
2008-2009	0.73	4	9.19	12.25	10.88
2009-2010	0.58	4	6.40	11.75	15.63
2010-2011	0.21	13	13.99	12.75	7.15
2011-2012	0.32	10	25.33	14.75	3.95
2012-2013	0.12	13	1.83	14.45	54.61
2013-2014	0.35	15	0.64	14.75	22.16
Average	0.54	8	9.40	12.62	19.23

Table 5.19

Table Showing Ratio Analysis of ISGEC Heavy Engineering Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	2.55	3.44	16.36	1.07	0.70	3.95	2.64	8.94
2005-2006	4.76	6.62	21.72	1.12	0.72	5.25	6.71	21.47
2006-2007	5.12	5.75	12.75	1.26	0.80	6.21	8.30	25.78
2007-2008	3.68	4.01	7.52	1.31	0.78	2.12	2.22	9.22
2008-2009	3.94	7.86	9.30	1.23	0.85	3.01	4.52	15.02
2009-2010	3.67	5.45	15.31	1.08	0.71	4.69	5.13	19.76
2010-2011	4.05	5.64	25.44	1.08	0.74	3.19	3.71	15.60
2011-2012	4.03	5.99	12.55	1.26	0.90	2.59	3.33	12.87
2012-2013	3.46	7.54	7.55	1.24	1.01	2.83	3.02	11.88
2013-2014	1.86	3.52	3.86	1.25	0.98	3.21	1.81	7.14
Average	4.06	5.58	13.24	1.19	0.82	3.71	4.14	14.77

Table 5.19

Table Showing Ratio Analysis of ISGEC Heavy Engineering Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.22	7	5.04	10.25	5.52
2005-2006	0.18	5	13.40	10.75	7.47
2006-2007	0.32	5	16.59	12.25	6.03
2007-2008	0.81	8	5.80	12.25	17.23
2008-2009	0.42	5	5.44	12.25	18.38
2009-2010	0.45	6	9.29	11.75	10.77
2010-2011	0.44	6	14.03	12.75	7.13
2011-2012	0.61	6	10.49	14.75	9.53
2012-2013	0.56	5	11.36	14.45	8.80
2013-2014	0.50	12	1.21	14.75	82.64
Average	0.45	7	9.26	12.62	18.66

Table 5.20

Table Showing Ratio Analysis of Heavy Engineering Corporation Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	1.28	1.02	1.88	0.36	0.21	-20.54	-11.70	-56.45
2005-2006	1.63	0.95	0.64	0.45	0.32	-5.50	-5.88	-17.10
2006-2007	2.74	1.14	1.22	0.39	0.21	-4.30	-0.81	-2.00
2007-2008	2.92	1.01	2.10	0.44	0.25	1.06	0.28	0.73
2008-2009	2.39	0.99	1.88	0.54	0.38	4.27	1.19	2.25
2009-2010	1.84	1.13	1.56	0.79	0.61	7.86	2.57	6.04
2010-2011	1.53	1.19	3.03	0.82	0.58	5.28	2.14	5.23
2011-2012	1.57	1.08	5.75	1.52	0.94	1.20	0.91	-5.04
2012-2013	1.84	0.96	3.50	1.37	0.85	2.76	2.11	-13.19
2013-2014	1.03	1.02	2.01	1.44	0.89	6.27	2.46	-16.32
Average	1.06	1.05	2.36	0.81	0.52	-0.16	-0.67	-9.59

Table 5.20

Table Showing Ratio Analysis of Heavy Engineering Corporation Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	2.47	28	0.42	10.25	12.74
2005-2006	0.54	31	-0.22	10.75	-456.62
2006-2007	0.32	26	-0.22	12.25	-458.72
2007-2008	0.39	27	0.92	12.25	108.81
2008-2009	0.00	26	4.05	12.25	24.67
2009-2010	0.15	23	7.30	11.75	13.69
2010-2011	0.12	25	6.29	12.75	15.89
2011-2012	-3.81	46	1.42	14.75	70.62
2012-2013	-4.10	51	3.36	14.45	29.74
2013-2014	-4.46	48	49.39	14.75	2.02
Average	-0.84	33	7.27	12.62	-64.99

Table 5.21

Table Showing Ratio Analysis of TATA Steel

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	25.86	14.06	3.46	1.10	0.60	23.96	21.93	49.21
2005-2006	25.86	7.08	3.73	1.11	0.54	23.16	19.03	35.94
2006-2007	29.87	7.69	3.20	2.51	2.08	24.06	15.08	30.27
2007-2008	33.39	10.84	3.60	5.46	5.08	23.80	22.87	17.17
2008-2009	45.42	9.36	2.89	1.15	0.76	21.39	7.68	17.24
2009-2010	58.27	10.90	1.10	1.36	1.02	20.17	6.89	13.65
2010-2011	44.27	8.07	7.11	1.38	1.08	23.36	7.67	14.63
2011-2012	39.90	7.62	5.94	0.75	0.47	19.23	6.97	12.73
2012-2013	48.73	8.05	6.65	0.70	0.38	12.95	4.97	9.17
2013-2014	108.23	7.71	1.02	0.61	0.29	15.09	5.77	10.49
Average	41.69	9.14	3.87	1.61	1.23	20.72	11.89	21.05

Table 5.21

Table Showing Ratio Analysis of TATA Steel

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.72	2	8.99	10.25	11.12
2005-2006	0.50	2	13.13	10.75	7.61
2006-2007	0.84	2	7.78	12.25	12.85
2007-2008	0.72	1	29.44	12.25	3.40
2008-2009	0.95	1	11.29	12.25	8.86
2009-2010	0.73	1	10.54	11.75	9.49
2010-2011	0.63	1	20.57	12.75	4.86
2011-2012	0.50	1	12.17	14.75	8.22
2012-2013	0.55	1	15.59	14.45	6.41
2013-2014	0.51	1	16.60	14.75	6.02
Average	0.66	1	14.61	12.62	7.88

Table 5.22

Table Showing Ratio Analysis of Steel Authority of India Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	15.05	6.96	7.51	1.41	0.99	23.06	24.55	66.90
2005-2006	13.28	4.68	6.11	1.40	0.90	14.40	13.02	31.85
2006-2007	12.65	5.36	5.21	1.65	1.11	18.28	17.61	35.82
2007-2008	13.00	8.62	3.49	2.24	1.65	19.08	17.83	32.68
2008-2009	13.25	5.86	2.69	2.02	1.43	14.28	11.39	21.92
2009-2010	3.87	6.02	2.05	2.28	1.75	16.66	9.88	20.27
2010-2011	3.62	5.13	2.49	1.51	1.34	11.48	6.45	13.23
2011-2012	8.55	3.37	4.34	1.52	1.27	7.39	4.64	8.90
2012-2013	9.22	2.79	6.38	1.20	0.49	4.75	2.58	5.29
2013-2014	17.36	3.45	5.04	0.95	0.41	5.50	2.85	6.13
Average	13.03	5.22	4.57	1.62	1.14	13.49	11.08	24.30

Table 5.22

Table Showing Ratio Analysis of Steel Authority of India Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.74	2	30.56	10.25	14.94
2005-2006	0.46	3	10.90	10.75	9.18
2006-2007	0.32	2	5.28	12.25	18.93
2007-2008	0.32	2	23.56	12.25	4.24
2008-2009	0.32	3	6.21	12.25	16.10
2009-2010	0.54	3	8.96	11.75	11.16
2010-2011	0.40	5	14.64	12.75	6.83
2011-2012	0.45	8	9.83	14.75	10.17
2012-2013	0.50	8	7.24	14.45	13.82
2013-2014	0.49	8	7.66	14.75	13.06
Average	0.45	4	12.48	12.62	11.50

Table 5.23

Table Showing Ratio Analysis of Adhunik Metaliks Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	2.37	10.18	0.72	2.31	1.83	5.45	1.23	3.38
2005-2006	4.72	5.39	0.67	2.69	2.04	7.98	0.06	0.15
2006-2007	4.92	3.36	4.39	2.06	0.98	10.55	0.08	0.29
2007-2008	6.04	4.25	4.16	1.85	1.02	8.01	0.05	0.25
2008-2009	7.22	3.61	3.26	2.31	1.21	2.53	1.45	9.51
2009-2010	5.00	3.16	3.03	1.85	0.93	4.16	2.19	8.76
2010-2011	5.18	2.48	2.91	2.08	1.01	3.64	2.77	9.78
2011-2012	4.94	2.10	2.62	2.54	1.26	-0.03	0.00	0.00
2012-2013	4.10	2.32	5.64	0.87	0.45	0.17	0.00	0.00
2013-2014	10.81	2.33	3.17	0.94	0.45	0.02	0.00	0.00
Average	7.46	3.92	2.63	1.95	1.12	4.25	0.78	3.21

Table 5.23

Table Showing Ratio Analysis of Adhunik Metaliks Limited

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	1.09	2	9.87	10.25	7.81
2005-2006	1.09	4	11.22	10.75	8.92
2006-2007	1.92	5	3.68	12.25	27.16
2007-2008	2.95	5	30.26	12.25	3.30
2008-2009	4.48	5	3.08	12.25	32.45
2009-2010	2.20	5	4.28	11.75	23.38
2010-2011	2.31	7	12.28	12.75	8.14
2011-2012	2.37	7	-0.09	14.75	36.25
2012-2013	0.74	9	0.66	14.45	51.65
2013-2014	1.06	9	0.59	14.75	67.96
Average	2.02	6	7.33	12.62	26.72

Table 5.24

Table Showing Ratio Analysis of Rashtriyo Ispat Nigam Limited

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	68.48	3.05	1.23	6.16	4.88	27.28	21.14	25.64
2005-2006	38.20	3.02	1.25	5.20	4.43	17.14	11.89	15.32
2006-2007	51.14	2.44	1.06	4.97	4.39	17.19	10.61	14.29
2007-2008	63.85	2.12	1.07	3.70	3.15	21.38	12.72	16.92
2008-2009	49.02	3.40	1.12	2.84	2.07	14.63	7.53	10.75
2009-2010	38.36	4.37	1.52	2.22	1.65	7.66	4.06	5.83
2010-2011	27.91	3.57	2.92	1.45	0.81	5.99	3.46	4.98
2011-2012	18.45	4.28	7.64	1.18	0.70	5.53	3.49	5.46
2012-2013	13.36	3.16	3.67	0.98	0.60	2.81	2.45	2.83
2013-2014	29.93	4.95	2.56	0.82	0.44	3.05	2.83	3.02
Average	39.87	3.44	2.40	2.95	2.31	12.27	8.02	10.50

Year	Debt Equity Ratio	Cash Conversion Cycle (Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	0.09	2	3.45	10.25	15.85
2005-2006	0.09	3	3.21	10.75	17.56
2006-2007	0.13	2	5.78	12.25	20.38
2007-2008	0.05	2	7.15	12.25	31.25
2008-2009	0.09	2	6.54	12.25	25.47
2009-2010	0.10	2	8.97	11.75	13.57
2010-2011	0.05	5	3.48	12.75	22.97
2011-2012	0.05	12	6.12	14.75	21.24
2012-2013	0.16	5	7.54	14.45	18.54
2013-2014	0.19	6	10.32	14.75	13.14
Average	0.10	4	9.97	12.62	14.85

Table 5.25

Table Showing Ratio Analysis of Jindal Steel & Power

Year	Debtors Turnover	Inventory turnover	WC Turnover Ratio	Current Ratio	Quick Ratio	NP Ratio (%)	ROA (%)	ROE (%)
2004-2005	26.94	8.83	6.51	1.18	0.72	13.03	7.62	27.62
2005-2006	26.06	7.55	17.48	1.18	0.78	13.91	7.51	19.84
2006-2007	29.37	6.99	18.74	1.09	0.64	15.03	9.89	23.10
2007-2008	31.05	7.01	16.99	0.75	0.37	15.13	8.40	22.51
2008-2009	29.13	9.08	83.93	0.61	0.34	3.27	1.63	5.76
2009-2010	28.00	8.85	19.91	0.73	0.39	11.11	6.55	20.84
2010-2011	11.66	4.34	10.71	0.77	0.54	8.91	7.82	23.75
2011-2012	11.44	4.37	3.26	0.70	0.47	15.61	6.29	19.46
2012-2013	10.36	4.69	2.35	0.84	0.58	10.54	4.00	12.90
2013-2014	19.91	4.15	1.76	0.76	0.53	8.88	2.80	9.89
Average	22.39	6.59	18.16	0.86	0.54	11.54	6.25	18.57

Table 5.25

Table Showing Ratio Analysis of Jindal Steel & Power

Year	Debt Equity Ratio	Cash Conversion Cycle(Weeks)	Cost of Equity (%)	Prime Lending Rate (%)	P/E Ratio
2004-2005	2.11	3	10.60	10.25	9.43
2005-2006	1.11	3	8.20	10.75	12.19
2006-2007	0.93	3	1.49	12.25	67.28
2007-2008	1.15	2	8.81	12.25	11.35
2008-2009	1.59	2	14.11	12.25	7.09
2009-2010	1.40	3	2.23	11.75	44.88
2010-2011	0.97	4	4.88	12.75	20.51
2011-2012	0.90	3	5.05	14.75	19.82
2012-2013	1.11	5	6.53	14.45	15.31
2013-2014	1.19	4	9.30	14.75	10.75
Average	1.24	3	7.12	12.62	21.86

5.6   Factor Analysis of Liquidity and Profitability Position;

In the above section the liquidity, profitability and turnover ratios have been calculated by using the related ratios for each of these positions and performance of the companies were analyzed. It can safely be said that not all those factors with their constituent ratios are not equally important in determining the performance of the companies. One of those factors may be more important than others in the sense of its explaining power or productive power. Further all the ratios may not move in the same directions to derive valid conclusion. An attempt is made here to club the homogenous ratios in the form of liquidity and profitability ratios through factor analysis and then the co-relation co-efficient between the principle factors of each ratio have been calculated and analyzed.

Automobile Industries;

Principal Component Factor Analysis of Ashok Leyland Limited;

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 97.297% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be

chosen whose Eigen value are greater than one. Further Bartlett's test of Sphericity is estimated to be 16.889 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 70.30% of the total sample variation and its Eigen value is 2.109. As the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of Sphericity is estimated to be 32.717and which is found significant at 1% probability level and KMO measure is 0.559; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.685.

Factor Analysis
Principal Component Factor Analysis of Ashok Leyland Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.946	97.297	0.986
2 Quick Ratio	0.054	2.703	0.986
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	16.889		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.109	70.307	0.455
2 ROA	0.885	29.508	0.964
3 ROE	0.006	0.186	0.986
Kaiser-Meyer-Olkin Measure	0.559		
Bartlett's Test of Sphericity	32.717		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = 0.685[*]

Principal Component Factor Analysis of Bajaj Auto Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 99.32% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 27.181 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table below that first principal component (or factor) i.e. net profit ratio represents 88.972% of the total sample variation and the Eigen value is 2.669. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 28.846 and which is found significant at 1% probability level and KMO measure is 0.560; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.082.

Principal Component Factor Analysis of Bajaj Auto Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.987	99.32	0.997
2 Quick Ratio	0.013	0.671	0.997
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	27.181		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.669	88.972	-0.892
2 ROA	0.309	10.307	0.949
3 ROE	0.022	0.726	0.987
Kaiser-Meyer-Olkin Measure	0.560		
Bartlett's Test of Sphericity	28.846		

Correlation Coefficient between Liquidity and Profitability
Ratio hare Current Ratio & Net Profit Ratio

r = 0.082[*]

Principal Component Factor Analysis of Eicher Motors Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 99.475 % of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 29.017 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 79.462% of the total sample variation and the Eigen value is 2.387. As the Eigen value of the first factor is only greater than one, so , to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of Sphericity is estimated to be 38.66 and which is found significant at 1% probability level and KMO measure is 0.556; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.383.

Principal Component Factor Analysis of Eicher Motors Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.990	99.475	0.997
2 Quick Ratio	0.010	0.525	0.997
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	29.017		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.384	79.462	-0.742
2 ROA	0.613	20.434	0.927
3 ROE	0.003	0.104	0.987
Kaiser-Meyer-Olkin Measure	0.556		
Bartlett's Test of Sphericity	38.660		

Correlation Coefficient between Liquidity and Profitability Ratio hare Current Ratio & Net Profit Ratio

$$r = 0.383^*$$

Principal Component Factor Analysis of Hindustan Motors

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 99.95% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 46.840 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 69.46% of the total sample variation and its Eigen value is 2.084. As the Eigen value of the first factor is only greater than one, so , to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of Sphericity is estimated to be 16.635 and which is found significant at 1% probability level and KMO measure is 0.568; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is (-) 0.145.

Principal Component Factor Analysis of Hindustan Motors

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.999	99.950	1.00
2 Quick Ratio	0.001	0.049	1.00
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	46.814		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.084	69.460	0.0892
2 ROA	0.861	28.714	0.982
3 ROE	0.055	1.823	-0.0571
Kaiser-Meyer-Olkin Measure	0.568		
Bartlett's Test of Sphericity	16.635		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = -0.145[*]

Principal Component Factor Analysis of Tata Motors Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 98.366% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 20.584 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 67.525% of the total sample variation and its Eigen value is 2.026. As the Eigen value of the first factor is only greater than one, so , to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 28.367 and which is found significant at 1% probability level and KMO measure is 0.551; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.532.

Principal Component Factor Analysis of Tata Motors Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.967	98.366	0.992
2 Quick Ratio	0.033	1.634	0.992
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	20.584		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.026	67.525	-0.266
2 ROA	0.964	32.150	0.992
3 ROE	0.010	0.326	0.985
Kaiser-Meyer-Olkin Measure	0.551		
Bartlett's Test of Sphericity	28.367		

Correlation Coefficient between Liquidity and Profitability
Ratio hare Current Ratio & Net Profit Ratio

r = 0.532 [*]

Cement Industries
Principal Component Factor Analysis of Everest Cement Industries
Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 95.160% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 12.687 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 92.909% of the total sample variation and its Eigen value is 2.787. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 33.142and which is found significant at 1% probability level and KMO measure is 0.563; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.370.

Principal Component Factor Analysis of Everest Cement Industries

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.903	95.160	0.975
2 Quick Ratio	0.097	4.480	-0.975
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	12.687		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.787	92.909	0.953
2 ROA	0.195	6.489	0.994
3 ROE	0.018	0.603	0.944
Kaiser-Meyer-Olkin Measure	0.563		
Bartlett's Test of Sphericity	33.142		

Correlation Coefficient between Liquidity and Profitability
Ratio hare Current Ratio & Net Profit Ratio

r = 0.370[*]

Principal Component Factor Analysis of ACC Cement

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 81.037% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 33.685 which is found to be significant at 1% probability level; and the KMO measure is 0.737, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 95.591% of the total sample variation and its Eigen value is 2.868. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 33.685 and which is found significant at 1% probability level and KMO measure is 0737; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.308.

Principal Component Factor Analysis of ACC Cement

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.621	81.037	0.900
2 Quick Ratio	0.379	18.963	0.900
Kaiser-Meyer-Olkin Measure	0.737		
Bartlett's Test of Sphericity	33.685		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.868	95.591	0.968
2 ROA	0.101	3.360	0.977
3 ROE	0.031	1.048	0988
Kaiser-Meyer-Olkin Measure	-0.737		
Bartlett's Test of Sphericity	33.685		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = 0.308[*]

Principal Component Factor Analysis of Grasim Industries Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 97.169% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 16.533 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 58.436% of the total sample variation and its Eigen value is 1.753. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 12.682 and which is found significant at 1% probability level and KMO measure is 0517; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.536.

Principal Component Factor Analysis of Grasim Industries Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.943	97.169	0.986
2 Quick Ratio	0.057	2.831	0.986
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	16.533		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	1.753	58.436	0.982
2 ROA	1.163	38.779	0.216
3 ROE	0.084	2.785	-0.389
Kaiser-Meyer-Olkin Measure	0.517		
Bartlett's Test of Sphericity	12.682		

Correlation Coefficient between Liquidity and Profitability Ratio hare Current Ratio & Net Profit Ratio

$$r = 0.536^{*}$$

Principal Component Factor Analysis of Dalmiya Cement (Bharat) Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 95.029% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 12.496 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 80.193% of the total sample variation and its Eigen value is 2.406. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 30.424 and which is found significant at 1% probability level and KMO measure is 0.573; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.091.

Principal Component Factor Analysis of Dalmiya Cement (Bharat) Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.901	95.029	0.975
2 Quick Ratio	0.990	4.971	0.975
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	12.496		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.406	80.193	0.897
2 ROA	0.584	19.467	0.993
3 ROE	0.010	0.340	0.785
Kaiser-Meyer-Olkin Measure	0.573		
Bartlett's Test of Sphericity	30.424		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = 0.091[*]

Principal Component Factor Analysis of JK Cement Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 89.795% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 7.527 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 99.255% of the total sample variation and its Eigen value is 2.978. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 57.691 and which is found significant at 1% probability level and KMO measure is 0.775; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.091.

Principal Component Factor Analysis of JK Cement Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.796	89.795	0.948
2 Quick Ratio	0.204	10.205	0.948
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	7.527		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.978	99.255	0.996
2 ROA	0.015	0.513	0.998
3 ROE	0.007	0.232	0.995
Kaiser-Meyer-Olkin Measure	0.775		
Bartlett's Test of Sphericity	57.691		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = 0.422[*]

Fertilizer Industries;
Principal Component Factor Analysis of Hindustan Insecticides Limited
Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 95.916% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 13.901 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 67.152% of the total sample variation and its Eigen value is 2.015. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 31.435 and which is found significant at 1% probability level and KMO measure is 0.500; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.008.

Principal Component Factor Analysis of Hindustan Insecticides Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.918	95.916	0.979
2 Quick Ratio	0.082	4.084	0.979
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	13.901		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.015	67.152	-0.205
2 ROA	0.979	32.638	0.995
3 ROE	0.006	0.210	0.991
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	31.435		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = 0.008[*]

Principal Component Factor Analysis of National Fertilizer Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 94.021% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 11.192 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 96.607% of the total sample variation and its Eigen value is 2.898. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 39.505 and which is found significant at 1% probability level and KMO measure is 0.704; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.192.

Principal Component Factor Analysis of National Fertilizer Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.880	94.021	0.970
2 Quick Ratio	0.120	5.979	0.970
Kaiser-Meyer-Olkin Measure		0.500	
Bartlett's Test of Sphericity		11.192	

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.898	96.607	0.993
2 ROA	0.085	2.850	0.983
3 ROE	0.016	0.543	0.972
Kaiser-Meyer-Olkin Measure		0.704	
Bartlett's Test of Sphericity		39.505	

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = 0.192[*]

Principal Component Factor Analysis of Paradeep Phosphate Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 99.712% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 33.510 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 81.196% of the total sample variation and its Eigen value is 2.436. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 19.004 and which is found significant at 1% probability level and KMO measure is 0.630; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.152.

Principal Component Factor Analysis of Paradeep Phosphate Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.994	99.712	0.999
2 Quick Ratio	0.006	0.288	0.999
Kaiser-Meyer-Olkin Measure		0.500	
Bartlett's Test of Sphericity		33.510	

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.436	81.196	0.791
2 ROA	0.507	16.900	0.961
3 ROE	0.057	1.904	0.942
Kaiser-Meyer-Olkin Measure		0.630	
Bartlett's Test of Sphericity		19.004	

Correlation Coefficient between Liquidity and Profitability
Ratio hare Current Ratio & Net Profit Ratio

r = 0.152[*]

Principal Component Factor Analysis of Rashtriya Chemicals & Fertilizer

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 97.476% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 17.389 which is found to be significant at 1% probability level; and the KMO measure is 0.521, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 54.635% of the total sample variation and its Eigen value is 2.436. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 2.779 and which is found significant at 1% probability level and KMO measure is 0.521; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.489.

Principal Component Factor Analysis of Rashtriya Chemicals & Fertilizer

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.950	97.476	0.987
2 Quick Ratio	0.050	2.524	0.987
Kaiser-Meyer-Olkin Measure	0.521		
Bartlett's Test of Sphericity	17.389		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	1.639	54.635	0.864
2 ROA	0.902	30.064	0.775
3 ROE	0.459	15.301	0.542
Kaiser-Meyer-Olkin Measure	0.521		
Bartlett's Test of Sphericity	2.779		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

$r = 0.489^*$

Principal Component Factor Analysis of DCM Sriram Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 96.641% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 15.310 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 90.754% of the total sample variation and its Eigen value is 2.723. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 26.975and which is found significant at 1% probability level and KMO measure is 0.602; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.400.

Principal Component Factor Analysis of DCM Sriram Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.993	96.641	0.983
2 Quick Ratio	0.067	3.359	0.983
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	15.310		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.723	90.754	0.926
2 ROA	0.242	8.074	0.988
3 ROE	0.035	1.172	0.943
Kaiser-Meyer-Olkin Measure	0.602		
Bartlett's Test of Sphericity	26.975		

Correlation Coefficient between Liquidity and Profitability
Ratio hare Current Ratio & Net Profit Ratio

r = 0.400[*]

Heavy Engineering Industries;
Principal Component Factor Analysis of Bharat Earth Movers Limited
Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 95.227% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 1.786 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 97.035% of the total sample variation and its Eigen value is 2.911. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 43.108 and which is found significant at 1% probability level and KMO measure is 0.682; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.144.

Principal Component Factor Analysis of Bharat Earth Movers Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.905	95.227	0.976
2 Quick Ratio	0.095	4.773	0.976
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	1.786		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.911	97.035	0.975
2 ROA	0.078	2.607	0.995
3 ROE	0.011	0.357	0.986
Kaiser-Meyer-Olkin Measure	0.682		
Bartlett's Test of Sphericity	43.108		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = 0.144[*]

Principal Component Factor Analysis of Bharat Heavy Electrical Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 98.608% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 21.746 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 93.281% of the total sample variation and its Eigen value is 2.798. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 26.995 and which is found significant at 1% probability level and KMO measure is 0.742; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is (-) 0.147.

Principal Component Factor Analysis of Bharat Heavy Electrical Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.972	98.608	0.993
2 Quick Ratio	0.028	1.396	0.993
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	21.746		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.798	93.281	0.963
2 ROA	0.144	4.810	0.980
3 ROE	0.057	1.909	0.954
Kaiser-Meyer-Olkin Measure	0.742		
Bartlett's Test of Sphericity	26.995		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = -0.147[*]

Principal Component Factor Analysis of Tractors India Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 92.968% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 10.060 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 78.355% of the total sample variation and its Eigen value is 2.351. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 32.620 and which is found significant at 1% probability level and KMO measure is 0.552; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is (-) 0.342.

Principal Component Factor Analysis of Tractors India Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.854	92.968	0.964
2 Quick Ratio	0.141	7.032	0.964
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	10.060		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.351	78.355	0.742
2 ROA	0.642	21.412	0.991
3 ROE	0.007	0.233	0.904
Kaiser-Meyer-Olkin Measure	0.552		
Bartlett's Test of Sphericity	32.620		

Correlation Coefficient between Liquidity and Profitability Ratio hare Current Ratio & Net Profit Ratio

r = -0.342[*]

Principal Component Factor Analysis of ISGEC Heavy Engineering Ltd

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 83.453% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 4.452 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 92.733% of the total sample variation and its Eigen value is 2.782. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 32.979 and which is found significant at 1% probability level and KMO measure is 0.660; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is (-) 0.358.

Principal Component Factor Analysis of ISGEC Heavy Engineering Ltd.

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.669	83.453	0.914
2 Quick Ratio	0.331	16.547	0.914
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	4.452		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.782	92.733	0.930
2 ROA	0.200	6.666	0.987
3 ROE	0.018	0.601	0.971
Kaiser-Meyer-Olkin Measure	0.660		
Bartlett's Test of Sphericity	32.979		

Correlation Coefficient between Liquidity and Profitability
Ratio hare Current Ratio & Net Profit Ratio

r = -0.358[*]

Principal Component Factor Analysis of Heavy Engineering Corporation Ltd.

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 99.310% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 26.979 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 92.592% of the total sample variation and its Eigen value is 2.778. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 28.515 and which is found significant at 1% probability level and KMO measure is 0.736; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.509.

Principal Component Factor Analysis of Heavy Engineering Corporation Ltd.

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.986	99.310	0.997
2 Quick Ratio	0.014	0.690	0.997
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	26.979		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.778	92.592	0.976
2 ROA	0.186	6.201	0.976
3 ROE	0.036	1.207	0.934
Kaiser-Meyer-Olkin Measure	0.736		
Bartlett's Test of Sphericity	28.515		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

$$r = 0.509^*$$

Steel Industries;
Principal Component Factor Analysis of Tata Steel
Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 99.987% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 41.217 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 80.446% of the total sample variation and its Eigen value is 2.413. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 11.782 and which is found significant at 1% probability level and KMO measure is 0.720; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.490.

Principal Component Factor Analysis of Tata Steel

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.998	99.987	0.999
2 Quick Ratio	0.002	0.103	0.999
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	41.217		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.413	80.446	0.869
2 ROA	0.371	12.353	0.925
3 ROE	0.216	7.201	0.895
Kaiser-Meyer-Olkin Measure	0.720		
Bartlett's Test of Sphericity	11.782		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

$r = 0.490^*$

Principal Component Factor Analysis of Steel Authority of India Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 96.620% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 15.266 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 96.084% of the total sample variation and its Eigen value is 2.883. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 38.053 and which is found significant at 1% probability level and KMO measure is 0.654; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.566.

Principal Component Factor Analysis of Steel Authority of India Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.932	96.620	0.983
2 Quick Ratio	0.068	3.380	0.983
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	15.266		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.883	96.084	0.971
2 ROA	0.100	3.346	0.975
3 ROE			
Kaiser-Meyer-Olkin Measure	0.654		
Bartlett's Test of Sphericity	38.053		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = 0.566[*]

Principal Component Factor Analysis of Adhunik Metaliks Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 93.382% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 10.481 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 65.355% of the total sample variation and its Eigen value is 1.961. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 0.947 and which is found significant at 1% probability level and KMO measure is 0.590; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.435.

Principal Component Factor Analysis of AdhunikMetaliks Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.868	93.382	0.966
2 Quick Ratio	0.132	6.618	0.966
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	10.481		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	1.961	65.355	-0.167
2 ROA	0.988	32.920	0.981
3 ROE	0.052	1.725	0.985
Kaiser-Meyer-Olkin Measure	0.590		
Bartlett's Test of Sphericity	0.947		

Correlation Coefficient between Liquidity and Profitability
Ratio hare Current Ratio & Net Profit Ratio

$$r = 0.435^*$$

Principal Component Factor Analysis of Rashtriyo Ispat Nigam Limited

Liquidity Factor

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 99.771% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 35.205 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 98.997% of the total sample variation and its Eigen value is 2.970. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 0.995 and which is found significant at 1% probability level and KMO measure is 0.557; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.933.

Principal Component Factor Analysis of RashtriyoIspat Nigam Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.995	99.771	0.999
2 Quick Ratio	0.005	0.229	0.999
Kaiser-Meyer-Olkin Measure		0.500	
Bartlett's Test of Sphericity		35.205	

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.970	98.997	0.991
2 ROA	0.029	0.966	0.994
3 ROE	0.001	0.037	0.999
Kaiser-Meyer-Olkin Measure		0.557	
Bartlett's Test of Sphericity		0.995	

Correlation Coefficient between Liquidity and Profitability
Ratio hare Current Ratio & Net Profit Ratio

r = 0.933[*]

Principal Component Factor Analysis of Jindal Steel & Power Limited

Liquidity Factor;

To construct liquidity factor, two variables namely current ratio and quick ratio have been clubbed through factor analysis and it is observed that first principal component (or factor) i.e. current ratio represents 96.074% of the total sampling variation of the two ratios and the Eigen value of the first factor is only greater than one, so according to Kaisers criterion only first principal component is to be chosen as the liquidity factor. It should be mentioned in this connection that according to Kaiser's criterion only that principal component will be chosen whose Eigen values are greater than one. Further Bartlett's test of sphericity is estimated to be 14.185 which is found to be significant at 1% probability level; and the KMO measure is 0.500, this implies that the principal component analysis is a fruitful exercise in clubbing the basic ratios i.e. current ratio and quick ratio.

Profitability Factors;

To construct profitability factor three ratios namely, net profit ratio, return on asset and return on equity have been clubbed and it is observed from the table that first principal component (or factor) i.e. net profit ratio represents 87.188% of the total sample variation and its Eigen value is 2.616. As the Eigen value of the first factor is only greater than one, so, according to Kaisers criterion only first component is to be chosen as the profitability factor. Further Bartlett's test of sphericity is estimated to be 0.922 and which is found significant at 1% probability level and KMO measure is 0.717; this implies that the principal component analysis is a fruit full exercise in clubbing the basis ratios i.e. NP Ratio, ROA and ROE.

Finally the co-relation of co-efficient between liquidity and profitability ratio here current ratio and net profit ratio is 0.503.

Principal Component Factor Analysis of Jindal Steel & Power Limited

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Liquidity Ratio			
1 Current Ratio	1.921	96.074	0.980
2 Quick Ratio	0.079	3.926	0.980
Kaiser-Meyer-Olkin Measure	0.500		
Bartlett's Test of Sphericity	14.185		

Factor	Eigen values	Percent of Variation	Factor Score Coefficient Matrix in Factor 1
Profitability Ratio			
1 Net Profit Ratio	2.616	87.188	0.887
2 ROA	0.313	10.417	0.968
3 ROE	0.072	2.395	0.945
Kaiser-Meyer-Olkin Measure	0.717		
Bartlett's Test of Sphericity	0.922		

Correlation Coefficient between Liquidity and Profitability

Ratio hare Current Ratio & Net Profit Ratio

r = 0.503[*]

Table No. 5.26

Summary of Correlation Analysis of Liquidity and Profitability after determining the principal component factor of liquidity and profitability ratios

Name of the Industries/Company	Value of "r"
Automobile Industries	
Ashok Leyland Limited	0.685
Bajaj Auto Limited	0.082
Eicher Motors Limited	0.383
Hindustan Motors	-0.145
Tata Motors Limited	0.532
Cement Industries	
Everest Cement Industries	0.370
ACC Cement	0.308
Grasim Industries Limited	0.536
Dalmiya Cement (Bharat) Limited	0.091
JK Cement Limited	0.422
Fertilizer Industries	
Hindustan Insecticides Limited	0.008
National Fertilizer Limited	0.192
Paradeep Phosphate Limited	0.152
Rashtriya Chemicals & Fertilizer	0.489
DCM Sriram Limited	0.400
Heavy Engineering Industries	
Bharat Earth Movers Limited	0.144
Bharat Heavy Electrical Limited	-0.147
Tractors India Limited	-0.342
ISGEC Heavy Engineering Ltd	-0.358
Heavy Engineering Corporation Ltd	0.509
Steel Industries	
Tata Steel	0.490
Steel Authority of India Limited	0.566
AdhunikMetaliks Limited	0.435
RashtriyoIspat Nigam Limited	0.933
Jindal Steel & Power Limited	0.503

5.7 Multiple Regression Analysis of selected companies of five different industries;

Multiple Regression Analysis between factors of profitability ratios and components of working capital. We have done multiple regression analysis between the profitability and liquidity ratios of the companies under different industries. The profitability ratios are Net Profit Ratio (NP), Return on Assets (ROA) and Return on Equity (ROE) and are taken as dependent variable, where Debtor turnover ratio, Inventory turnover ratio, working capital turnover ratio, current ratio and log value of Sales have been considered as independent ratios.

Ashok Leyland Limited

When net profit has been taken as dependent variable then co efficient of debtors turnover ratio and current ratio have found significant. Similarly when ROA and ROE has been taken as dependent variable then co efficient of current ratio and sales are found significant these result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Bajaj Auto Limited

When net profit has been taken as dependent variable then co efficient of inventory turnover ratio and current ratio have found significant. Similarly when ROA has been taken as dependent variables then co efficient of sales are found significant. When ROE has been taken as dependent variable then co efficient of inventory turnover ratio and sales found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Eicher Motors Limited

When net profit has been taken as dependent variable then co efficient of debtors turnover ratio have found significant. Similarly when ROA has been taken as dependent variables then co efficient of inventory turnover, current ratio and sales are found significant. When ROE has been taken as dependent variable then co efficient of inventory turnover ratio, current ratio and sales found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Everest Cement Industries

When net profit and ROA has been taken as dependent variable then co efficient of debtors turnover ratio have found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Grasim Industries limited

When net profit has been taken as dependent variable then co efficient of current ratio have found significant. Similarly when ROA has been taken as dependent variables then co efficient of inventory turnover, current ratio, working capital turnover ratio and sales are found significant. When ROE has been taken as dependent variable only co efficient sales has been found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

JK Cement Limited

When net profit has been taken as dependent variable then co efficient of debtors turnover ratio have found significant. Similarly when ROA has been taken as dependent variables then co efficient of debtors turnover ratio found significant. When ROE has been taken as dependent variable co efficient debtors turnover ratio has been found significant. These result shows that there is some relation between the working capital and profitability, specifically debtors turnover ratio in the most important because debtors turnover ratio is the only ratio found significant for all the three dependent variables. There may be some other factors influencing that equation that has not been considered.

Hindustan Insecticides Limited

When net profit has been taken as dependent variable then co efficient of debtors turnover ratio have found significant. Similarly when ROA has been taken as dependent variables then co efficient of debtors turnover ratio found significant. When ROE has been taken as dependent variable co efficient of sales has been found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

National Fertilizers Limited

When net profit and ROA has been taken as dependent variable then co efficient of sales have found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Paradeep Phosphates Limited

When net profit has been taken as dependent variable then co efficient of sales have found significant. Similarly when ROA has been taken as dependent variables then co efficient of inventory turnover ratio found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

DCM Shriram Limited

When ROA has been taken as dependent variables then co efficient of debtor's turnover ratio found significant. When ROE has been taken as dependent variable co efficient of debtors turnover ratio has also been found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Bharat Earth Movers Limited

When net profit has been taken as dependent variable then co efficient of current ratio have found significant. Similarly when ROA has been taken as dependent variables then co efficient of debtor's turnover ratio, working capital turnover ratio and current ratio are found significant. When ROE has been taken as dependent variable co efficient of debtor's turnover ratio and working capital turnover ratios are found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Bharat Heavy Electrical Limited

When net profit has been taken as dependent variable then co efficient of debtors turnover ratio have found significant. Similarly when ROA has been taken as dependent

variables then co efficient of debtor's turnover ratio is also found significant. When ROE has been taken as dependent variable co efficient of debtor's turnover ratio is found significant. These result shows that there is some relation between the working capital and profitability, specifically debtors turnover ratio, as we found that debtors turnover ratio is significant for all the three selected dependent variables. There may be some other factors influencing that equation that has not been considered.

Tractors India Limited

When ROA has been taken as dependent variables then co efficient of inventory turnover ratio found significant. Similarly when ROE has been taken as dependent variables then co efficient of inventory and current ratio are found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Adhunik Metaliks Limited

When ROA has been taken as dependent variables then co efficient of sales is found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Rashtriyo Ispat Nigam Limited

When ROA has been taken as dependent variables then co efficient of working capital turnover ratio, current ratio and sales are found significant. Similarly when ROE has been taken as dependent variables then co efficient of current ratio and sales are found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Steel Authority of India Limited

When ROA has been taken as dependent variables then co efficient of debtor's turnover ratio is found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

Tata Steel Limited

When net profit has been taken as dependent variables then co efficient of sales is found significant. These result shows that there is some relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

It is also observed that , there is insignificant co efficient found for Hindustan Motors Limited, Tata Motors Limited, ACC Limited, Dalmiya Cement (Bharat) Ltd, Rashtriya Chemicals & Fertilizers Limited, ISGEC Heavy Engineering Limited and Heavy Electrical Limited when net profit, ROA and ROE used as dependent variable. These result shows that there no such relation between the working capital and profitability. There may be some other factors influencing that equation that has not been considered.

5.8   SUMMARY OF THE CHAPTER

Intensive analysis of different components of working capital through ratio analysis from the total data set our findings are as follow;

Automobile Industries:

The average working capital turnover ratio of Bajaj Auto is 12.33 times and the Net Profit Percentage is 14.43% which is highest among the companies of automobile sector. A comparative study of the parameters between the selected five automobiles companies has surfaced the fact that the maximum profit is earned by the companies whose average working capital turnover is high. It has been observed that higher turnover rate of debtors and inventory directly affects cash conversion cycle. This fact has been reflected in the case of Bajaj Auto where the cash conversion cycle is one week and that of Ashok Leyland is 4 weeks due to lower turnover rate of debtors and inventory.

The study of the available data from 2004 to 2014 of these automobile companies reveal that the usage of internal fund is always suitable if the Prime Lending Rate set by RBI and Cost of Equity of the organization is taken into consideration. It is found that cost of equity is lower during the above mentioned period.

The detailed analysis of the data has pointed out that the positive fluctuation of Price Earnings (P/E) Ratio for all the companies except Hindustan Motors is an indication that performance and acceptability of the other four companies are better from the investor's point of view.

Cement Industry:

A detailed comparison amongst all the cement companies has brought out the fact that the working capital turnover rate for Everest cements is 14.72 times which is comparatively higher than the others but its profit percentage of 5.42% is comparatively low. Grasim cement with the working capital turnover 10.19 times can be termed the best among the selected five with the highest profit average 16.64%. Dalmia earns average profit 15.67% with working capital turnover 6.28 times. Current ratio for the selected cement companies can be pronounced to be almost ideal.

The findings have divulged the fact that the parameters of working capital and profit percentage are totally different for the cement industry as and when compared with the automobile industry. In Cement industry it is found that there is no relationship between working capital and net profit percentage which can be supported by the case of Dalmia Cement, where it has earned the profit of 15.67% with working capital turnover ratio 6.28 times.

In cement industry it is also found that current ratio is ideal but quick ratio is very low in nature. This is similar for almost all the selected cement companies.

We also found in our study that high turnover of debtors and inventory always affects cash conversion cycle which can be noted from the findings of ACC Cement.

The scrutinized study of the findings has surfaced the fact that, in the case of Everest Cement and JK cement the cost of equity is higher than PLR which might have been instrumental in the declined of the net profit percentage of these two companies with an exception for the 2005-2006.

Fertilizer Industry:

The findings are indicating that, in case of fertilizer companies, the net profit percentage is not irrelevantly high, though it has been proved to be a profit making industry. It is also found that with a higher turnover rate of working capital Sriram fertilizer projects low profit. Rastriyo Chemical Fertilizer earning a maximum profit 7.01% has a lowest average working capital turnover of 2.71 times. As previously observed in case of cement industry, here also we found that working capital dose not affects profit percentage.

Equity is found higher than debt for all the selected companies. Paradeep Phosphate maintained better debt equity ratio which of 1.18 times.

With a slow movement of debtors and inventory the fertilizer industry reveals a higher time periods of average cash conversion cycle as and when compared with automobile and cement industry. Only in case of HIL debtor's movement is comparatively better as in the case of NFCL whose Inventory turnover movement is better resulting in a low time periods of cash conversion cycle for both the organization within the industry.

The cost of equity is higher than the PLR for other companies except for NFCL and Rastriyo Chemical due to which the latter manifests a lower cost of equity providing a better picture of performance in all respect.

Heavy Engineering Industry;

The net profit of the selected Heavy Engineering companies is the indication of a profitable industry. Within the data of our study period, riches the highest profit at 11.99% on an average.

With a highest working capital turnover of 13.24 times ISGEC show an average net profit of 3.71%. Going back to BHEL, earn a maximum profit of 12.23%, where the working capital turnover ratio is found 3.0 times , thus it is again watch that, higher turnover rate of working capital dose not ensure the higher percentage of profit.

Amongst all the companies, BEML is the only company which has maintained a standardized current and quick ratio. Poor maintenance of current and quick ratio is observed for HEC and this company is also functioning differently within the five selected companies in respect of debt which is higher than equity. But a closer scrutiny reveals that the debt equity ratio is low in case of all the selected companies in the industries.

The cash conversion cycle for ISGEC is comparatively better comparing the other company within the industry which is found seven weeks. Along with a slowest cash conversion cycle Heavy Engineering Corporation also manifests a slow movement in the debtors and inventory turnover. The five selected companies reflect a similar performance for these two ratios.

A detail study of the provided data throws light on the fact that for the considered 10 years the average cost of equity is lower than the PLR for all the selected companies. But a sudden increase in this parameter is noticed from the year 2010-2011 only for HEC.

Steel Industry:

A detailed study ravels the fact that the performance of steel industry is much better as and when compared with the other four selected industries, as the net profit of the selected companies within the steel industry is better in comparison with automobile, fertilizer heavy engineering and cement. The average profit percentage of Tata Steel being 20.72% can earn it

the title of a best company amongst the selected few. The performance of Adhunick Metaliks when compare to other steel companies is not as good as it reflects the descending in profit from the year 2008-2009.On the other hand Tata Steel and SAIL have shown a better performance but the cost of equity being higher than the PLR.

Thus it can be inferred that working capital turnover rate and profitability in case of the selected steel companies is not directly related with each other.

With the little fluctuations, it has been found that the cash conversion in the arena of steel industry manifests stability due to a comparatively higher debtors and inventory turnover.

We have also done factor analysis for finding out the most dominating variables within our selected variables. We found that current ratio is the most dominating factor within liquidity ratio and net profit ratio is the most dominating factor within profitability ratios.We also calculate the co-relation co-efficient between those two variables.

After finding out the dominating factors we finally done multiple regression analysis and finds the significant variables.

Multiple Regression AnalysisResult - Ashok Leyland Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.485	9.465		.263	.806
	dtr	.435	.122	.732	3.571	.023
	itr	-.675	.412	-.369	-1.640	.176
	wct	-.188	.073	-.625	-2.571	.062
	cr	4.711	1.265	.837	3.725	.020
	y	-.315	.501	-.150	-.627	.564

a. Dependent Variable: np

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-43.523	11.247		-3.870	.018
	dtr	.181	.145	.210	1.247	.280
	itr	.182	.489	.069	.372	.729
	wct	-.164	.087	-.378	-1.888	.132
	cr	5.443	1.503	.669	3.622	.022
	y	3.073	.596	1.015	5.159	.007

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-522.457	160.930		-3.246	.031
	dtr	2.629	2.072	.263	1.269	.273
	itr	3.409	7.003	.111	.487	.652
	wct	-2.602	1.240	-.515	-2.098	.104
	cr	78.620	21.501	.830	3.657	.022
	y	34.533	8.524	.979	4.051	.015

a. Dependent Variable: roe

Multiple Regression Analysis Result – Bajaj Auto Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	25.151	21.297		1.181	.303
	dtr	.053	.121	.163	.436	.685
	itr	.939	.329	.646	2.852	.046
	wct	-.019	.221	-.023	-.087	.935
	cr	-3.068	3.458	-.190	-.887	.425
	y	-3.744	1.659	-.810	-2.256	.087

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-42.647	15.451		-2.760	.051
	dtr	.015	.088	.034	.167	.876
	itr	-.367	.239	-.190	-1.536	.199
	wct	.092	.161	.083	.571	.598
	cr	-2.905	2.509	-.135	-1.158	.311
	y	6.113	1.204	.995	5.078	.007

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-105.686	48.504		-2.179	.095
	dtr	.177	.276	.138	.642	.556
	itr	-2.699	.750	-.468	-3.600	.023
	wct	.595	.504	.179	1.180	.303
	cr	-4.278	7.877	-.067	-.543	.616
	y	19.931	3.779	1.086	5.274	.006

a. Dependent Variable: roe

Multiple Regression Analysis Result – Eicher Motors Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	29.413	14.607		2.014	.114
	dtr	.042	.016	.650	2.708	.050
	itr	-.207	.504	-.103	-.411	.702
	wct	-.559	.391	-.353	-1.428	.227
	cr	-2.139	2.696	-.200	-.793	.472
	y	-2.060	1.368	-.394	-1.505	.207

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-68.746	18.302		-3.756	.020
	dtr	.034	.020	.237	1.731	.159
	itr	-2.604	.631	-.588	-4.124	.015
	wct	-.692	.490	-.200	-1.411	.231
	cr	11.558	3.379	.492	3.421	.027
	y	13.168	1.715	1.149	7.680	.002

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-196.478	40.607		-4.839	.008
	dtr	.006	.043	.015	.149	.889
	itr	-7.277	1.401	-.533	-5.196	.007
	wct	-1.184	1.088	-.111	-1.088	.338
	cr	32.370	7.496	.446	4.318	.012
	y	37.057	3.804	1.047	9.742	.001

a. Dependent Variable: roe

Multiple Regression Analysis Result – Hindustan Motors Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-60.460	46.499		-1.300	.263
	dtr	-.203	.171	-.419	-1.188	.301
	itr	.978	.742	.475	1.318	.258
	wct	.417	.327	.451	1.277	.271
	cr	-.138	.730	-.064	-.190	.859
	y	4.888	4.354	.396	1.123	.324

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-84.478	97.752		-.864	.436
	dtr	-.492	.359	-.525	-1.372	.242
	itr	1.232	1.561	.309	.789	.474
	wct	.380	.687	.212	.553	.610
	cr	-1.036	1.535	-.245	-.675	.537
	y	7.397	9.152	.309	.808	.464

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-277.929	809.782		-.343	.749
	dtr	1.641	2.971	.263	.552	.610
	itr	4.274	12.929	.161	.331	.758
	wct	3.784	5.693	.316	.665	.543
	cr	-5.209	12.714	-.185	-.410	.703
	y	21.353	75.819	.134	.282	.792

a. Dependent Variable: roe

Multiple Regression Analysis Result – Tata Motors Limited

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	20.866	10.005		2.085	.105
	dtr	.176	.177	.468	.997	.375
	itr	.034	.635	.021	.054	.959
	wct	-.096	.141	-.173	-.681	.534
	cr	-.805	4.773	-.083	-.169	.874
	y	-1.496	.549	-.963	-2.724	.053

a. Dependent Variable: np

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-399.925	111.679		-3.581	.023
	dtr	.633	1.974	.101	.321	.765
	itr	13.295	7.089	.483	1.876	.134
	wct	1.775	1.575	.191	1.127	.323
	cr	98.336	53.271	.609	1.846	.139
	y	13.536	6.131	.521	2.208	.092

a. Dependent Variable: roa

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1066.321	435.170		-2.450	.070
	dtr	2.876	7.693	.154	.374	.727
	itr	39.615	27.622	.486	1.434	.225
	wct	6.437	6.138	.234	1.049	.353
	cr	238.665	207.577	.499	1.150	.314
	y	33.297	23.890	.433	1.394	.236

a. Dependent Variable: roe

Multiple Regression Analysis Result - ACC Cement Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	80.974	34.705		2.333	.080
	dtr	.000	.166	-.002	-.005	.996
	itr	.452	.239	.791	1.890	.132
	wct	.328	.413	.297	.794	.471
	cr	2.719	6.747	.144	.403	.708
	y	-8.481	4.080	-.726	-2.079	.106

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	31.067	44.849		.693	.527
	dtr	-.126	.215	-.296	-.586	.589
	itr	.574	.309	1.016	1.856	.137
	wct	.454	.534	.416	.850	.443
	cr	9.143	8.719	.491	1.049	.354
	y	-3.698	5.273	-.320	-.701	.522

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	107.067	79.243		1.351	.248
	dtr	-.204	.379	-.249	-.537	.620
	itr	.863	.546	.794	1.580	.189
	wct	.670	.944	.319	.710	.517
	cr	16.420	15.406	.459	1.066	.347
	y	-12.204	9.316	-.550	-1.310	.260

a. Dependent Variable: roe

Multiple Regression Analysis Result Dalmiya (Bharat) Cement Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	108.458	61.408		1.766	.152
	dtr	-.966	1.505	-.447	-.642	.556
	itr	.094	1.354	.047	.069	.948
	wct	-.086	.183	-.196	-.472	.662
	cr	-.104	1.415	-.033	-.074	.945
	y	-8.302	4.957	-.692	-1.675	.169

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	40.547	23.731		1.709	.163
	dtr	-.445	.582	-.559	-.764	.487
	itr	-.069	.523	-.095	-.132	.901
	wct	-.021	.071	-.128	-.295	.783
	cr	-.318	.547	-.276	-.581	.593
	y	-2.883	1.916	-.652	-1.505	.207

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	133.982	77.146		1.737	.157
	dtr	-1.635	1.891	-.543	-.865	.436
	itr	-1.427	1.701	-.519	-.839	.449
	wct	.020	.230	.032	.086	.935
	cr	-2.452	1.778	-.563	-1.379	.240
	y	-8.860	6.228	-.529	-1.423	.228

a. Dependent Variable: roe

Multiple Regression Analysis Result – Everest Cement Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.982	17.017		-.058	.957
	dtr	.210	.043	1.155	4.910	.008
	itr	.708	.648	.168	1.093	.336
	wct	-.051	.054	-.243	-.938	.401
	cr	-2.967	1.513	-.548	-1.961	.121
	y	.161	1.430	.031	.113	.916

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-25.208	25.767		-.978	.383
	dtr	.310	.065	1.247	4.781	.009
	itr	1.948	.981	.338	1.986	.118
	wct	-.080	.082	-.281	-.978	.383
	cr	-4.736	2.291	-.641	-2.068	.108
	y	2.008	2.166	.283	.927	.406

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	133.982	77.146		1.737	.157
	dtr	-1.635	1.891	-.543	-.865	.436
	itr	-1.427	1.701	-.519	-.839	.449
	wct	.020	.230	.032	.086	.935
	cr	-2.452	1.778	-.563	-1.379	.240
	y	-8.860	6.228	-.529	-1.423	.228

a. Dependent Variable: roe

Multiple Regression Analysis Result – Grasim Cements Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-187.432	84.431		-2.220	.091
	dtr	-.297	.698	-.241	-.425	.693
	itr	.903	.475	1.401	1.900	.130
	wct	-1.143	.469	-1.512	-2.434	.072
	cr	8.023	2.659	1.506	3.018	.039
	y	21.514	9.454	1.656	2.276	.085

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-136.249	26.547		-5.132	.007
	dtr	-.499	.219	-.656	-2.275	.085
	itr	.815	.149	2.048	5.451	.006
	wct	-.549	.148	-1.177	-3.722	.020
	cr	3.808	.836	1.158	4.556	.010
	y	15.798	2.973	1.971	5.315	.006

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-295.072	111.429		-2.648	.057
	dtr	-2.031	.921	-.931	-2.205	.092
	itr	1.501	.627	1.315	2.393	.075
	wct	-.766	.620	-.572	-1.236	.284
	cr	3.459	3.509	.367	.986	.380
	y	36.016	12.477	1.566	2.887	.045

a. Dependent Variable: roe

Multiple Regression Analysis Result – J.K Cement Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	76.190	65.939		1.155	.312
	dtr	.794	.321	1.834	2.477	.048
	itr	-.121	.088	-.638	-1.372	.242
	wct	.689	1.078	.476	.639	.558
	cr	2.332	3.531	.262	.661	.545
	y	-9.115	6.973	-1.105	-1.307	.261

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	68.412	48.194		1.420	.229
	dtr	.701	.234	2.044	2.993	.040
	itr	-.123	.064	-.820	-1.912	.129
	wct	.732	.788	.638	.929	.405
	cr	2.415	2.581	.342	.936	.402
	y	-8.346	5.097	-1.276	-1.638	.177

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	106.890	97.867		1.092	.336
	dtr	1.219	.476	1.970	2.562	.042
	itr	-.223	.131	-.826	-1.712	.162
	wct	1.100	1.601	.531	.687	.530
	cr	3.291	5.240	.258	.628	.564
	y	-13.073	10.350	-1.109	-1.263	.275

a. Dependent Variable: roe

Multiple Regression Analysis Result - Hindustan Insecticides Limited

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-16.402	33.779		-.486	.653
	dtr	2.603	.980	.796	2.655	.047
	itr	.977	1.464	.189	.667	.541
	wct	.085	.742	.041	.114	.914
	cr	2.736	5.476	.166	.500	.644
	y	-1.744	3.530	-.141	-.494	.647

a. Dependent Variable: np

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	118.589	21.661		5.475	.005
	dtr	-1.477	.629	-.421	-2.349	.049
	itr	1.382	.939	.249	1.471	.215
	wct	.189	.476	.084	.397	.712
	cr	-.916	3.511	-.052	-.261	.807
	y	-10.564	2.264	-.795	-4.667	.010

a. Dependent Variable: roa

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	392.129	91.892		4.267	.013
	dtr	-5.670	2.667	-.456	-2.126	.101
	itr	6.385	3.983	.325	1.603	.184
	wct	.936	2.017	.118	.464	.667
	cr	-2.881	14.896	-.046	-.193	.856
	y	-35.179	9.603	-.747	-3.663	.022

a. Dependent Variable: roe

Multiple Regression Analysis Result – National Fertilizer Corporation Limited

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	51.196	29.720		1.723	.160
	dtr	.218	.560	.163	.390	.716
	itr	.015	.144	.040	.104	.922
	wct	-.263	.355	-.217	-.741	.500
	cr	.863	1.502	.206	.574	.596
	y	-5.982	3.274	-.779	-1.827	.142

a. Dependent Variable: np

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	74.626	28.045		2.661	.056
	dtr	.075	.528	.046	.142	.894
	itr	.028	.136	.061	.207	.846
	wct	-.426	.335	-.286	-1.272	.272
	cr	1.684	1.418	.328	1.188	.301
	y	-8.610	3.090	-.915	-2.787	.049

a. Dependent Variable: roa

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	77.747	111.664		.696	.525
	dtr	1.792	2.103	.418	.852	.442
	itr	-.094	.543	-.078	-.173	.871
	wct	-.437	1.335	-.113	-.328	.760
	cr	5.529	5.645	.412	.980	.383
	y	-10.059	12.302	-.410	-.818	.459

a. Dependent Variable: roe

Multiple Regression Analysis Result – Paradeep Phosphate Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	83.106	32.282		2.574	.062
	dtr	1.530	2.955	.275	.518	.632
	itr	24.577	10.412	.998	2.360	.078
	wct	-.181	1.081	-.087	-.168	.875
	cr	1.165	1.587	.358	.734	.504
	y	-8.629	3.550	-1.288	-2.431	.049

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.832	39.754		.398	.711
	dtr	2.858	3.639	.465	.785	.476
	itr	36.179	12.822	1.329	2.822	.048
	wct	-.886	1.331	-.387	-.666	.542
	cr	1.652	1.955	.460	.845	.445
	y	-4.396	4.372	-.593	-1.006	.372

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.520	15.646		.608	.576
	dtr	.354	.411	.445	.862	.438
	itr	.092	.049	.852	1.886	.132
	wct	.372	.599	.569	.621	.569
	cr	-.106	.592	-.088	-.179	.867
	y	-.217	1.898	-.105	-.114	.915

a. Dependent Variable: roe

Multiple Regression Analysis Result - Rashtriya Chemicals & Fertilizers Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	38.539	16.030		2.404	.074
	dtr	.032	.421	.023	.076	.943
	itr	.083	.050	.434	1.674	.170
	wct	.298	.614	.256	.485	.653
	cr	-.206	.606	-.096	-.340	.751
	y	-4.132	1.945	-1.123	-2.125	.101

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.986	13.290		1.654	.173
	dtr	.464	.349	.668	1.331	.254
	itr	.079	.041	.845	1.925	.127
	wct	1.284	.509	2.247	2.523	.065
	cr	.182	.503	.173	.363	.735
	y	-3.012	1.612	-1.670	-1.868	.135

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.520	15.646		.608	.576
	dtr	.354	.411	.445	.862	.438
	itr	.092	.049	.852	1.886	.132
	wct	.372	.599	.569	.621	.569
	cr	-.106	.592	-.088	-.179	.867
	y	-.217	1.898	-.105	-.114	.915

a. Dependent Variable: roe

Multiple Regression Analysis Result – DCM Sriram Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.831	26.800		.479	.657
	dtr	4.651	1.857	.734	2.504	.066
	itr	-6.025	7.993	-.292	-.754	.493
	wct	-.082	.138	-.256	-.593	.585
	cr	1.165	1.121	.378	1.039	.357
	y	-.951	2.525	-.159	-.376	.726

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-22.257	23.904		-.931	.405
	dtr	7.381	1.656	.946	4.456	.011
	itr	-.809	7.130	-.032	-.113	.915
	wct	-.156	.123	-.395	-1.262	.276
	cr	1.482	1.000	.390	1.483	.212
	y	2.462	2.252	.334	1.093	.336

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-135.189	80.595		-1.677	.169
	dtr	32.221	5.585	.964	5.770	.004
	itr	18.211	24.039	.167	.758	.491
	wct	-.730	.416	-.432	-1.756	.154
	cr	5.008	3.371	.308	1.485	.212
	y	12.629	7.594	.400	1.663	.172

a. Dependent Variable: roe

Multiple Regression Analysis Result – Bharat Earth Movers Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	134.561	53.357		2.522	.065
	dtr	-5.918	1.041	-.792	-5.686	.005
	itr	-.042	1.058	-.008	-.039	.971
	wct	4.227	1.861	.790	2.271	.086
	cr	1.756	.673	.332	2.610	.050
	y	-10.040	4.162	-.391	-2.412	.073

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	37.975	42.640		.891	.423
	dtr	-3.896	.832	-.615	-4.685	.009
	itr	.343	.845	.077	.406	.706
	wct	4.769	1.487	1.051	3.206	.033
	cr	1.305	.538	.291	2.427	.072
	y	-2.868	3.326	-.132	-.862	.437

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	235.048	118.509		1.983	.118
	dtr	-8.143	2.312	-.527	-3.523	.024
	itr	-.378	2.350	-.035	-.161	.880
	wct	10.783	4.134	.975	2.609	.050
	cr	3.502	1.494	.321	2.344	.079
	y	-18.494	9.245	-.348	-2.000	.116

a. Dependent Variable: roe

Multiple Regression Analysis Result – Bharat Heavy Electrical Limited

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-28.834	16.011		-1.801	.146
	dtr	6.056	2.440	.658	2.482	.048
	itr	2.603	2.283	.323	1.140	.318
	wct	.020	.908	.011	.022	.984
	cr	-1.204	4.326	-.141	-.278	.795
	y	2.122	1.647	.553	1.288	.267

a. Dependent Variable: np

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-23.477	12.477		-1.882	.133
	dtr	7.507	1.901	.875	3.948	.017
	itr	2.366	1.779	.315	1.330	.254
	wct	.001	.708	.001	.002	.999
	cr	-.606	3.371	-.076	-.180	.866
	y	.981	1.284	.275	.764	.487

a. Dependent Variable: roa

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-56.562	28.167		-2.008	.115
	dtr	19.103	4.292	.697	4.451	.011
	itr	3.813	4.017	.159	.949	.396
	wct	.672	1.598	.129	.421	.696
	cr	-8.638	7.611	-.340	-1.135	.320
	y	4.086	2.898	.358	1.410	.231

a. Dependent Variable: roe

Multiple Regression Analysis Result – Heavy Engineering Corporation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-84.814	58.291		-1.455	.219
	dtr	36.985	46.978	.574	.787	.475
	itr	-18.142	31.151	-.178	-.582	.592
	wct	.007	.710	.006	.010	.993
	cr	7.805	9.874	.433	.790	.474
	y	5.491	9.134	.401	.601	.580

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-55.286	27.479		-2.012	.115
	dtr	19.382	22.147	.544	.875	.431
	itr	-6.046	14.685	-.107	-.412	.702
	wct	.067	.335	.097	.201	.851
	cr	3.619	4.655	.364	.777	.480
	y	3.531	4.306	.466	.820	.458

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-316.308	155.756		-2.031	.112
	dtr	30.991	125.529	.216	.247	.817
	itr	.736	83.238	.003	.009	.993
	wct	.481	1.896	.173	.253	.812
	cr	-20.411	26.385	-.510	-.774	.482
	y	27.324	24.407	.897	1.120	.326

a. Dependent Variable: roe

Multiple Regression Analysis Result - ISGEC Heavy Engineering Limited

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.620	16.534		.219	.837
	dtr	.739	.727	.613	1.016	.367
	itr	-.050	.336	-.060	-.150	.888
	wct	-.050	.167	-.256	-.298	.781
	cr	-4.886	9.406	-.344	-.519	.631
	y	.359	.955	.162	.375	.726

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-17.992	21.854		-.823	.457
	dtr	.840	.960	.438	.875	.431
	itr	.320	.444	.240	.719	.512
	wct	.080	.221	.259	.362	.736
	cr	3.953	12.432	.175	.318	.766
	y	1.043	1.263	.297	.826	.455

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-57.903	63.975		-.905	.417
	dtr	1.121	2.812	.201	.399	.710
	itr	1.126	1.301	.290	.866	.435
	wct	.476	.646	.529	.736	.502
	cr	14.650	36.393	.223	.403	.708
	y	3.557	3.697	.347	.962	.390

a. Dependent Variable: roe

Multiple Regression Analysis Result – Tractor India Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	208.729	81.411		2.564	.062
	dtr	2.463	2.173	.602	1.133	.320
	itr	9.091	5.038	2.244	1.804	.146
	wct	.554	2.276	.144	.243	.820
	cr	-38.823	31.099	-1.545	-1.248	.280
	y	-18.492	9.141	-1.535	-2.023	.113

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	66.953	34.007		1.969	.120
	dtr	1.758	.908	.878	1.937	.125
	itr	5.820	2.105	2.936	2.765	.050
	wct	-.182	.951	-.097	-.191	.857
	cr	-26.057	12.991	-2.120	-2.006	.115
	y	-5.161	3.819	-.876	-1.351	.248

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	104.956	58.986		1.779	.150
	dtr	3.726	1.575	.732	2.366	.077
	itr	13.676	3.651	2.714	3.746	.020
	wct	-.295	1.649	-.062	-.179	.867
	cr	-61.616	22.533	-1.972	-2.734	.050
	y	-6.906	6.623	-.461	-1.043	.356

a. Dependent Variable: roe

Multiple Regression Analysis Result – Adhunik Metaliks Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.415	7.144		.058	.956
	dtr	-.200	1.356	-.181	-.148	.890
	itr	.834	1.832	.542	.455	.672
	wct	.641	.758	.345	.845	.446
	cr	2.353	2.673	.387	.880	.428
	y	-.486	.642	-.302	-.758	.491

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.224	.888		-3.631	.022
	dtr	-.034	.169	-.110	-.204	.848
	itr	.061	.228	.141	.269	.801
	wct	.001	.094	.002	.009	.993
	cr	.159	.332	.093	.478	.657
	y	.428	.080	.942	5.364	.006

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-14.291	1.745		-8.188	.001
	dtr	-.525	.331	-.405	-1.584	.188
	itr	.539	.448	.299	1.203	.295
	wct	.126	.185	.058	.679	.534
	cr	1.366	.653	.192	2.091	.105
	y	1.881	.157	.999	11.995	.080

a. Dependent Variable: roe

Multiple Regression Analysis Result – Jindal Steel and Power Limited

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	111.744	102.866		1.086	.338
	dtr	-.475	.679	-.482	-.700	.522
	itr	-.409	.894	-.216	-.457	.671
	wct	.491	.827	.600	.594	.585
	cr	-18.413	31.249	-1.001	-.589	.587
	y	-7.859	7.954	-.868	-.988	.379

a. Dependent Variable: np

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.494	67.477		-.081	.939
	dtr	-.075	.445	-.111	-.168	.875
	itr	.209	.586	.162	.357	.739
	wct	.562	.542	1.004	1.036	.359
	cr	-2.972	20.499	-.236	-.145	.892
	y	1.620	5.218	.262	.310	.772

a. Dependent Variable: roa

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.125	143.843		-.008	.994
	dtr	-.543	.949	-.309	-.572	.598
	itr	1.115	1.250	.330	.892	.423
	wct	2.102	1.156	1.438	1.818	.143
	cr	-25.223	43.698	-.768	-.577	.595
	y	4.932	11.123	.305	.443	.680

a. Dependent Variable: roe

Multiple Regression Analysis Result - Rashtriyo Ispat Nigam Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-200.482	222.141		-.902	.418
	dtr	-6.090	3.978	-.327	-1.531	.201
	itr	-1.078	1.713	-.113	-.629	.564
	wct	-1.330	.993	-.359	-1.339	.252
	cr	5.266	2.446	1.218	2.153	.098
	y	22.789	23.663	.601	.963	.390

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-322.137	111.392		-2.892	.044
	dtr	-4.994	1.995	-.374	-2.503	.067
	itr	.271	.859	.039	.315	.768
	wct	-1.389	.498	-.522	-2.788	.049
	cr	5.892	1.226	1.898	4.804	.009
	y	34.761	11.866	1.277	2.929	.043

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-305.519	151.354		-2.019	.114
	dtr	-5.567	2.711	-.339	-2.054	.109
	itr	-.068	1.167	-.008	-.058	.957
	wct	-1.315	.677	-.402	-1.943	.124
	cr	6.310	1.667	1.653	3.786	.019
	y	33.260	16.123	.994	2.063	.108

a. Dependent Variable: roe

Multiple Regression Analysis Result – Steel Authority of India Limited

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	96.224	64.250		1.498	.209
	dtr	.990	.485	.443	2.042	.111
	itr	.759	.685	.220	1.108	.330
	wct	-.826	.405	-.225	-2.039	.111
	cr	1.815	1.936	.129	.937	.402
	y	-9.400	5.696	-.294	-1.650	.174

a. Dependent Variable: np

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.041	90.006		.023	.983
	dtr	1.923	.679	.724	2.831	.047
	itr	1.624	.960	.396	1.692	.166
	wct	-.282	.567	-.065	-.498	.645
	cr	-4.061	2.713	-.244	-1.497	.209
	y	-1.594	7.979	-.042	-.200	.851

a. Dependent Variable: roa

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	268.997	326.540		.824	.456
	dtr	4.098	2.464	.601	1.663	.172
	itr	2.651	3.483	.252	.761	.489
	wct	-2.580	2.058	-.231	-1.254	.278
	cr	-14.301	9.842	-.334	-1.453	.220
	y	-26.387	28.949	-.270	-.911	.414

a. Dependent Variable: roe

Multiple Regression Analysis Result – Tata Steel Limited

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	110.051	20.921		5.260	.006
	dtr	.118	.050	.427	2.373	.077
	itr	.054	.162	.030	.330	.758
	wct	.238	.090	.326	2.658	.057
	cr	.551	.234	.204	2.360	.078
	y	-9.496	2.188	-.934	-4.340	.012

a. Dependent Variable: np

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	95.104	85.414		1.113	.328
	dtr	-.154	.203	-.310	-.760	.490
	itr	.193	.662	.060	.291	.785
	wct	.058	.366	.044	.157	.883
	cr	1.641	.954	.337	1.721	.160
	y	-8.041	8.934	-.438	-.900	.419

a. Dependent Variable: roa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	276.860	140.765		1.967	.121
	dtr	-.241	.335	-.261	-.719	.512
	itr	.691	1.091	.115	.633	.561
	wct	.145	.603	.059	.240	.822
	cr	-3.256	1.572	-.361	-2.071	.107
	y	-24.443	14.724	-.721	-1.660	.172

a. Dependent Variable: roe

Variables;

np	=	Net Profit
roa	=	Return on Asset
roe	=	Return on Equity
dtr	=	Debtors Turnover Ratio
itr	=	Inventory Turnover Ratio
wct	=	Working Capital Turnover Ratio
cr	=	Current Ratio
y	=	Arithmetic Log of Sales Value

CHAPTER VI

SUMMARY AND CONCLUSION

6.1 SUMMARY OF THE STUDY

From an in depth analysis of earlier research works it is found that invention of new techniques and methods are always useful for all kind of business organization from multinational companies to small scale enterprise. Researchers are always trying to contribute new idea and tools for the betterment of the organization. We go through the research article as many as possible to get the clear idea about the contribution of the previous researchers. We observed in many study that operating cycle is one of the most important factor for working capital and profitability. Size of the firm is also found to be an important factor which has a significant role on the profitability of the firm. Earlier researchers focused on different components of working capital in different way. Some article focused on cash conversion cycle and found that proper management of receivable and payable activity has positive effect on working capital. Some article found that working capital and profitability has no such relation, but at the same time it is found that many individual components of working capital and profit are closely depends on each other. But most of study has suffers from the loop holes those are;

1. Most of the study consider only cash conversion cycle for working capital study.

2. Data volume is very low in number , 5-10 years of single company

3. Effect of change of interest rate have not been considered

4.   Impact of factors like cost of capital, cost of equity, P/E on working capital has not

been considered.

5. Comparative analysis of various sectors on working capital management has not been covered.

6. Intensive analysis of different components of working capital from the total data set may summaries as follow;

To access the performance of the selected twenty five companies of five different Indian industries thus, automobile, cement, fertilizer, heavy engineering and steel we have collected data from the published financial report of each company. We have also collected data on consumer price index –annual average of industrial workers and agricultural laborer published by RBI. We have selected twenty five company out of many company listed in NSE by a random selection programme written by Java language. Trend equation; namely, log-quadratic have been fitted to different performance parameters for estimating their real as well as nominal growth rates over time (2003-04 to 2013-14). Financial ratio analysis has been used to assess the liquidity, profitability and efficiency positions of the selected companies. The regression equations considered in our study are linear forms. The least square methods or its variants are used to estimate the parameters and the statistical significance of the parameters is tested by applying appropriate tests. We have also used factor analysis to find out the most dominating variables within our selected variables. Besides this we also calculated multiple regression analysis for finding out the significant variables.

TREND ANALYSIS

Automobile Industries:

According to the analysis of nominal growth rate, the performance of Bajaj auto is better within the selected companies of automobile industries considering overall growth rates of various components of working capital. Eicher Motors have a negative growth of debtors which is also reflected with high debtor turnover ratio showing better management of debtors and same thing is applicable for creditors also. Hindustan Motors have negative performance of working capital, only other current liabilities growth is positive, resulting performance of working capital was not satisfactory. Ahoke Leyland with a negative growth in cash shows a good amount of working capital and efficient cash management.

The Real Growth rates of Eicher Motors are negative for all the parameters except other current assets and other current liabilities. Working capital requirement is decreasing while the profitability of Eicher Motors is increasing which indicates the negative relation between the working capital and profitability of this company. The management is handling the working capital efficiently. For Bajaj Auto it is found that all the parameters of current assets have positive growth rate except other current asset with 0.90% of negative growth rate. Hindustan Motors performed badly and have negative growth rates for all parameters which are also reflected in the ratio analysis with a negative profitability. The real growth rates of Tata Motors are negative but the profitability ratio has increased over the years which show that the management is efficiently managing the working capital.

Cement Industry:

Study of the available data has projected that the Nominal growth rate of Everest Cement is positive in all respect with a higher working capital though an increased value of other current liabilities. The performance of ACC cement is well evident by its positive growth rate. The growth rate for Grasim cement found to be a little negative taking into consideration the data provided for cash and creditors. In case of Dalmiya Cement inventory and creditors growth rate is negative otherwise all other growth rates are positive. In the case of JK Cement, as all the selected parameters project a positive growth rate which in turn has provided a positive impact on working capital.

Analysis of the collected data from the five selected cement companies namely Everest, ACC, Grasim, Dalmiya and JK Cement, has revealed that the other current liability of JK Cement has inflated up to 40.50%, affecting the working capital in a negative manner due to an unproportionate increase in the other parameters of current assets. In case of Grasim Cement real growth rate is not effective due to a negative growth rate in all the parameters of current asset with a maximum of (-)16.40% in case of cash. Comparatively Everest Cement has performed much better when real growth rate is taken into consideration as all the parameter except for cash reflects a positive growth. ACC's endeavor towards betterment is indicated in its significant increase in the current asset which is the highest within the selected parameters. Grasim Cement has projected a negative growth in case of all the parameter, affecting the performance of working capital. The working capital of Dalmiya Cements has enjoyed a positive effect due to a positive growth of 15.50%, in case of inventory.

Fertilizer Industry:

Nominal growth rate when taken into consideration the fertilizer companies it has been observed that for Hindustan Insecticides Limited growth for all the parameters tends to be positive other than cash and other current asset. National Fertilizer Corporation Limited manifested a negative growth in the case of other current asset and creditors affecting the working capital in negative manner. For Paradeep Phosphate is detected that other current liabilities growth rate i.e. 33.90% is higher in percentage within the selected components of working capital. Rashtriya Chemical and Fertilizer manifest a better growth rate percentage in the case of debtors and inventory providing a positive effect on working capital. Also found in our study that DCM Sriram is only company which has really maintained with utmost property the components of working capital.

While analyzing the real growth rate of the selected fertilizer companies it is found that Hindustan Insecticides Limited shows a negative growth regarding other current asset 10.10%, this affects working capital in negative way. In case of National Fertilizer it is observed that other current liabilities growth rate is 17.50% eventually decreasing the working capital. For Paradeep Phosphate it is found positive growth rate except creditors. As seen earlier in this case also DCM Sriram is the only company within the industry which has manifested a positive growth all the selected components.

Heavy Engineering Industry;

Considering the Heavy Engineering industry it is found that in case of BEML the Current liability has significantly reaching a figure of 23.90%, whereas the growth of current asset has not increased noticeably otherwise the performance of working capital would have

been better. While dealing with the Nominal growth rate of BHEL it has been observed that all the growth rates are in a positive manner. TIL has shown an increase in positive value when current asset, other current liability and cash taken into consideration. Other parameters of TIL demonstrate a negative growth. All the parameters in a positive note ISGEC are the best working capital maintaining company as is the case. HEC which also has reflected a positive maintenance of inventory and debtor's growth and a low increase of other current liabilities indicates the positive performance of working capital.

Scrutinizing the real growth in the case of BEML it is found except for inventory and other current asset it is in a negative manner. Other current liability growth is 19.60% affecting the working capital by reducing it. In case of BHEL it is noted that all the growth is within 5%, only the other current liability growth percentage is a little more. TIL's growth is 6.80% in case of other current liabilities but negative growth (-) 9.80% in creditors is an indication that too much fluctuation of working capital has not taken palace for last 10 years. Only ISGEC is such a company who's the entire growth rate reflects positivity any naturally the working capital is high. The working capital of HEC is affected by the negative growth in the case of cash though the debtors and inventory maintain are in positive growth.

Steel Industry:

Taking into consideration the nominal growth rate of the steel Industry it has come to the forefront that more or less the other current liability shows a high growth rate for all the companies with Jindal Steel at its summit with the highest growth rate of 29.20 and lowest in cash (-) 5.10%. Adhunik Steel also manifests a highest and lowest growth among all the components of working capital with other current liabilities is 26.20% and cash to be (-)

20.80%. Thus it is a significant indication that the real and nominal growth is almost same in nature, but cash being affected more in real growth. Finally the ultimate effect on the working capital is that it is losing its value.

Dealing with real growth in the steel industry it is found that Tata Steel is comparatively better, only with an increase growth 10.60% of other current liabilities. Other than cash and other current liabilities SAIL has maintain a positive growth which is also same for Adunik steel, Rastriya Ispat Nigam and Jindal.

RATIO ANALYSIS

Automobile Industries:

The average working capital turnover ratio of Bajaj Auto is 12.33 times and the Net Profit Percentage is 14.43% which is highest among the companies of automobile sector. A comparative study of the parameters between the selected five automobiles companies has surfaced the fact that the maximum profit is earned by the companies whose average working capital turnover is high. It has been observed that higher turnover rate of debtors and inventory directly affects cash conversion cycle. This fact has been reflected in the case of Bajaj Auto where the cash conversion cycle is one week and that of Ashok Leyland is 4 weeks due to lower turnover rate of debtors and inventory.

The study of the available data from 2004 to 2014 of these automobile companies reveal that the usage of internal fund is always suitable if the Prime Lending Rate set by RBI and Cost of Equity of the organization is taken into consideration. It is found that cost of equity is lower during the above mentioned period.

The detailed analysis of the data has pointed out that the positive fluctuation of Price Earnings (P/E) Ratio for all the companies except Hindustan Motors is an indication that performance and acceptability of the other four companies are better from the investor's point of view.

Cement Industry:

A detailed comparison amongst all the cement companies has brought out the fact that the working capital turnover rate for Everest cements is 14.72 times which is comparatively higher than the others but its profit percentage of 5.42% is comparatively low. Grasim cement with the working capital turnover 10.19 times can be termed the best among the selected five with the highest profit average 16.64%. Dalmia earns average profit 15.67% with working capital turnover 6.28 times. Current ratio for the selected cement companies can be pronounced to be almost ideal.

The findings have divulged the fact that the parameters of working capital and profit percentage are totally different for the cement industry as and when compared with the automobile industry. In Cement industry it is found that there is no relationship between working capital and net profit percentage which can be supported by the case of Dalmia Cement, where it has earned the profit of 15.67% with working capital turnover ratio 6.28 times.

In cement industry it is also found that current ratio is ideal but quick ratio is very low in nature. This is similar for almost all the selected cement companies.

We also found in our study that high turnover of debtors and inventory always affects cash conversion cycle which can be noted from the findings of ACC Cement.

The scrutinized study of the findings has surfaced the fact that, in the case of Everest Cement and JK cement the cost of equity is higher than PLR which might have been instrumental in the declined of the net profit percentage of these two companies with an exception for the 2005-2006.

Fertilizer Industry:

The findings are indicating that, in case of fertilizer companies, the net profit percentage is not irrelevantly high, though it has been proved to be a profit making industry. It is also found that with a higher turnover rate of working capital Sriram fertilizer projects low profit. Rastriyo Chemical Fertilizer earning a maximum profit 7.01% has a lowest average working capital turnover of 2.71 times. As previously observed in case of cement industry, here also we found that working capital dose not affects profit percentage.

Equity is found higher than debt for all the selected companies. Paradeep Phosphate maintained better debt equity ratio which of 1.18 times.

With a slow movement of debtors and inventory the fertilizer industry reveals a higher time periods of average cash conversion cycle as and when compared with automobile and cement industry. Only in case of HIL debtor's movement is comparatively better as in the case of NFCL whose Inventory turnover movement is better resulting in a low time periods of cash conversion cycle for both the organization within the industry.

The cost of equity is higher than the PLR for other companies except for NFCL and Rastriyo Chemical due to which the latter manifests a lower cost of equity providing a better picture of performance in all respect.

Heavy Engineering Industry;

The net profit of the selected Heavy Engineering companies is the indication of a profitable industry. Within the data of our study period, riches the highest profit at 11.99% on an average.

With a highest working capital turnover of 13.24 times ISGEC show an average net profit of 3.71%. Going back to BHEL, earn a maximum profit of 12.23%, where the working capital turnover ratio is found 3.0 times , thus it is again watch that, higher turnover rate of working capital dose not ensure the higher percentage of profit.

Amongst all the companies, BEML is the only company which has maintained a standardized current and quick ratio. Poor maintenance of current and quick ratio is observed for HEC and this company is also functioning differently within the five selected companies in respect of debt which is higher than equity. But a closer scrutiny reveals that the debt equity ratio is low in case of all the selected companies in the industries.

The cash conversion cycle for ISGEC is comparatively better comparing the other company within the industry which is found seven weeks. Along with a slowest cash conversion cycle Heavy Engineering Corporation also manifests a slow movement in the debtors and inventory turnover. The five selected companies reflect a similar performance for these two ratios.

A detail study of the provided data throws light on the fact that for the considered 10 years the average cost of equity is lower than the PLR for all the selected companies. But a sudden increase in this parameter is noticed from the year 2010-2011 only for HEC.

Steel Industry:

A detailed study ravels the fact that the performance of steel industry is much better as and when compared with the other four selected industries, as the net profit of the selected companies within the steel industry is better in comparison with automobile, fertilizer heavy engineering and cement. The average profit percentage of Tata Steel being 20.72% can earn it the title of a best company amongst the selected few. The performance of Adhunick Metaliks when compare to other steel companies is not as good as it reflects the descending in profit from the year 2008-2009.On the other hand Tata Steel and SAIL have shown a better performance but the cost of equity being higher than the PLR.

Thus it can be inferred that working capital turnover rate and profitability in case of the selected steel companies is not directly related with each other.

With the little fluctuations, it has been found that the cash conversion in the arena of steel industry manifests stability due to a comparatively higher debtors and inventory turnover.

We have also done factor analysis for finding out the most dominating variables within our selected variables. We found that current ratio is the most dominating factor within liquidity ratio and net profit ratio is the most dominating factor within profitability ratios. We also calculate the co-relation co-efficient between those two variables.

After finding out the dominating factors we finally done multiple regression analysis and finds the significant variables.

6.2 SUGGESTIONS

1. There is a positive relation between higher turnover of debtors and inventory with net profit ratio. Higher turnover ratio of debtors and inventory leads to higher net profit ratio. This fact is reflected from Tata Steel, Tata Motors and Eicher Motors which have better net profit ratio and higher inventory and debtor turnover ratio. Whereas Adhunik Metaliks have low net profit ratio as well as low debtor and inventory turnover ratio.

2. There is a negative relation between holding of idle cash and net profit ratio. This is reflected from the performance of BHEL, Tata Steel, Sriram and TIL which have less amount of idle cash and good financial performance whereas the idle cash of JK Cement is high and the financial performance is also not satisfactory.

3. Companies like Jindal, Adhunik , Rastiya Ispat Nigam should try to reduce the level of debtors because by analyzing the growth rates of debtors it has been found that the companies with growth rate of debtors more than 5% have an adverse effect on their net profit ratio. Thus the average growth rate of debtor should be less than 5%.

4. The negative growth rate of creditors suggests that the companies are not being able to increase the credit facility from the suppliers that they could have availed. Increase of creditors would have reduced the volume of working capital.

5. Current Ratio affects the solvency position of the companies. The study reveals that Everest Cement, Dalmiya Cement, Rastriyo Ispat Nigam, Rastriyo Chemical have a better solvency position with current ratio more than 2. While Bajaj Auto, Tata motors, HEC have current ratio less than 1 suggests poor solvency position or higher liquidity risk.

6. Companies can take advantage of leverage. If debt-equity ratio is high then the company with higher rate return on investment than rate of debt can help in increasing the return on equity. Companies like Tata Motors, Dalmiya Cement, Paradeep Phosphate, Heavy Engineering Corporation and Adhunick Metaliks have higher debt-equity ratio.

7. Companies like Hindustan Insecticides Limited should concentrate on cost of equity as cost of equity is higher than Prime Lending Rate. A fall in the market price of the shares for few years tends to produce a negative value of cost of equity which is not better for the company. Company like Rastriyo Chemical performs better in this area.

8. Better cash conversion cycle indicates the better management of cash, HECL cash conversion cycle is found slower, company should take care of this.

9. Working Capital turnover ratio for companies like Jindal, Ashok Leyland, Sriram are fluctuating over the years which should be taken care of.

10. Within the selected five companies of cement industry, J.K Cement should try to maintain the quick ratio properly.

11. Fertilizer companies should take care of debtors and inventory to increase the turnover cycle.

12. Steel companies should try to increase the inventory turnover.

13. Maintenance of a specific policy regarding other current liabilities can be resulting better for the performance of all the companies.

6.3. LIMITATION OF THE STUDY:

This study suffers from the following limitation;

1. This study is limited in data set, covers only ten years, Five Industry and totals twenty five numbers of companies. If we are able to increase the sample size can get more effective result.

2. Study of other capital intensive industries have not been done.

3. The study based on secondary data as the primary data were not available.

6.4. SCOPE FOR THE FURTHER STUDY :

1. There is very wide scope for further research in this area, need to be done more extensively. Parameters like analysis of individual debtors, creditors, stock, and cash flow analysis may further be increased to get more detail result in this area.

2. Transition from working capital management   application of Just-In-Time approach can be explored.

3. Study of working capital requirement of other capital intensive industries could be taken up in next study.

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