

**WORKING CAPITAL MANAGEMENT OF SELECTED  
PHARMACEUTICAL COMPANIES IN INDIA**

**By**

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**2016**

## **CERTIFICATE**

This is to certify that the thesis entitled “**WORKING CAPITAL MANAGEMENT OF SELECTED PHARMACEUTICAL COMPANIES IN INDIA**”, which is being submitted by Mr. NirmalChakraborty for the award of the degree of *Doctor of Philosophy in Commerce* to 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.

Dated: 20<sup>th</sup> June, 2016



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## **DECLARATION**

I do hereby declare that the thesis entitled “WORKING CAPITAL MANAGEMENT OF SELECTED PHARMACEUTICAL COMPANIES IN INDIA”, submitted by me for the award of the degree of Doctor of Philosophy in Commerce is an original and independent research work by me.

I also declare that I have not submitted this work as thesis either wholly or in parts for the award of any degree, diploma, associate ship, fellowship or any other academic titles to this University or any other University or Institute of higher learning.

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**(Nirmal Chakraborty)**

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Of Course, I am alone responsible for any kind of omissions and commissions in my study.

Dated : August, 2016

**(Nirmal Chakraborty)**

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## **CHAPTER-1**

### **INTRODUCTION**

#### **1.1. Meaning of working Capital Management:**

Working Capital consists of that portion of the assets of a business, which are used, in current operations. It includes receivables, inventories or raw materials, stores, work-in-progress and finished goods, merchandise, bill receivable and cash.

There are two concepts of working capital, Gross concept and Net Concept. Gross working capital refers to total current assets. This concept is also known as quantitative concept and the net concept refers to the difference between current assets and current liabilities. Working Capital can be positive or negative (positive is net working capital and negative is deficit working capital.)

#### **1.2. Objectives of Working Capital Management**

The aim of working capital management is to manage a firm's current assets e.g. debtors, receivables, cash in hand, cash at bank, stock etc. and firm's current liabilities viz. creditors, bills payable etc. in best possible manner. If it does not maintain it in good manner, it is likely to become insolvent and may also become bankrupt. The current assets should be large enough to cover current liabilities in order to ensure a reasonable margin of safety. Each of the current assets must be managed efficiently in order to maintain the liquidity of a concern while not keeping too high level of any one of them so that the cost increases. Each of short term sources of finance must be continuously manageable to ensure that they are obtained and used in the best possible way. Proper management of working capital is very important for the success of a concern. "It aims at protecting the purchasing power of assets and maximizing the return on investment."

The management of working capital also helps the management in evaluating various existing or proposed financial constraints and financial offerings. All these factors clearly indicate the importance of working capital of an enterprise. It has been emphasized that a firm should maintain a sound working capital position and that there should be optimum investment in working capital. Thus, there is a great need to manage working capital

adequately. Small firms may not have much investment in fixed assets, but they have to invest in current assets such as cash, debtors and inventories. Further, the role of current liabilities in financing current assets is far more significant in case of small firms, as unlike large firms, they face difficulties in raising long-term finances. There is great relationship between sales and working capital needs. As sales grow, a firm needs to invest more in inventories and book debts. These needs become very frequent and fast when sales grow continuously. Continuous growth in sales may also require additional investment in fixed assets but they do not indicate the same urgency as displayed by current assets.

### **1.3. Nature of Pharmaceutical Industry**

The pharmaceutical industry has been one of the successful industries in India. The reasons are many good quality essential drugs are available at affordable prices to the vast population of the country. The Indian pharmaceutical companies are competing with some of the best companies in the global market, cost of drugs ranges from 5% to 50% less as compared to the developed countries and third largest in the world in terms of volume and 14<sup>th</sup> in terms of value. The industry is capital intensive and intellectual in nature. The March'12 estimates sales from pharmaceuticals to go from 11 billion US \$ currently to 74 billion US \$ by 2020. The increasing population of the higher income group in the country will open a potential US \$ 8 billion market by 2015. Besides this, the report said that the domestic pharmaceutical market is likely to touch 20 billion by 2015, making India a lucrative destination for clinical trials for global giants.

The accelerated growth over the year has been fuelled by exports to more than 200 countries with a sizable share in the advanced regulated markets of U.S. and Western Europe. 40 % of the world's active ingredient requirement is met by India.

Pharmaceutical industry in India ranks very high in terms of technology, quality and range of medicines manufactured. Many different medicines varieties are now made domestically by Indian industries. The industry has made significant progress in creation of infrastructure, meeting global needs for supply of quality medicines and active

pharmaceutical ingredients as also entering into the opportune area of ‘Contract Research And Manufacturing’(C.R.A.M) and clinical trials.

In the present day context of rising capital cost and scarce funds, the importance of working capital needs special emphasis. It has been widely accepted that the profitability of a business concern likely depends upon the manner in which working capital is managed. On the other hand, proper management of working capital leads to a material savings and ensures financial returns at the optimum level even on the minimum level of capital employed. We also know that both excessive and inadequate working capital is harmful to a firm. There are many instances of a business failure for inadequate working capital. Further working capital has to play a vital role to keep pace with the scientific and technological developments that are taking place in the concerned area of pharmaceutical industry. On study it is found that the pharmaceutical companies are maintaining current assets at a level which is eight times of its current liabilities on an average. It is also observed that fifty percent of the total assets, on an average, were invested in current assets. Inventory and debtors are the major components of working capital in terms of value of the pharmaceutical companies in India. Under the circumstances, if new ideas, methods and techniques are not been injected or brought into practice for want of working capital, the companies certainly not able to face competition and survive. In this context working capital management has a special relevance and a thorough investigation regarding working capital practice in the pharmaceutical industry is of utmost importance. An attempt has therefore been made to undertake an in depth study on working capital management of selected pharmaceutical companies in India.

#### **1.4. Objectives of the study**

The main objective is

1. To assess the performance of working capital management of some selected pharmaceutical companies in India.

To attain the main objective, the following objectives are to be attained:

1. To make component wise analysis of working capital of the selected companies.
2. To assess the relative significance of various sources of financing of working capital.
3. To analyze the liquidity position of the selected companies.
4. To analyse the profitability position of the selected companies.
5. To analyse the efficiency position of the selected companies.
6. To analyse the impact of liquidity and efficiency on profitability of the companies under study.

#### **1.5. Study period**

The study have been covered a period of fifteen years starting from the financial year 1999-2000 to 2013-2014. The financial year starts from 1<sup>st</sup> day of April every year and ends on 31<sup>st</sup> March of the next year.

#### **1.6. Selection of the samples**

The average net profit of pharmaceutical companies listed in BSE, have been calculated. Twenty pharmaceutical companies have been selected out of total pharmaceutical companies, enlisted in BSE, of which, ten were chosen from top (all were profit making) and remaining ten were chosen from the bottom (all were incurring losses).

The top ten profit making companies are:

1. Lupin Ltd.
2. Dr. Reddys' Laboratories Ltd.
3. CIPLA
4. Piramal Enterprises
5. Aurobindo Pharmaceuticals Ltd.
6. Cadila Health Care Ltd.
7. Divis Labs.



8. Strides Archolabs Ltd.
9. Sun Pharmaceutiocals Ltd.
10. Biocon Pharmaceuticals

Selected Ten loss making companies are:

1. Koprana
2. Biofil Chemicals and Pharmaceuticals Ltd.
3. Ambalal Sarabhai Enterprises.
4. Parenteral Drugs (India) Ltd.
5. Sequent Scientific Ltd
6. Zenotech Laboratories Ltd.
7. Marksans Pharma Ltd.
8. Wanbury Ltd.
9. Morepen Labs.
10. Hiran Orgochem Ltd.

### **1.7. Chapter plan**

To assess the working capital management of some selected pharmaceutical companies in India, the chapter plan is made as following:

Chapter 1	:	Introduction
Chapter 2	:	Literature Survey
Chapter 3	:	Database and methodology
Chapter 4	:	Assessment of working capital management of some selected Pharmaceutical companies from economic point of view.
Chapter 5	:	Assessment of working capital management of some selected Pharmaceutical companies from accounting point of view.
Chapter 6	:	Summary and Conclusions. Bibliography

## **CHAPTER-2**

### **DATABASE AND METHODOLOGY**

To assess the working capital performance of the selected companies, secondary data had been collected and used.

#### **2.1. Sources of Data, Sample profile and Sample Size Determination:**

##### **2.1.1. Sources of Data:**

Secondary data on different items like Inventory, Debtors, Bills Receivable, Cash in hand , Cash at bank , Sundry creditors, Bills payable , Gross Working Capital, Net Working Capital, blocking period of each components of Current Assets, Gross Profit, turnover etc. of the selected pharmaceutical companies had been collected from published annual reports. Besides these annual reports, the statistical hand book, published by the Govt. of West Bengal had been collected to get the CPI values and different websites had been used.

##### **2.1.2. Sample Profile:**

###### **2.1.2.1. LUPIN Ltd.**

Lupin Pharmaceuticals is among the top five pharmaceutical companies in India. Lupin Pharmaceuticals is dedicated to delivering high-quality, branded and generic medications trusted by healthcare professionals and patients across geographies. It's headquarter is in Mumbai, India, the company is strongly research focused. It has a program for developing New Chemical Entities. The company has a state-of-the-art R&D center in Pune and is a leading global player in Anti-TB, Cephalosporins (anti-infectives) and Cardiovascular drugs (ACE-inhibitors and cholesterol reducing agents) and has a notable presence in the areas of diabetes, anti-inflammatory and respiratory therapy. The company has been earning profit since 1999-2000 continuously. For the financial year ended 31st March 2014, Lupin's Consolidated turnover and Profit after Tax were Rs. 8939.38 crore and Rs. 2324.22 crore respectively.

#### **2.1.2.2. Dr Reddy's Laboratories**

Dr Reddy's Laboratories is a 32-year old company catering to the needs of the pharmaceutical sector. Dr Reddy's started its operation in 1984 in the Active Pharmaceutical Ingredients (API) segment, with a single drug in 60 tonne facility near Hyderabad. Dr Reddy's, a global pharmaceutical company, has its headquarters located in India. It has a global presence in more than 100 countries, representative offices in 16 countries and third-party distribution set ups in 21 countries. It is first pharmaceutical company in Asia, outside Japan, to be listed on the NYSE. It is largest player in the custom pharmaceutical services (CPS) business in India. The company has been earning profit from 1999-2000 continuously. For the financial year ended 31st March 2014, the Consolidated turnover and Profit after Tax of the company were Rs. 9728 crore and Rs. 1932.80 crore respectively.

#### **2.1.2.3. CIPLA**

Cipla Limited is a pharmaceutical company. The Company's business units include Active Pharmaceutical Ingredients (APIs), Respiratory and Cipla Global Access. The Company offers APIs, formulations and veterinary products. As of March 31, 2015, the Company offered its services across five continents across the world. It offers its services in India, South Africa, Europe and North America, among others. The Company offers over 1,000 products across about 120 countries. The company has been earning profits from 1999-2000. For the financial year ended 31st March 2014, the Consolidated turnover and Profit after Tax of the company were Rs. 9380.29 crore and Rs. 1388.34 crore respectively.

#### **2.1.2.4. Piramal Enterprises**

Piramal Enterprises Limited, an Indian-based company is focused on pharmaceutical business, financial services and information management. The information management segment is a provider of syndicated research, information and analytics to the healthcare industry. The company has been earning profits from 1999-2000 till date except in 2012-2013 & 2013-2014. For the financial year ended 31st March 2014, the Consolidated

turnover and Profit after Tax of the company were Rs. 1843.14 crore and Rs. (-) 370 crore respectively.

#### **2.1.2.5. Aurobindo Pharmaceuticals**

Aurobindo Pharma Limited (Aurobindo) is an India-based pharmaceutical company. The Company is engaged in producing oral and injectable generic formulations and active pharmaceutical. Aurobindo also manufactures and commercializes active pharmaceutical ingredients (APIs) and generic finished dosages for various markets. The company is a profit making company

#### **2.1.2.6. Cadila Health Care Ltd**

Cadila Healthcare Limited is an India-based pharmaceutical company. The Company's subsidiaries include Zydus Wellness Limited, Liva Pharmaceuticals Limited, Biochem Pharmaceutical Industries Limited, Zydus Technologies Limited, German Remedies Limited, Dialforhealth India Limited, Dialforhealth Unity Limited and Dialforhealth Greencross Limited, among others. The reported net profit of the company was 903 crore against sales turnover during 2013-2014.

#### **2.1.2.7. Divi's Laboratories Limited**

Divi's Laboratories Limited is engaged in the manufacturing of generic active pharmaceutical ingredients (APIs), custom synthesis of active ingredients for companies, other specialty chemicals and nutraceuticals. The Company exports its products to European and the American countries. The Company's main manufacturing and research and development facilities are located in the state of Andhra Pradesh and Telangana, India. The Company operates in India and other countries. The Company has two subsidiaries, which include Divis Laboratories (USA) Inc. and Divi's Laboratories Europe AG. It is a profit making company during the study period. For the financial year ended 31st March 2014, the Consolidated turnover and Profit after Tax of the company were Rs. 2513.97 crore and Rs. 791.72 crore respectively.

#### **2.1.2.8. Strides Arcolab**

Strides Arcolab is an Indian pharmaceutical company with a key focus on development and manufacture of IP-led niche generics and bio-pharmaceuticals. It is also among the world's largest manufacturers of specialty soft gelatin capsules. With world-class manufacturing facilities, an innovative R&D hub in Bangalore and a strong commercial platform to market branded and commodity generics globally, Strides has earned a reputation for building and scaling profitable businesses in a short span of time. During 2013-2014, the company's reported net profit was 3512.93 crore.

#### **2.1.2.9 Sun Pharmaceuticals**

Sun Pharmaceutical is an India-based generic and pharmaceutical company. The Company's business segments include US Business, which includes Western Europe, Canada, Australia, New Zealand and Other Markets; Indian Branded Generics Business, including Global Consumer Healthcare Business, and Emerging Markets, which include Active Pharmaceutical Ingredients (APIs). The company is a profit making company during the study period except in 2013-2014. The reported net loss of the company was 2828.52 crore in 2013-2014.

#### **2.1.2.10. Biocon Pharmaceuticals**

Biocon Limited is a biopharmaceutical company, which is engaged in the manufacture of pharmaceuticals, medicinal chemical and botanical products. The Company operates through two segments: active pharmaceutical ingredients (Pharma), and contract research and manufacturing services (Contract Research). It is engaged in manufacture of biotechnology products for the pharmaceutical sector. The Company is engaged in research and development in the biotechnology sector. It offers a portfolio of bio similar insulins, recombinant proteins and monoclonal antibodies. In 2013-2014, the reported turnover and reported net profit of the company was 2202 crore and 329.90 crore respectively.

#### **2.1.2.11. Kopran**

Kopran Limited is a pharmaceutical company. The Company manufactures active pharmaceutical ingredients (APIs) and finished dosage forms. It operates through the segments: Pharmaceutical and Consumer Care Division. Its business units include Finished Dosage Forms, Active Pharmaceutical Ingredients, Research and Development, and Consumer Healthcare. It offers its products in the therapeutic categories, In addition, it offers oral care, lifestyle, beauty and personalized hygiene products. In most of the years of the study the company had incurred losses and in the recent years of the study, the reported net profit was 17.04 crore.

#### **2.1.2.12. Biofil Chemicals and Pharmaceuticals Ltd.**

Biofil Chemicals & Pharmaceuticals Ltd. is engaged in manufacturing pharmaceutical products. The company offer antibiotics, anti-analgesics, diuretics, antimalarial vitamins, antacids, and anti-inflammatory therapeutics. Biofil Chemicals & Pharmaceuticals Ltd. is based in Indore, India. The company was incorporated in 1985. It is a loss making company. In 2013-2014, the net profit of the company was 0.52 crore.

#### **2.1.2.13. Ambalal Sarabhai Enterprises.**

Ambalal Sarabhai Enterprises Limited is an India-based holding company. The Company is engaged in the business of manufacturing, trading and dealing in the pharmaceuticals. The Company is also engaged in the manufacturing of drugs, formulations, electronics instruments and services. The Pharmaceuticals segment is engaged in manufacture of drugs and formulations. The Company offers its drug and pharmaceutical formulations in the form of injectable, liquids, ointments, powders, tablets, capsules and others. The Company's plant is located at Ranoli village, Vadoda. In most of the years, the company had been incurring losses.

#### **2.1.2.14. Parenteral Drugs (India) Ltd.**

Parenteral Drugs (India) Limited is an India-based healthcare company. The Company is principally engaged in the business of pharmaceutical. PDPL is engaged in research, production and manufacturing of pharmaceutical products include intravenous infusion,

tablets, capsules, liquids syrups and injections. The Company has manufacturing facilities located in Madhya Pradesh, Himachal Pradesh, Punjab and Goa, India, as well as overseas in countries, such as Mauritius, Nairobi and Kazakhstan. The reported net profit of the company was very low and in 2013-2014, the company had a net loss of Rs 58.70 crore.

#### **2.1.2.15. Sequent Scientific Ltd**

Sequent Scientific Limited is a pharmaceutical company. The Company operates in the domains of animal health (active pharmaceutical ingredients (APIs) and finished dosage formulations), human health (APIs) and analytical services. It services the API, pharmaceutical, personal care and nutraceutical companies in analytical and bio-analytical services.

#### **2.1.2.16. Zenotech Laboratories Ltd.**

Zenotech Laboratories Limited (Zenotech) is an India-based pharmaceutical company. The Company is engaged in a business of manufacture and trading of pharmaceuticals products. The Company operates in India. The reported turnover and loss of the company were 340.96 crore and 114.42 crore respectively.

#### **2.1.2.17. Marksans Pharma Ltd.**

Marksans Pharma Limited is an India-based holding company. The Company is a pharmaceutical company, which is engaged in the research, manufacturing and marketing of generic pharmaceutical formulations. The Company manufactures products for segments, such as pain management, cough and cold, diabetes, cardiovascular, central nervous system, antibiotics, gastrointestinal, anti-allergic and oncology. The Company is engaged in research and development, and offers contract research and manufacturing services to global pharmaceutical companies. The company has been incurring losses in most of years, starting from 1999-2000.

#### **2.1.2.18. Wanbury Ltd.**

Wanbury Limited, one of India's fastest growing pharmaceutical companies amongst the 'Top 50 Companies' in India (as per ORG-IMS), has a strong presence in API global market and domestic branded Formulation. Wanbury's major thrust area lies in Active Pharmaceutical Ingredient (API) sale in over 70 countries and Pan-India Formulation presence.

#### **2.1.2.19. Morepen Labs.**

Morepen Laboratories Limited is an India-based pharmaceutical company. The Company operates through four segments; they are Active Pharmaceutical Ingredients (API), Domestic Formulations, Diagnostics and Over the Counter (OTC). The Company has 3 manufacturing facilities, for manufacture of API, formulations and OTC products with international standings. It is also a loss making company.

#### **2.1.2.20. Hiran Orgochem Ltd.**

Hiran Orgochem Limited manufactures active pharmaceutical ingredients (APIs) and formulations. The Company is engaged in dealing in APIs drugs. The Company operates through two segments: Pharmaceuticals and Construction. The Pharmaceuticals segment consists of manufacture and trading of pharmaceutical intermediates and chemicals. It is manufacturing the Quinolones group of APIs. The company has been facing losses in most of the years of the study.

#### **2.1.3. Sample Size Determination:**

The average net profit for fifteen years (1999-2000 to 2013-2014) of pharmaceutical companies enlisted in BSE had been calculated for sample selection. Twenty pharmaceutical companies have been selected out of total pharmaceutical companies, enlisted in BSE, of which, ten were chosen from top (all were profit making) and remaining ten were chosen from the bottom (all were incurring losses). The top ten profit making companies are 1) Lupin Ltd. 2) Dr. Reddys' Laboratories Ltd. 3) CIPLA, 4) Piramal Enterprises, 5) Aurobindo Pharmaceuticals Ltd, 6) Cadila Health Care Ltd. 7) Divis Labs. 8) Strides Archolabs Ltd. 9) Sun Pharmaceutiocal Ltd. 10) Biocon



Pharmaceuticals where as selected ten loss making companies are: 1) Kopran 2) Biofil Chemicals and Pharmaceuticals Ltd. 3) Ambalal Sarabhai Enterprises. 4) Parenteral Drugs (India) Ltd. 5) Sequent Scientific Ltd 6) Zenotech Laboratories Ltd. 7) Marksans Pharma Ltd. 8) Wanbury Ltd. 9) Morepen Labs. and 10) Hiran Orgochem Ltd.

## **2.2. Methodology:**

Entire secondary data of the selected companies relating to working capital had been analysed from two broad angles, Economic Point of view and Accounting Point of view. To assess the Working Capital Management of some selected pharmaceutical companies from economic angle, trend analysis of different components of working capital as well as net working capital as a whole had been done. After necessary adjustments in the data sets, the growth rates of different components of working capital of the selected pharmaceutical companies had been estimated both in nominal and real terms from the estimated coefficients of the chosen trend equation. The growth rates had been directly measured from the estimated co-efficient of 't' (i.e. time) in case exponential and log quadratic (with normalization of time i.e. shifting the origin to the mid-point of the time period ) trend equations or the models used to estimate the growth rates of different performance indicators are (i)  $\text{Log } y_t = a + bt$ ; (ii)  $\text{Log } y_t = a + bt + ct^2$ , where  $y_t$  is the variable whose over time growth is measured and  $t$  is the time variable. Log implies natural logarithm ( $\log_e$ ) and all others (a, b, c) are the parameters to be estimated.

The growth rates, expressed in percent per annum, the trend lines fitted to the time series of the performance indicators give goodness of fits. Further, from the values of DW statistic, the disturbance term suffer from auto-correlation problem had been measured. Besides this, I had calculated mean values, standard deviation in order to measure the extents of fluctuations or variation about the mean values of the financial variables.

To assess the Working Capital Management of some selected pharmaceutical companies from accounting angle, ratio analysis had been done on different performance parameters. Ratio is a number which expresses the relationship between two variables. In this study ratio analysis include

1. Liquidity analysis,
2. Profitability analysis,
3. Efficiency analysis,
4. working capital financing analysis
5. Component wise analysis of working capital

In liquidity analysis, I had judged the short term solvency of the selected companies. Liquidity analyses include current ratio, quick ratio and absolute liquid ratio. These were calculated as follows:

1. **Current Ratio (CR):** It expresses the relation of the amount of current assets to the amount of current liabilities. It had been calculated by dividing current assets to current liabilities. Current assets include Inventories, Trade Receivables and Cash and Bank balance. The Current Liabilities includes mainly Trade Payables. It is a traditional measure used in ascertaining the ability of a firm to meet its short-term obligations. The higher the current ratio, the larger is the amount available per rupee to meet short-term obligations and the greater is the security available to the creditors. Traditionally a current ratio of 2:1 is considered satisfactory for a firm and it is taken to represent a good short-term solvency position.
2. **Quick Ratio (QR):** This ratio is a more rigorous measure of liquidity as compared to the current ratio. It is a refinement of current ratio as it excludes non liquid current assets such as inventories, prepaid expenses etc from the total current assets. This ratio has been calculated by dividing the liquid assets by liquid liabilities. Liquid liabilities had been calculated by subtracting the bank overdraft from the entire current liabilities. Thus by using it, the liquidity of a company can be judged more precisely. Conventionally, a quick ratio of 1:1 is considered as satisfactory. In other words, if a company has quick ratio of at least 100 percent it is considered to be in a fairly good liquidity condition.
3. **Absolute Liquid Ratio (ALR):** This ratio is known as super quick ratio or cash position ratio. The ratio is useful only when used in conjunction with current ratio and quick ratio. It expresses the relation of the amount of absolute liquid assets to

the amount of current liabilities. The absolute liquid assets are computed by subtracting accounts receivables from its liquid assets. The accounts receivables are excluded from the liquid assets on the ground that there may be some doubt about their quick collection. The Current Liabilities includes mainly Trade Payables excluding bank overdraft. It is a traditional measure used in ascertaining the ability of a firm to meet its immediate obligations. The higher the absolute liquid ratio, the larger is the amount available per rupee to meet immediate obligations and the greater is the security available to the creditors. Traditionally an absolute liquid ratio of 0.5:1 is considered satisfactory for a firm and it is taken to represent a good spot payment position and it is taken as accepted conventional standard.

**In Profitability analysis** I had judged the profitability position of the selected companies. Profitability ratios include the following:

1. **Gross Profit margin ratio:** It has been calculated dividing gross profit by net sales and multiplied by 100. This can be expressed as

$$\text{Gross Profit Margin Ratio} = \frac{\text{Gross Profit}}{\text{Net sales}} \times 100$$

Gross profit is the profit in sales after deducting all the trading expenses like the cost of raw materials, the direct expenses on purchases, excise duty, etc.

Gross Profit margin is an indicator of the percentage of sales revenue which is above the cost. For making a pricing decision this margin can be utilized for decreasing the price. Theoretically it can be said that the price of a product can be decreased maximum up to the extent of gross profit margin, decrease in price up to this margin would give the firm enough revenue to continue the operations. The more is the gross profit margin, the more is the strength to meet competition in the competitive market.

2. **Net Profit Margin Ratio:** The net profit margin, also known as net margin, indicates how much net income a company makes with total sales achieved. It has been calculated as dividing net profit by net sales and multiplied by 100. This can be expressed as

$$\text{Net Profit Margin Ratio} = \frac{\text{Net Profit}}{\text{Net sales}} \times 100$$

A higher net profit margin means that a company is more efficient at converting sales into actual profit. With net profit margin ratio all costs are excluded to find the final benefit of the income of a business. It measures how successful a company has been at the business of making a profit on each rupee sales. It is one of the most essential financial ratios. Net profit margin includes all the factors that influence profitability whether under management control or not. The higher the ratio, the more effective a company is at cost control.

3. **Return on Capital Employed (ROCE):** Return on Capital Employed or ROCE is a profitability ratio that measures how efficiently a company can generate profits from its capital employed by comparing net operating profit to capital employed.

It has been calculated as dividing operating profit by capital employed and multiplied by 100. This can be expressed as

$$\text{Return on capital employed} = \frac{\text{Operating Profit}}{\text{Capital employed}} \times 100$$

Capital employed has been calculated by adding fixed assets to net working capital. Net working capital has been calculated by subtracting current liabilities from current assets. This ratio is based on two important calculations: Operating Profit and capital employed. Return on capital employed shows investors how many rupees in profits in each rupees of capital employed generates. Return on capital employed is long term profitability ratio because it shows how effectively assets are performing while taking into consideration long term financing. This is why return on capital employed is a more useful ratio than return on equity to evaluate longevity of a company. Capital employed is a fairly convoluted term because it can be used to refer to many different financial ratios. A higher return on capital employed ratio will be more preferable because it means that more rupees of profits are generated by each rupees of capital employed.

**In efficiency analysis** I had judged the management efficiency of current assets and current liabilities of the selected companies. Efficiency ratios include:

1. **Inventory Turnover Ratio (ITR):** This ratio measures the efficiency of inventory management of a firm. It is computed dividing cost of goods sold by average inventory maintained during the year. The average inventory had calculated as half of the total of opening and closing inventory in a year. If the inventory is efficiently managed, it will help in enhancing the liquidity of the firm. It also indicated the managerial efficiency. A high Inventory turnover ratio indicates more frequently the stock are sold which implied less amount is blocked in inventory , resulting a high level of efficiency in inventory management and it is good from the liquidity point of view whereas a low ratio implies excessive inventory levels than warranted by volume of operation. Higher inventory turnover ratio, lesser the working capital requirement and vice versa.
2. **Debtors Turnover Ratio (DTR):** Debtors turnover ratio highlights credit and collection policy pursued by a firm. It is calculated dividing credit sales by average debtors. An average debtor is the half of opening debtors and closing debtors. The quality of debtors influences the liquidity of a firm. It tests the speed with which debtors are converted into cash. The liquidity of a firm is directly influenced by this speed. Thus, debtors' velocity indicates the efficiency of receivables management in a company. A high Debtors turnover ratio reflects the promptness of debtors' collectivity i.e. smooth flow of liquidity and a low Debtors turnover ratio indicates longer average collection period i.e. shrinkage of liquidity and also proves inefficiency in credit management.
3. **Cash Turnover Ratio (CTR):** This ratio measures how many times per year it replenishes its cash balance with its sales revenue. It measures the efficiency of cash management. High cash turnovers mean that a company is going through its cash cycles quickly. The higher CTR, the higher is the efficiency of cash management and vice-versa. A higher cash turnover ratio is generally better than a lower one.
4. **Working Capital Turnover Ratio (Operating Cycle Period):** It is known as cash conversion cycle. Operating cycle is the no. of days a company takes in

realizing its inventories in cash. It equals the time taken in selling inventories plus the time taken in recovering cash from trade receivables. It is called Operating Cycle because this process of producing / purchasing inventories, selling them, recovering cash from customers, using that cash to purchase / produce inventories and so on is repeated as long as the company is in operations.

Net Operating Cycle = Days Inventory Outstanding (+) Days Sales Outstanding (-) Days Payables Outstanding.

Operating Cycle is a measure of operating efficiency and working capital management of a company. A short operating cycle is good as it tells that the company's cash is tied up for a shorter period. A longer operating cycle tells that the company's cash is blocked for a long period which is not good for the company.

5. **Creditors Turnover Ratio:** It highlights credit and payment policy pursued by a firm. It is calculated dividing credit purchase by average creditors. An average creditors is the half of opening creditors and closing creditors. The quality of creditors influences the liquidity of a firm. It tests the speed with which cash are being paid to creditors. The liquidity of a firm is directly influenced by this speed. Thus, creditors' velocity indicates the efficiency of payables management in a company. A high creditors turnover ratio reflects the promptness of creditors' payment i.e. shrinkage of liquidity and also proves inefficiency in credit management and a low creditors turnover ratio indicates longer average payment period i.e. high liquidity.

**In component wise analysis** of working capital, all the components of working capital had been considered. These includes Inventory, debtors, cash, loans and advances and creditors were expressed as percentage of total current assets and the following ratios had been considered:

1. **Current assets to total assets ratio:** it is computed dividing current assets by total assets. It indicates the extent of total funds invested for the purpose of working capital and throws light on the importance of current assets of a firm. Total assets include fixed assets and current assets as a whole taken together.

Fixed assets include net block in fixed assets, capital work in progress and investment. Current assets include inventories, sundry debtors, cash and its equivalent and loans and advances. It should be worthwhile to observe that how much of that portion of total assets is occupied by the current assets, as current assets are essentially involved in forming working capital and also take an active part in increasing liquidity. Thus, this ratio should not be so large to ignore the application of the funds in fixed assets. Also care should be taken that principal investment of the firm should be in the operating items. This key ratio is important from the view point of liquidity. The higher CATA, the higher is liquidity and vice-versa.

2. **Inventory to total current assets ratio:** Inventory to Current Assets Ratio is calculated dividing inventory by total asset. It defined as what portion of a company's inventories is financed from its available cash, is essential to business which hold inventory and survive on cash supplies. It is an indicator of a company's efficiency. In general, the lower the ratio, the higher the liquidity of a company is. A low value of inventory to current assets ratio means that the company is carrying low level of inventory in stock which is the indicator of high liquidity. However, it is indicated insufficient inventories which may affect the production at the time of emergency. A high value of Inventory to Current Assets Ratio means that the company is carrying too much inventory in stock. It is not favorable for management because excessive inventories can place a heavy burden on the cash resources of a company. Effective inventory management is essential. The goal is to have enough Inventories to complete orders. Excessive inventory creates additional costs such as paying for storage space and inventory spoilage. A key issue for a company to improve its operation efficiency is to identify the optimum inventory levels and thus minimize the cost tied up in inventories.
3. **Debtor to total current assets ratio:** It indicates sundry debtors as total current assets and throws light on the importance of sundry debtors of a firm. Accounts receivables must be collected in a timely manner. The sooner company received the money owed, the sooner it can be re-invested to earn a profit. It should be

worthwhile to observe that how much of that portion of current assets is occupied by the sundry debtors as debtors are essentially involved in forming working capital and also take an active part in increasing liquidity. Funds that are employed in the business carry opportunity cost. Hence, if this ratio is very high, it means that credit policy of the company may not be sound; too much money was locked up in the debtors. If the money were not locked up in debtors, it could have been invested elsewhere to earn a return or may have been repaid to the financier. Higher the ratio, higher is the cost of carrying debtors. It is, therefore, desired that a company need to carry the least percentage of debtors as possible without affecting the sales volume. The lower the ratio, the higher is the liquidity and vice – versa.

4. **Cash to total current assets ratio:** It indicates cash as total current assets and throws light on the importance of cash of a firm. It measures the liquidity of a company. A high and increasing cash to current assets ratio generally a positive sign, showing the company's most liquid assets represent a larger portion of its current assets. A high volume of cash and cash equivalent means that the cash are idle which involved opportunity income forgone. Low cash to current assets may give better result but it has another affect to liquidity of the company. Therefore, both high and low value of cash to current ratio is not expected. The company should find an optimum level of cash to current assets.
5. **Loans and advances to total current assets ratio:** Loans and advances of pharmaceutical companies includes Loans and advances to related parties, Security deposit, Advance payment of Income Tax, Mat Credit Entitlement, Balance with govt. authorities(draw backs, custom duties receivables), loans to employee benefit trust, loan to employee and other loans and advances. It indicates loans and advances as total current assets and throws light on the importance of loans and advances of a firm. It measures the liquidity of a company. A high and increasing loans and advances to current assets ratio generally a positive sign, showing the company's most liquid assets represent a larger portion of its current assets. A high volume of loans and advances means that the loans and advances which involved opportunity income forgone. Low



loans and advances to current assets may give better result but it has another affect to liquidity of the company. Therefore, both high and low value of loans and advances to current assets ratio is not expected.

To analyse the working Capital financing strategy of the selected pharmaceuticals companies, Working Capital Leverage and Trade off between Risk and Profitability had been taken into consideration.

1. **Working capital leverage:** It measures the sensitivity of operating profit due to variability in the level of working capital (gross) with the help of computing the working capital leverage of the company for all years under study. The formula used for calculating the working capital leverage is:

$WCL = WC / (TA + CWC)$ , where WCL= working capital leverage, WC= Working Capital investment, TA= Total Assets Investment and CWC= Change in working Capital Investment. In computing the WCL it has been assumed that the change in working capital investment in the previous year will be maintained in the current year also. The higher the degree of WCL, the greater is the risk and vice versa. But at the same time, it increases the possibility of higher ROI.

2. **Trade off between risk and profitability:** Tradeoff between risk and profitability can be made by calculating the risk factor. The analysis can be done through which it can be said about the policies adopted while managing the working capital of the company, Risk factor had been calculated. Risk factor can be calculated through the following formula:

$$R_k = \frac{(E_j + L_j) - A_j}{C_j}$$

Where,  $R_k$  = Risk factor,  $E_j$  = Equity + Retained Earnings,  $L_j$  = Long term Loans,  $A_j$  = Fixed Assets,  $C_j$  = Current Assets

The above formula helps to know about the financing of the current assets through long term funds after fixed assets are financed in full. Based on the above formula, following inferences can be drawn:

1. Value of R is zero or less would mean that the firm is using the aggressive policy and normally the profitability would be high.
2. Value of R is 1 or close to 1 would mean that the firm is using a conservative policy and the profitability would be low.

Under aggressive policy the firm opts for a lower level of working capital thereby investing in current assets at lower proportion to total assets. When a firm adopts this policy, the profitability is high but at higher risk of liquidity. In case of conservative policy, the firm adopts a conservative approach of having high proportion of working capital. The profitability is relatively low as the return on current assets is normally less. But ensuring good liquidity as the risk of meeting current obligations is reduced.

**Motaal Liquidity Test:** To determine the liquidity position of the selected companies more precisely, a comprehensive test known as Motaals test has been done. In this test, Inventory to Current Assets ratio, Debtors to Current Assets ratio, Cash and bank to Current Assets ratio and Loans and Advances to Current assets ratio (each expressed as a fraction) are taken into consideration. For Inventory to Current assets ratio, lower the ratio, the more favorable is the liquidity position and vice versa; ranking has been done accordingly. For Debtors to Current Assets ratio, Cash and bank to Current Assets ratio and Loans and Advances to Current Assets ratio, higher the ratio, the more favorable is the position and ranking has been done accordingly. Ultimate ranking has been done on the basis of points; lower the points scored the more favorable are the position and vice versa. All these ranking point have been converted into value on the principle that higher the ranking point scored the more unfavorable and vice versa. All these values have been plotted in the graph and a linear trend line has been drawn to forecast the trend of liquidity of the selected samples.

To know the principal component of liquidity, profitability and efficiency, the factor analysis had been done. An attempt had been made here to club the homogeneous ratios in the form of liquidity, profitability or efficiency ratio through factor analysis. The principal component of liquidity had been chosen from Current ratio, quick ratio and absolute liquid ratios, the principal component of profitability had been chosen from

gross profit ratio, net profit ratio and return on capital employed and the principal component of efficiency had been chosen from inventory turnover ratio, debtors turnover ratio, cash turnover ratio, creditors turnover ratio and working capital turnover ratio.

### **2.3. Summary of the Chapter:**

To assess the working capital performance of the selected companies, secondary data had been collected and used. Secondary data on different components of working capital as well as gross and net working capital of the selected pharmaceutical companies had been collected from published annual reports. Besides these annual reports, the statistical hand book, published by the Govt. of West Bengal had been collected to get the CPI values and different websites had been used.

In methodological part to analyse the data from economic point of view best fitted trend equation was taken and auto-correlation was checked.

Different ratios were calculated to judge the selected companies liquidity, profitability and efficiency position.

Mortalls test was done to analyse selected companies liquidity position in depth. Working capital leverage and Risk factor were calculated to analyse working capital financing risk.

To know the principal component of liquidity, profitability and efficiency, the factor analysis had been done.

## CHAPTER-3

### LITERATURE REVIEW:

In this chapter I have attempted to review critically the earlier methodology used at research work to get an idea on the working capital management and to identify the lacuna of the earlier researchers. Some of the reviewed articles are mentioned below:

#### 3.1. REVIEW OF THE EXISTING LITERATURE

**Sagan, J(1955)** in his article entitled “**Towards a theory of Working Capital Management**” Published in ‘ The Journal Of Finance’, May 1955,PP 121-129 emphasized the need for management of working Capital and on cash flow generation. Beside control of inventories, receivables and payables because all these accounts affect cash position. The article was confined to mainly on the cash component. The other components of working capital were not reflected.. The traditional working capital ratios were not considered for decision making. The paper had not highlighted specifically on working capital management. in pharmaceutical industries. Further it had not focused how the managerial returns could be maximized.

**Appavadhanulu ,V.(1971)** in his article “ **Working Capital and Choice of Techniques**” published in ‘ Indian Economic Journal’ July-September, 1971, vol,xix, pp. 34-41, recognizing the lack of attention being given to investment in working capital, analyzed working capital management by examining the impact of method of production on investment in working capital. He emphasized that different production techniques require different amount of working capital by affecting goods in process because different techniques have differences in the length of production period, the rate of output flow per unit of time and time pattern of value addition. Different techniques would also affect the stock of raw materials and finished goods, by affecting lead time, optimum lot size and marketing lag of output disposals. He, therefore, hypothesized that choice of production technique could reduce the working capital needs. The study is mainly based on inventory management which is one of the components of working capital. The other components of working capital are not considered. The study is based on the choice of techniques by which the requirement of working capital may be reduced. Moreover, the

relation between working capital management and profitability is not examined. The article had not support the pharmaceutical industry.

**Smith K.V. (1973)** in his article entitled “**State of the art of working capital management**” published in ‘Financial Management’ autumn, PP50-55. He stressed the need for the development of a viable model with the dual finance goals of profitability and liquidity and argues that only such models will assist practicing financial managers in their day to day decision making. The study based on theory without any empirical support. The study did not mentioned about working capital management in pharmaceutical industry.

**Grablowsky, B.J. (1976)** in his article entitled “**Mismanagement of Accounting Receivable by Small Business**” published in the journal ‘Journal of Business’, vol-14 PP23-28. He found that there is a significant relationship between various success measures in the employment of formal working capital policies and procedures. The article had analyzed working capital management in small scale industry. The large scale industry like pharmaceutical industry had not covered by the article. Moreover, the liquidity and profitability relationship is not examined by the article. The article is mainly based on account receivables which is one of the components of working capital. The article analyzed the traditional working capital policy. The article had not shown the way by which the managerial returns, the profitability of the firm could be maximized.

**Lawrance Gitman, D Keith Forrester and John R Forresterin (1976)** in their article entitled “**Maximizing Cash Disbursement Float**” published in ‘Financial Management (summer 1976) pp 15-24. They have found that almost all large firms prepare cash forecast. In particular, the survey indicates that substantial number of firms keeps a stock of short term investments for precaution reasons. The other conclusion that may, firms also borrow to address un anticipated cash needs, either directly from banks or through the commercial paper market.

The study had mainly focused on the cash disbursement policy of the firms. The article had not focused on how the other component of working capital be managed suitably by which the liquidity and profitability be optimized. The study was confined to a limited

no. of sample data which may lead to some constraint for the universal application to all the firms. The pharmaceutical companies had not considered in the article.

**Walker, E. and Petty W. (1978)** in their article on “ **Financial differences between large and small firms**” published in ‘ Financial Management’, Winter PP 61-68. They pointed out that managing cash flow and cash conversion cycle is a critical component of overall financial management for all firms, especially those who are capital constrained and more reliant on short term sources of finance. The article had stressed only two components, cash flow and cash conversion cycle, as the critical component of financial management. However, the working capital management, which is the vital component of financial management had not considered here. The article had not discussed how the liquidity of the firm be strengthen. The article had not covered the profit maximization policy. Moreover, the article had not discussed about the consequences on pharmaceutical industry.

**Banerjee, B (1982)** in his article on “**Corporate Liquidity and Profitability in India**” published in Research Bulletin, ICWAI, Kolkata, July 1982, pp 225.234 had examined the interrelationship between liquidity and profitability by testing Gentry’s hypothesis in the context of Indian corporate sector. He found that the liquidity and profitability of Indian corporate sector was highly influenced by liquidity. However, the article had confined liquidity only. The profitability is largely dependent on working capital management also.

**Ghose,S.P (1983)** in his article on “**Working Capital in Crane manufacturer-A Case Study**” Published in The Management Accountant, June 1983, PP218-221, had assessed the contemporary working capital management in Crane manufacturing industry in India. He had found that the short term debt paying capacity of the sample companies was not satisfactory. Moreover the credit management policy of the sample companies was ineffective.

The article had not focused the component of working capital instead of sundry creditors. The article had not covered the working capital management of Indian Pharmaceutical industry.

**N. Hill, W Sartories and D Farguson (1983) in their article on “Corporate Credit and Payable Policy: A survey, Size and industry effects”** presented in the Financial Management Association’s 1983 Annual Meeting. They had conducted a survey of the accounts payable managers of 1479 firms of various sizes in various industries. A major thrust of this survey on two methods of obtaining finance from accounts payable by (1) skipping the discount and (2) stretching account payable.

The survey revealed that the vast majority of the firms generally take the discount. In deciding whether to take the discount, the primary criterion of most firms is the amount of discount. This makes good financial sense, since the amount of discount (along with the delay period from the discount date to the due date) determines the cost of skipping as a source of financing. The other financing strategies in connection with accounts payable are the stretching of payables beyond the due date.

Their survey revealed three important factors that are considered by firms in deciding whether to use this strategy; the value of using the funds (i.e. the cost of funds relative to other funding sources), the effects on relationships with supplies and the impact on the firm’s credit rating.

The survey is limited to the corporate credit and payable policy. The profitability of the firms depends on the efficient working capital management policy, in addition to credit and payable policy. The article had not highlighted the point. The article had not covered the whole things about the liquidity position of the firm. The article had not used the different accounting ratio which leads to the measurement of liquidity of the firms. The survey was made from the companies except pharmaceutical industry in India.

**Khandelwal, N.M (1985) in his article on “Working Capital Management in Small Scale Industries”** Published in Ashis Publishing House, New Delhi, revealed that the immediate liquidity position in respect of inventory and receivables of the selected units was unsatisfactory.

The study had not considered the other component of working capital. It had not focused on how the managerial return could be maximized. The study had not also focused liquidity position of Pharmaceutical industry in India.

**Farragher, E (1986)** in his article on “**Factoring Accounts Receivable**” published in ‘Journal of cash management’ (March-April, 1986). He has surveyed 33 firms. It revealed that most of the firms use the traditional forms of financing. The researcher also found that there is a growing interest among the firm in using factoring as an alternative means of financing. The article confined to the ‘**factoring**’ as a short term source of working capital. The article had not highlighted the working capital management policy.

**Venkatachalam and Murthy, D (1986)** in their article on “**Working Capital Trends in Private Corporate Sector**” Published in ‘Indian Management’, June 1986, PP 30-38, suggested that the liquidity status of the medium and large public limited companies was not impressive.

The study confined to the liquidity only. The profitability as well as working capital leverage was not considered. The article had not considered the real values as well as nominal values of the different component of working capital. It had failed to discuss the managerial return.

**Panda, G.S (1986)** in his article on “**Management of Working Capital in Small Scale Industries**”, Deep and Deep Publishers, New Delhi, 1986 studied the pattern of current assets financing on working capital management of 50 small scale industries. The study suggested that the selected samples possessed a low level of current ratio during the study period. The study also reflected that most of the sample units incurred huge losses and the samples units absolutely dependent on short term funds instead of long term funds to meet their working capital management requirements.

The study confined to small scale units in the state of Orissa only. The study had highlighted current assets financing instead of current asset management. The component of working capital like inventories, receivables, cash and bank and loans and advances were not taken into consideration for working capital management. The study had not focused the liquidity and its effect on profitability. The study had not also discussed on pharmaceutical industries in India.

**Sarkar, S.N (1987)** in his article on “**Liquidity Management in the Public Sector – A case study of a Government of West Bengal Undertaking**”, The Management



Accountant, Vol. 22, No. 7, PP 496-498 had found the different aspects of liquidity management of Durgapur Project Limited. Current ratio and liquidity ratio showed a satisfactory level.

The study had failed to analyze the turnover ratios for efficiency analysis. Moreover, no trade off between risk and profitability of the selected company in connection with its liquidity management was observed during the study period. The study had not focused how the managerial returns could be improved. The analysis was not considered pharmaceutical industries in India.

**Mukherjee, A. K. (1988)** in his article on “**Management of Working Capital in Public Enterprises**”, Vohra Publishers and Distributors, Allahabad examined the working capital management practices of the selected public enterprises in India. He found that the liquidity and profitability were inversely related.

The study had not discussed about the working capital management in the Pharmaceutical Companies in India. The study had not considered the efficiency ratio for determining working capital efficiency. Cash management, receivables management, Payables management are also the key factors for liquidity management which had not considered.

**Mishra, R. K. and Khan, N.C. (1990)** in their article on “**Management of Working Capital in ECIL**” Published in Journal of Accounting and Finance, Vol.4, No.3, PP-22-28 had observed that increasing trend in current ratio produced low return in Electric Corporation of India Ltd (ECIL).

The study only based on current ratio and its impact on return only. The liquid ratio, absolute liquid ratio which is the major parameter of determining liquidity had not been considered. The study was not related to Pharmaceutical companies in India. Moreover, the payables management had not been discussed in the article. The study had not also discussed how efficiently the components of working capital were managed.

**Prasad, B and Erasi, K (1990)** in their article on “**Working Capital Management in SSI- An Empirical Study**”, Journal of Accounting and Finance, Vol. 4, No. 3, PP-31-35

observed that more than fifty percent of total assets of the selected samples were in the form of current assets. The study also found that liquidity position of the selected samples was very poor due to huge investment was blocked in Inventories and Receivables during the study period.

The study confined to liquidity only. Moreover, the study had not considered cash and payables management which plays vital role for liquidity of a company. The study was done in small scale industries instead of large scale companies like Pharmaceuticals.

**Jain, P.K. (1993)** in his article on “**Management of Working Capital**” Published in RBSA Publishers, Jaipur, India, 1993 had made a comparative study of public sector and private sector companies in paper industries. The study showed that inventory management in private sector companies was comparatively better than that of public sector companies. Current ratio was taken as the key liquidity ratio.

The study had failed to analyse the other ratios of liquidity, efficiency and profitability. The study was confined in paper industries only. The study had failed to highlight how the return be maximized.

**Chakraborty, P.K and De, A.K. (1994)** in their article on “**Working Capital Management; A Case Study in the Eastern Coalfields Limited**” Published in Journal of Accounting and Finance, Vol.8 No. 3, PP-113-117 had found that the liquidity position was very poor. The long term funds were used in large proportion to meet the company’s short term obligations which affect the profitability of the company to a great extent.

The study was limited to liquidity only instead of efficiency and pattern of working capital financing. The study had not focused on growth of different component of working capital.

**Gilbert, E & Reichert, A (1995)** in their article on “**The practice of financial management among large United States Corporation**”, published in ‘Financial Practice and Education’ vol. 5(1), pp 16-23 found that account receivables management model are used by 59% of the firm to improve working capital management projects, while inventory management models were used by 60% of the companies out of a total

500 companies study. The article had confined to the selection between receivable management and inventory management in working capital management project. However, the article had not focused how the working capital is managed efficiently for enhancing the profitability of the firms. The cash management is the important factor in the working capital management including inventory and receivables. The article had untouched to the managerial return.

**Vijayakumar , A. and Venkatachalam,A. (1995)** in their article on “**Working Capital and Profitability – An Empirical Analysis**, Published in *The Management Accountant*, June 1995, PP748-750 revealed that liquidity and profitability were inversely related. However, Inventory turnover ratio and Debtors turnover ratio, both had a positive impact on profitability.

The study was confined to sugar industry in the state of Tamil Nadu. Current liabilities, cash were not considered as the key element of liquidity. The study had failed to focus how the liquidity and profitability could be improved.

**Peel, M.J. Wilson, N. (1996)** in their article on “ **Working Capital and Financial Management Practices in the small firm sector**” published in ‘ *Small Business Journal*’ Vol. 14 (2) PP 52-68, found that for small firm and growing business, an efficient working capital management is a vital component of success and survival i.e. both liquidity and profitability.

They have stressed on the efficient management of working capital and more recently good credit management practices as being pivotal to the health and performance of the small firm sector.

The article had not covered the liquidity and profitability in large firms. The article had failed to analyze how the profit could be maximized.

**Majumdar, C. (1996)** in his article on “**Borrowing as a source of Financing Working Capital in the Corporate Sector in India: An Empirical Analysis**” Published in *Finance India*, Vol. 10(1), PP-103-107 had suggested that the impact of working capital management on liquidity position of public sector companies was more significant than

that of in the private sector companies. The study mainly based on comparative study between public sector and Private Sector Company.

The study focused on working capital financing instead of working capital management. Liquidity and profitability had not analyzed in the articles. Moreover, the article had failed to indicate how the credit management be done efficiently.

**Refuse, M.E. (1996)** in his article on “**Working Capital Management: An urgent need to refocus**” published in ‘Management Decision Journal’, Vol. 34(2) concluded that the idea of delaying payment to the creditors as a strategy of improving capital. He also concluded that companies should strategize more on stock management based on lean supply chain techniques. The article had analyzed the necessity for working capital management. The article had not highlighted the possible way by which it can be done efficiently. Liquidity and profitability are two vital things which had not discussed in the article. The article was based on theoretical study rather empirical study. Delaying payment to the creditors may have the adverse effect in the mind of the creditors. The article had not discussed how the creditors would be satisfied.

**Smith, M. Beamont, Begemann, E (1997)** in his article on “**Measuring Association between Working Capital and Return on Investment**”, Published in ‘South African Journals of Business Management, Vol-28 No-1. They emphasized that those who promoted working capital theory shared that profitability and liquidity comprise the salient goals of working capital management. The problem arose because the maximization of firm’s returns could seriously threaten its liquidity and the pursuit of liquidity had a tendency to dilute returns.

The article evaluated the association between traditional and alternative working capital measures and returns on investment. They have attempted to examine whether more recently developed alternative working capital concepts showed improved association with return on investment to that of working capital ratios or not. They found that there were no significant differences amongst the years with respect to the independent variables. The result of regression shows that total current liabilities divided by fund flow, displayed the greatest association with return on investment. The statistical test

result showed that a traditional working capital leverage ratio, current liabilities divided by fund flow, displayed the greatest association with return on investment. Well known liquidity concept like current ratio, quick ratios registered insignificant associations only one of the working capital concepts, the comprehensive liquidity index indicated significant associations with return on investment.

**Sur, D. (1997)** in his article on “ **Working Capital Management in Colgate Palmolive (India) Ltd- a case study**” published in the Management Accountant, November, 1997, PP-828-831 & 833 suggested the immense attention on inventories is required for satisfactory liquidity position.

The study was confined to a single company only. The study was conducted mainly based on four ratios namely, inventories to current assets, debtors to current assets, loans and advances to current assets and cash and bank to current assets. However, the study had not analyzed the turnover ratios for determining liquidity of the company. The study had not focused the profitability and how it be optimized.

**Shin, H. H. and Sonen, L (1998)** in his article on “**Efficiency of Working Capital Management and Corporate Profitability**” Published in Financial Practice and Evolution, Vol 8 no 2, PP 37-45. They suggested that efficient working capital management was very important for creating value for the shareholders. The way working capital was managed had significant impact on both profitability and liquidity. Using correlation and regression analysis they justified the relationship between the length of the firm’s net trading cycle, corporate profitability and risk adjusted stock return. They found a strong negative relationship between lengths of the firm’s net trading cycle and its profitability. In addition, they also found that shorter net trade cycles were associated with high risk adjusted stock returns.

**Weinraub, H and Visscher, S (1998)** in their article on “**Industry Practice related to aggressive/ conservative policies**” published in ‘Journal of Financial Strategic Decision’ vol 11(2). They found that the firms have a tendency of low level of current ratios with low levels of current liabilities.

**Shin, H. H. and Sonen, L (1998)** in his article on “**Efficiency of working capital management in the profitability of Hindal co industries Ltd**” published in the journal ‘ICFAI, University Journal of Financial Economics’ vol 6(4), pp 62-72. They used a sample of 58895 firms’ year covering the period 1975-1994 in order to investigate the relation between net trade cycle that was used to measure the efficiency of working capital management and corporate profitability. In all cases they found a strong negative relation between the length of the firm’s net trade cycle and its profitability.

**Mallick, A.K and Sur, D. (1999)** in their article on “**Working Capital Management: A Case Study of Hindustan Unilever Limited**”, Finance India, September 1999, Vol. 13(3), pp-857-887 had found a close relationship among the liquidity of various components of working capital. The study also observed that a high degree of positive relationship between liquidity and profitability in the selected samples.

The study confined to a single company only. Moreover, the study related to liquidity and profitability only. Working capital financing, working capital leverage, growth of different component of working capital and how the components of working capital were used efficiently had not discussed in the article. The article had not related to pharmaceutical companies in India.

**Peel, M.J. Wilson, N Howarth, C A (2000)** in their article on “**Late Payment and Credit Management in the Small Firm Sector: Some Empirical Evidence**” , Published in ‘ International Small Business Journal’ Vol-18 (2), PP 52-68, suggested that small firms tend to have a relatively high proportion of current assets , less liquidity. They also opine that small firm exhibit volatile cash flows. They found that small firms are highly reliance on short term credit. The article did not cover for large scale industry. It had not highlighted specifically in pharmaceutical Industry.

**Narasimhan, M.S and Murty L.S (2001)** in their article on “**Emerging manufacturing Industry: A financial prospective**” published in ‘Management Review’, June, PP 105-112. They stress on the need money industries to improve their return on capital employed by focusing on some critical areas like cost containment, reducing investment in working capital and improving working capital efficiency.

**Deloof, M. (2003)** in his article on “**Does working capital management affect profitability of Belgian Firms?**” published in ‘Journal of Business Finance and Accounting’, Vol 3&4 PP573-587. He discussed that most firms had a large amount of cash invested in working capital using correlation and regression test, he found a significant relationship between gross operating income and the no. of days amount receivables inventories and accounts payables of Belgians firms. He suggested that manager could create value for their shareholders by reducing on the no. of days the accounts receivables and inventories to a reasonable minimum. The negative relationship between accounts payables and profitability is consistent with the view that less profitable firms wait longer to pay their bills.

**Ghosh. S.K and Maji, S.G (2003)** in his article on “**working capital management Efficiency: A study on the Indian cement industry**” published in ‘The Institute of Cost and Works Accountants of India’.

They had attempted to examine the efficiency of working capital management of the Indian cement companies during 1992-93 to 2001-02. For measuring the efficiency of working capital management, they have used performance and overall efficiency indices instead working capital management ratios. They had set industry norms as the target efficiency level of the individual firms. The study indicated that the cement industry as a whole did not perform remarkably well during this period.

**Howarth . C and Westhead, P. (2003)** in their article on “**The focus of working capital management in UK small firms**” published in ‘Management Accounting Research’ Vol-14 No-2, PP. 94-111. They have focused that small companies stressed on working capital management to improve marginal returns. But the article had not highlighted specifically on working capital management in pharmaceutical industries. Further, it had not focused how the managerial returns could be maximized.

**Eljelly, A. (2004)** in his article on “**Liquidity Profitability Trade off: An empirical investigation in an emerging market**”, published in ‘International Journal of Commerce And Management’, vol-14 no-2 PP 48-61. He has elucidated that efficient liquidity management involves planning and controlling current assets and current liabilities in

such a manner that eliminates the risk of inability to meet short term obligations and avoids excessive investment in these assets.

The relation between profitability and liquidity was examined as a measure by current ratio and cash conversion cycle (cash gap) on a sample of joint stock companies in Saudi Arabia using correlation and regression analysis.

The study found that the cash conversion cycle was more important as a measure of liquidity than the current ratio that affects the profitability.

The size variable was found to have significant effect on profitability at the industry level. The results were stable and had importance implications for liquidity management in various Saudi companies. He found that there was a negative relationship between profitability and liquidity indicator such as current ratio and cash gap. He also found that there was a great variation among industries with respect to the significant measure of liquidity.

He has measured the liquidity and profitability by current ratio and cash conversion cycle (cash gap) on a sample of joint stock companies in Saudi Arabia and it was examined by using the correlation and regression analysis. However, the article did not consider the other ratios of measuring liquidity and profitability of the firms.

**Garcia-Terupel, P.J. & Martinez-Solano, P (2004)** in their article on “**Effect of Working Capital Management on SME profitability**” published in ‘International Journal of Managerial Finance’ vol 13(2). They found that managers stand the chance of creating value by reducing the inventories and the no. of days in which there accounts are outstanding. They had used the sample of small and medium sized Spanish firms.

**Mallick, A.k., Sur, D. and Rakshit, D.(2005)** in their article on “**Working Capital and Profitability: A Study On Their Relationship With Reference To Selected Companies In Indian Pharmaceutical Industry**”, published in GITAM Journal of Management , July- December 2005, Vol. -3 No.-2, PP-51-52 had found that there was a positive influence of inventory management and debtors management on profitability in



majority of the selected samples but no definite relationship was established between liquidity and profitability from the empirical findings.

The study had not analysed working capital financing, component of different working capital and working capital leverage which are the important part of working capital management.

**Lazaridis, I. Tryfonidis, D, (2006)** in their article on “**Relationship between working capital management and profitability of companies listed in the Athens Stock Exchange**” published in ‘Journal of Financial Management and Analysis’ vol. 19(1), PP 26-35. They have investigated the relation between working capital management and profitability of listed companies in the Athens stock Exchange. The result from the regression analysis showed that there was a statistical significance between profitability measured through gross operating profit and the cash conversion cycle. From those results, they claimed that the managers could create value for shareholders by handling correctly the cash conversion cycle and keeping each different component to an optimum level.

**Padachi, Kesseven (2006)** in his article on “**Trend in working capital management and its impact on firm’s performance: An analysis of Mauritian small manufacturing firms**”, published in ‘International Review of Business Research papers’, vol.2 no. 2 pp 45-58. The objective of the study was to investigate the impact of Working Capital Management on corporate profitability of Mauritian Small Manufacturing firms. The study had shown that the paper and printing industry had been able to achieve high scores on various components of working capital and it had positive impact on its profitability.

The different analysis had identified critical management practices and is expected to assist managers in identifying areas where they might improve the financial performance of their operation. The working capital needs of an organization change over time as does its internal cash generation rate. The small firm should ensure a good synchronization of its assets and liabilities.

The analysis has been constrained by the sample size and the nature of the data which have well affected the data. The study did not also cover the large scale industry like Pharmaceutical.

**Jafar, A. & Sur. D. (2006)** in their article on “**Efficiency of working capital management in Indian Public enterprises during the post liberalization era: A case study of N.T.P.C**” published in ‘The IFCAI Journal of Management Research’. They concluded that the environmental influence arising from liberalization, globalization and competitiveness has a high influence in the management of working capital.

**Chowdhury, Anup. Amin, Md. Muntasir, (2007)** in their article on “**Working Capital Management Practiced in Pharmaceutical companies Listed in Dhaka Stock Exchange**”, published in ‘BRAC University Journal’ vol. - IV, no-2, PP75-86. The objective of the study was to critically evaluate working capital management as practiced in the selected firms of the Pharmaceutical industry.

They had achieved the policy and practices of cash management, evaluated principles, procedures and techniques of inventory management, receivable management and payable management. They concluded that pharmaceutical firms operated in Bangladesh are efficiently deal with their liquidity preferences and investment criteria and this is due to competitive nature of this industry.

However, they did not examine the political and economic impact on the working capital management.

They concluded that pharmaceutical industry in their country is a profitable sector. It was due to the reason that the firms in the industry are competitive and has gained efficiency in managing its resources competently.

The impact of overall working capital policy on profitability in this industry was proved to be significant and the ratios related to working capital can explain the differences between the firms.

A positive correlation had been found in the mathematical model, between current assets management and financial performance of pharmaceutical firms. Their findings from the

questionnaire that the sample firms have been efficient in managing cash Account Receivables and Payables.

**Raheman Abdul, Nasir, Mohammad (2007)** in their article on “**Working Capital Management and Profitability- case of Pakistani Firms**” published in ‘International Review of Business Research papers, vol-3 no 1 PP279-300. They had found that there is a significant relationship between net operating profitability and average collection period, average payment period, cash conversion cycle for a sample of Pakistani firms listed in Karachi stock exchange. The result also indicates that managers can create value for their shareholders by reducing the no. of day’s accounts receivables and inventories to a reasonable minimum. The negative relationship was found between accounts payable and profitability. The less profitable firms wait longer to pay their bills. They also suggested that the working capital management significantly affect the profitability of Pakistani firms. The negative relationship was found between the liquidity and profitability of the firms. They also found the positive relationship between size and profitability of the firm. There is an inverse relationship between debt financing and profitability. Debt financing affects the financial cost which leads to decreasing profitability. Strong negative relationship was found between the measures of working capital management and corporate profitability.

**Garcia – Teruel, P.J, Martinez-Solano, P, (2007)** in their article on “**Effects of working capital management on SME profitability**”, published in ‘International Journal of Managerial Finance’, Vol-3. They had studied the effects of working capital management on the profitability of a sample of 8872 small and medium sized enterprises (SME’s) from Spain covering the period 1996-2002. They found that managers can create value by reducing their inventories and the no. of days for which their accounts are outstanding. Moreover, shortening the cash conversion cycle also improves the firm’s profitability.

**Appuhami, Ranjit B A (2008)** in their article on “**The Impact of Firms Capital Expenditure on Working Capital Management: An Empirical Study across industries in Thailand**” published in ‘International Management Review, vol4 no 1 pp8-21. They had found that capital expenditure has positive relationship. They also found

that operating expenditure and interest expenditure also have a positive significant relationship with working capital requirement. Operating cash flow shows significant relationship with working capital requirement. They also concluded that Leverage, performance and growth have positive relationship with working capital requirement.

**Chakraborty, K. (2008)** in his article on “**Working Capital and Profitability: An empirical analysis of their relationship with reference to selected companies in the Indian pharmaceutical Industry**” published in “The ICFAI Journal of Management Research. He had evaluated the relationship between the working capital and profitability of Indian Pharmaceutical Companies. According to one school of thought, working capital was not a factor of improving profitability and there might be a negative relationship between them. The other schools indicated that investment in working capital plays a vital role to improve corporate profitability and unless there is a minimum level of investment of working capital, output and sales can not be mentioned- in fact, the inadequate of working capital would keep fixed assets in operative.

**Singh, P. (2008)** in his article on “**Inventory and Working capital management: An Empirical Analysis**”, published in ‘ICFAI University Journal of Accounting Research’. He found that a significant positive relationship existed between the size of inventories and working capital management. He also concluded that as the inventory was the major component of working capital it required carefully controlled.

**Afza, T. Nazir, M. (2009)** in their article on “**Impact of aggressive working capital management policy on firm’s profitability**”, published in ‘The IUP Journal of applied Finance’, Vol-15(8), PP 20-30. They had tried to investigate the international relation between working capital management policy and a firm’s profitability for a sample of 204 non financial firms listed on Karachi Stock Exchange for the period of 1998-2005. The study found significant different among their working capital requirements and financial policies across different industries. Moreover regression result found a negative relationship between the profitability of firms and degree of aggressiveness of working capital investment and financing policy. They suggested that managers could create decrease value if they adopt a conservative approach towards working capital investment and working capital financing policies.

**Uyar. A. (2009)** in his article on “**The relation of cash conversion cycle with size and profitability: An empirical investigation in Turkey**”, published in ‘International Research Journal of Finance and Economics’, PP 186-193. He found the lowest mean value of the cash conversion cycle in the retail/whole sale industry. He also found that there is a negative correlation between the cash conversion cycle and the variables, the size of the firm and the profitability.

Mandal, N and Goswami, S. (2010) in their article entitled “ Impact of Working Capital Management on Liquidity, Profitability and Non-Insurable Risk and Uncertainty Bearing: A Case study of Oil and Natural Gas Commission(ONGC)”, published in Great Lakes Herald, Vo.4, No 2, September 2010, PP – 21-42 had identified that the short term debt capacity of the company was satisfactory. The study also reflected that the liquidity position of the company was more or less improving over the period under study. The study had found a high degree of positive correlation between liquidity and profitability. The study also reflected that the company had maintained its bank balance at a higher level as compared to the other component of working capital.

The study focused on ONGC. The study had not discussed from which source, working capital be financed. Moreover, the study may not related to pharmaceutical companies in India.

**Gill. A & Biger. N (2010)** in their article on “**The relation between working capital management and Profitability: Evidence from the United States**”, published in ‘Business and Economics Journal’ vol. 2010, BEJ-10. They had tried to find out a relationship between working capital management and profitability. A sample of 88 American firms listed on New York Stock Exchange for a period of three years from 2005-2007 was selected. They found statistically significant relation between the cash conversion cycle and profitability measure through gross operating profit. It follows that managers can create profits for their companies by handling correctly the cash conversion cycle and by keeping accounts receivables at an optimum level.

**Danuletiu, Adina Elena (2010)** in her article on “**Working Capital Management and Profitability: A case study of Alba county companies**”, published in Annales

Universitatis Apulensis Series oeconomica, vol. 12(1) pp 364-374. The relation between the working capital management and profitability was examined by using Pearson correlation analysis and using a sample of 20 annual financial statements of companies, covering the period 2004-2008. She had concluded that there is a weak negative linear correlation between working capital management indicators and rate of profitability.

**H. Jamal Zubairy (2010)** in his article on “**Impact of Working Capital Management and Capital Structure on Profitability of Automobiles Firms in Pakistan**”, studied the effect of working capital management on profitability on the automobile production industry in Pakistan during the period 2000-2008. Current ratio has been used as the indicator of working capital management and financial leverage has been used as the indicator of capital structure. With the help of correlation coefficient and regression analysis, he concluded that companies must increase current assets and decrease current liabilities for maximizing profitability. There is a positive relation existing between profitability and financial leverage and an inverse relation existed between operational leverage and profitability.

**Chatterjee, Saswata (2010)** in his article on “**The Impact of Working Capital Management on the Profitability of the listed Companies in the London Stock Exchange**” found that a negative relation ship exist between working capital management and profitability i.e. increase in cash transformation cycle would result in a reduction in profitability and a negative relationship exists between liquidity and profitability as well.

**Mojtahedzadeh, Vida. Tabari S.H.Alavi. & Mosayebi, R (2011)** in their article on “**The relationship between working capital management and profitability of the companies (Case studies: Listed companies on (T.S.E)** published in ‘International Research Journal of Finance and Economics’ issue 76, PP 158-166. The objective of the study was to find out the relationship working capital management and corporate profitability. The finding established a negative relationship between cash conversion cycle, no. of days of accounts receivable and corporate profitability but no significant relationship was found between average period of retention and profitability. They concluded that there existed a significant relationship between corporate profitability and

working capital management. They also concluded that a positive relationship between sales and profitability and a negative significant relationship between financial debt ratio and profitability.

**Aminu, Yusuf. (2012)** in his article on “**A nexus between liquidity and profitability trade offs for working capital management in Nigerias manufacturing sector**” published in ‘International Journal of Arts and Commerce’ vol-1 no-6, PP 55-58 had concluded that the profitability/liquidity trade off had always been in conducive. The motive to strategy and practical existing circumstances are always critical factors that must be considered in maintaining a balance between liquidity and profitability.

The article had focused on liquidity and profitability on manufacturing sector in Nigeria. It had not discussed the components of working capital. However, the article had not considered how the working capital financing be made for optimum level of working capital.

### **3.2. SUMMARY OF THE CHAPTER**

From the review of the literatures, the following point can be summed up:

- The assessment of operating performance of liquidity management had been made by considering either by a particular company or a few companies belonging to particular industry like sugar, paper, steel, textile etc for a period of five to seven years only.
- A very few studies had been carried on liquidity management of pharmaceutical companies in India. Most of the studies are descriptive.
- A very few studies had been carried empirical studies where Karl Pearsons correlation co-efficient had been used to establish relationship between liquidity and profitability. Current ratio, Liquid ratio, inventory turnover ratio and debtors turnover ratio had been taken as the liquid ratio in most of the studies.
- A very few articles had been analysed working capital performance of a particular company or a few companies belonging to a particular industry. Moreover, in many of the cases the findings of the studies had failed to draw any meaningful

conclusion. However, payables which are the important part of working capital management had been omitted by most of the articles.

- A very few articles had considered payables as the important of liquidity component of a company.
- Most of the articles had failed to conclude how the liquidity be improved.
- The articles had not analysed working capital management in depth. Moreover, component wise analysis of total current assets had not been done, trend analysis of different component of working capital, working capital financing risk and working capital leverage had not been considered in most of the articles, particularly, in pharmaceutical companies in India. Principal component analysis to identify the major components which are responsible for changing liquidity, profitability and efficiency has not been done in the articles.

However, while making the present study it has been attempted to consider the significant pharmaceutical companies belonging to the pharmaceutical industry in India. Component wise analysis, trend analysis of different component of working capital, growth of different component of working capital, working capital financing risk and working capital leverage had been considered.



## CHAPTER – 4

### ASSESSMENT OF WORKING CAPITAL MANAGEMENT OF SOME SELECTED PHARMACEUTICAL COMPANIES FROM ECONOMIC POINT OF VIEW

To assess the Working Capital Management of some selected pharmaceutical companies from economic angle, trend analysis of different components of working capital as well as net working capital as a whole has been done. The parameters considered for evaluating the Working Capital Management are (i) Inventory, (ii) Debtors, (iii) Cash, (iv) Loans and Advances, (v) Creditors, (vi) Current liabilities and provisions, (vii) Total Current Assets, (viii) Net Working Capital

After necessary adjustments in the data sets the growth rates of different components of working capital of the selected pharmaceutical companies have been estimated both in nominal and real terms from the estimated coefficients of the chosen trend equation. The growth rates have been directly measured from the estimated co-efficient of 't' (i.e. time) in case exponential and log quadratic (with normalization of time i.e. shifting the origin to the mid-point of the time period ) trend equations or the models used to estimate the growth rates of different performance indicators are (i)  $\text{Log } y_t = a + bt$ ; (ii)  $\text{Log } y_t = a + bt + ct^2$ , where  $y_t$  is the variable whose over time growth is measured and  $t$  is the time variable. Log implies natural logarithm ( $\log_e$ ) and all others (a,b,c) are the parameters to be estimated.

The growth rates, expressed in percent per annum, are presented in Table (Table no 4.1 to 4.40), it is seen that the trend lines fitted to the time series of the performance indicators give good fits since  $R^2$  (adjusted  $R^2$ ), which is a measure of goodness of fit of each of the trend equations is statistically significantly different from zero. Further, from the values of DW statistic it is seen that the disturbance term did not present i.e. there was no auto-correlation problem in any of the trend equations.

## **4.1. LUPIN**

### **4.1.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.1, it is found that the nominal amount of Inventory of Lupin Ltd., had increased at an annual rate of 50.4% during the period 2000-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Lupin had been increasing at diminishing rates. These discouraging rates were also significant at 5% probability level. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.21, it is found that real amount of Inventory of Lupin had grown at the annual rate of 47.3% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Inventory of Lupin Ltd. was significant at 1% probability level.

### **4.1.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.1, it is found that the nominal amount of Debtors of Lupin Ltd., had increased at an annual rate of 22% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.21, it is found that real amount of debtors of Lupin has grown at the annual rate of 19.7% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of debtors of Lupin Ltd. is significant at 1% probability level.

#### **4.1.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.1, it is found that the nominal amount of cash of Lupin Ltd., had increased at an annual rate of 73.20% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of cash of Lupin had been increasing at diminishing rates. This discouraging rate was also significant at 10% probability level. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.21, it is found that real amount of cash of Lupin had grown at the annual rate of 70.1% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Lupin Ltd. was significant at 5% probability level.

#### **4.1.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.1, it is found that the nominal amount of Loans And Advances of Lupin Ltd., had increased at an annual rate of 16.50% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.21, it is found that real amount of Loans And Advances of Lupin had grown at the annual rate of 14.1% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Loans And Advances of Lupin Ltd. was significant at 1% probability level.

#### **4.1.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.1, it is found that the nominal amount of Creditors of Lupin Ltd., had increased at an annual rate of 54% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of cash of Lupin had been increasing at diminishing rates and this diminishing rate was significant at 5% probability level. This implies a discouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.21, it is found that real amount of debtors of Lupin had grown at the annual rate of 50.9% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Lupin Ltd. was significant at 1% probability level.

#### **4.1.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.1, it is found that the nominal amount of Current Liabilities and Provisions Analysis of Lupin Ltd., had increased at an annual rate of 62.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 10% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Lupin had been increasing at encouraging rates but this encouraging rate was not significant upto 10% probability level. This implies a encouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.21, it is found that real amount of Current Liabilities and Provisions Analysis of Lupin had grown at the annual rate of 59.7% and at the time of 1999-2000 to 2013- 2014. The

growth rate of real amount of Current Liabilities and Provisions Analysis of Lupin Ltd. was insignificant.

#### **4.1.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.1, it is found that the nominal amount of current assets of Lupin Ltd., had increased at an annual rate of 34.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of Inventory of Lupin had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.21, it is found that real amount of current assets of Lupin had grown at the annual rate of 31.7% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Lupin Ltd. was significant at 5% probability level.

#### **4.1.8. Net Working capital analysis**

From the estimated values of parameters presented in Table.4.1, it is found that the nominal amount of Net Working Capital of Lupin Ltd., had increased at an annual rate of 26.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of net working capital of Lupin had been increasing at increasing rates. This implies an encouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.21, it is

found that real amount of Net Working Capital of Lupin had grown at the annual rate of 18.2% and at the time of 1999-2000 to 2013-2014.

From Table – 4.1 and Table-4.21, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of cash were highest followed by the growth rate of Current Liabilities and Provision, growth rate of Creditors, growth rate of Inventory, growth rate of Current Assets, growth rate of Net Working Capital, growth rate of Debtors, and growth rate of Loans and Advances. These entire growth rate were significant at 1% probability level except cash balance (5% Level), Current Liabilities and Provision (10% Level), Current Assets (5% Level) and Net Working Capital (5% Level). In Inventory, Cash, Creditors, Current Liabilities and Provision, Current Assets and Net Working Capital parabolic equations were fitted of which it was found significantly discouraging trend in Inventory (5% Level), Cash (10% Level), and Creditors (5% Level) but the discouraging trend in current Assets was not significant up to 10% probability level. Moreover, the encouraging trend of Current Liabilities and Provision, and Net Working Capital were not also significant up to 10% probability level.

## **4.2. Dr. Reddy's Laboratories**

### **4.2.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.2, it is found that the nominal amount of Inventory of Dr. Reddy's Laboratories ., had increased at an annual rate of 29.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Dr. Reddy's Laboratories had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total Inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines

have been fitted. From the estimated parameters presented in Table 4.22, it is found that real amount of Inventory of Dr. Reddy's Laboratories had grown at the annual rate of 26.9% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Inventory of Dr. Reddy's Laboratories was significant at 5% probability level.

#### **4.2.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.2, it is found that the nominal amount of Debtors of Dr. Reddy's Laboratories., has increased at an annual rate of 18.30% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 5% probability level. It is also found that the growth rate of Debtors of Dr. Reddy's Laboratories had been increasing at increasing rates. This implies an encouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.22, it is found that real amount of debtors of Dr. Reddy's Laboratories has grown at the annual rate of 18.5% and at the time of 1999-2000 to 2013- 2014.

#### **4.2.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.2, it is found that the nominal amount of cash of Dr. Reddy's Laboratories had increased at an annual rate of 71.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of cash of Dr. Reddy's Laboratories had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.22, it is found that real amount

of cash of Dr. Reddy's had grown at the annual rate of 68.7% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of cash of Dr. Reddy's Laboratories was significant at 10% probability level.

#### **4.2.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.2, it is found that the nominal amount of Loans And Advances of Dr. Reddy's Laboratories, had increased at an annual rate of 57.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Loans And Advances of Dr. Reddy's Laboratories had been increasing at diminishing rates and this diminishing rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total loans and advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.22, it is found that real amount of Loans And Advances of Dr. Reddy's Laboratories had grown at the annual rate of 54.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Loans And Advances of Dr. Reddy's Laboratories was significant at 1% probability level.

#### **4.2.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.2, it is found that the nominal amount of Creditors of Dr. Reddy's Laboratories had increased at an annual rate of 47.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of cash of Dr. Reddy's Laboratories had been increasing at increasing rates and this increasing rate was significant at 1% probability level. This implies an encouraging trend in the inter temporal growth of total creditors.



To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.22, it is found that real amount of creditors of Dr. Reddy's Laboratories had grown at the annual rate of 44.6% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Dr. Reddy's Laboratories was significant at 1% probability level.

#### **4.2.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.2, it is found that the nominal amount of Current Liabilities and Provisions Analysis of Dr. Reddy's Laboratories had increased at an annual rate of 53.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Dr. Reddy's Laboratories had been increasing at diminishing rates and this diminishing rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.22, it is found that real amount of Current Liabilities and Provisions Analysis of Dr. Reddy's Laboratories had grown at the annual rate of 50.8% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions Analysis of Dr. Reddy's Laboratories was significant at 1% Probability level.

#### **4.2.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.2, it is found that the nominal amount of current assets of Dr. Reddy's Laboratories had increased at an annual rate of 39.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Dr.

Reddy's Laboratpries had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.22, it is found that real amount of current assets of Dr. Reddy's Laboratpries had grown at the annual rate of 36.3% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Dr. Reddy's Laboratpries was significant at 1% probability level.

#### **4.2.8. Net Working capital analysis**

From the estimated values of parameters presented in Table.4.2, it is found that the nominal amount of Net Working Capital of Dr. Reddy's Laboratpries had increased at an annual rate of 36.40% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of net working capital of Dr. Reddy's Laboratpries had been increasing at decreasing rates. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.22, it is found that real amount of Net Working Capital of Dr. Reddy's Laboratpries had grown at the annual rate of 33.33% and at the time of 1999-2000 to 2013-2014. It is also significant at 1% probability level.

From Table – 4.2 and Table-4.22, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of cash were highest followed by growth rate of Loans and Advances, the growth rate of Current Liabilities and Provision, growth rate of Creditors, growth rate of

Current Assets, growth rate of Net Working Capital, growth rate of Inventory and growth rate of Debtors. These entire growth rate were significant at 1% probability level except Debtors (5% Level) and Cash (5% Probability Level). In all cases, the parabolic equation were fitted and found there were a discouraging trend of Inventory (significant at 5% probability level), Cash (significant at 10% Probability level), Loans and Advances (significant at 1% probability level), Current Liabilities and Provisions (significant at 1% probability level), Current Assets (significant at 1% probability level) and Net Working Capital (significant at 5% probability level). However, an encouraging trend was observed in Debtors (not significant up to 10% probability level) and Creditors (significant at 1% probability level).

### **4.3 CIPLA**

#### **4.3.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.3, it is found that the nominal amount of Inventory of CIPLA had increased at an annual rate of 28% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of CIPLA had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.23, it is found that real amount of Inventory of CIPLA had grown at the annual rate of 24.9% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Inventory of CIPLA was significant at 1% probability level.

#### **4.3.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.3, it is found that the nominal amount of CIPLA has increased at an annual rate of 55.5% during the period

1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of CIPLA had been increasing at decreasing rates. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.23, it is found that real amount of debtors of CIPLA has grown at the annual rate of 52.5% and at the time of 1999-2000 to 2013- 2014.

#### **4.3.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.2, it is found that the nominal amount of cash of CIPLA had increased at an annual rate of 57.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of cash of CIPLA had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.23, it is found that real amount of cash of CIPLA had grown at the annual rate of 54.6% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of CIPLA was significant at 5% probability level.

#### **4.3.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.3, it is found that the nominal amount of Loans and Advances of CIPLA had increased at an annual rate of 33.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Loans and Advances of

CIPLA had been increasing at diminishing rates and this diminishing rate was significant at 5% probability level. This implies a discouraging trend in the inter temporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.23, it is found that real amount of Loans And Advances of CIPLA had grown at the annual rate of 30.8% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Loans and Advances of CIPLA was significant at 5% probability level.

#### **4.3.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.3, it is found that the nominal amount of Creditors of CIPLA had increased at an annual rate of 39.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of cash of CIPLA had been increasing at decreasing rates and this decreasing rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.23, it is found that real amount of creditors of CIPLA had grown at the annual rate of 36.3% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of CIPLA was significant at 1% probability level.

#### **4.3.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.3, it is found that the nominal amount of Current Liabilities and Provisions Analysis of CIPLA had increased at an annual rate of 35.4% during the period 1999-2000 to 2013-2014 and this growth

rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of CIPLA had been increasing at diminishing rates and this diminishing rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.23, it is found that real amount of Current Liabilities and Provisions Analysis of CIPLA had grown at the annual rate of 32.3% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions Analysis of CIPLA was significant at 1% Probability level.

#### **4.3.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.3, it is found that the nominal amount of current assets of CIPLA had increased at an annual rate of 38.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of CIPLA had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.23, it is found that real amount of current assets of CIPLA had grown at the annual rate of 35.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of CIPLA was significant at 1% probability level.

#### **4.3.8. Net Working capital analysis**

From the estimated values of parameters presented in Table.4.3, it is found that the nominal amount of Net Working Capital of CIPLA had increased at an annual rate of 37.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of net working capital of CIPLA had been increasing at decreasing rates. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.23, it is found that real amount of Net Working Capital of CIPLA had grown at the annual rate of 34.8% and at the time of 1999-2000 to 2013-2014. It is also significant at 1% probability level.

From Table – 4.3 and Table-4.23, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of cash were highest followed by growth rate of Debtors, growth rate of Creditors, growth rate of Current Assets, growth rate of Net Working Capital, the growth rate of Current Liabilities and Provision, growth rate of Loans and Advances and growth rate of Inventory. These entire growth rate were significant at 1% probability level. In all cases, parabolic equations were fitted and found there were discouraging trends. All these discouraging trends were significant at 1% probability level except Cash (Significant at 5% probability level) and Loans and Advances (significant at 5% probability level).

## **4.4 Piramal Enterprises**

### **4.4.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.4, it is found that the nominal amount of Inventory of Piramal Enterprises had increased at an annual rate of 23.1% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Piramal Enterprises had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.24, it is found that real amount of Inventory of Piramal Enterprises had grown at the annual rate of 20% and at the time of 1999-2000 to 2013-2014.

### **4.4.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.4, it is found that the nominal amount of Piramal Enterprises has increased at an annual rate of 24.7% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of Piramal Enterprises had been increasing at decreasing rates. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.24, it is found that real amount of debtors of Piramal Enterprises has grown at the annual rate of 21.7% and at the time of 1999-2000 to 2013- 2014.



#### **4.4.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.4, it is found that the nominal amount of cash of Piramal Enterprises had increased at an annual rate of 5.38% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.24, it is found that real amount of cash of Piramal Enterprises had grown at the annual rate of -33.10% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Piramal Enterprises was insignificant.

#### **4.4.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.4, it is found that the nominal amount of Loans and Advances of Piramal Enterprises had increased at an annual rate of 35.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Loans and Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.24, it is found that real amount of Loans and Advances of Piramal Enterprises had grown at the annual rate of 33.3% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Loans and Advances of Piramal Enterprises was significant at 1% probability level.

#### **4.4.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.4, it is found that the nominal amount of Creditors of Piramal Enterprises had increased at an annual rate of 19.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at

1% probability level. It is also found that the growth rate of cash of Piramal Enterprises had been increasing at decreasing rates and this decreasing rate was insignificant. This implies an discouraging trend in the intertemporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.24, it is found that real amount of creditors of Piramal Enterprises had grown at the annual rate of 13.7% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Piramal Enterprises was significant at 1% probability level.

#### **4.4.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.4, it is found that the nominal amount of Current Liabilities and Provisions Analysis of Piramal Enterprises had increased at an annual rate of 16.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions of Piramal Enterprises had been increasing at increasing rates and this increasing rate was significant at 1% probability level. This implies an encouraging trend in the intertemporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.24, it is found that real amount of Current Liabilities and Provisions of Piramal Enterprises had grown at the annual rate of 16.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Current Liabilities and Provisions of Piramal Enterprises was significant at 1% Probability level.

#### **4.4.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.4, it is found that the nominal amount of current assets of Piramal Enterprises had increased at an annual rate of 21.6% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Piramal Enterprises had been increasing at diminishing rates. This implies a discouraging trend in the intertemporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.24, it is found that real amount of current assets of Piramal Enterprises had grown at the annual rate of 18.5% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Piramal Enterprises was significant at 1% probability level.

#### **4.4.8. Net Working capital analysis**

From the estimated values of parameters presented in Table.4.4, it is found that the nominal amount of Net Working Capital of Piramal Enterprises had increased at an annual rate of 16.7% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant. It is also found that the growth rate of net working capital of Piramal Enterprises had been increasing at decreasing rates. This implies a discouraging trend in the intertemporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.24, it is found that real amount of Net Working Capital of Piramal Enterprises had grown at the annual rate of 13.8% and at the time of 1999-2000 to 2013-2014.

From Table – 4.4 and Table-4.24, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Loans and Advances were highest followed by the growth rate of Debtors, growth rate of Inventory, growth rate of Current Assets, growth rate of Creditors, growth rate of Net Working Capital, growth rate of Current Liabilities and Provision and growth rate of Cash. These entire growth rate were significant at 1% probability level except the growth rate of cash and Net Working Capital were not significant up to 10% probability level. Parabolic equations were fitted in all cases except in Cash and Loans and Advances and it was found that there were a discouraging trend in all cases except in Current Liabilities and Provision (encouraging trend). The discouraging trend in Inventory, Debtors and Current Assets were significant at 1% probability level but the trend Creditors, Current Liabilities and Provision and Net Working Capital were not significant up to 10% probability level.

## **4.5 Aurobindo Pharmaceuticals**

### **4.5.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.5, it is found that the nominal amount of Inventory of Aurobindo Pharmaceuticals had increased at an annual rate of 26.5% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Aurobindo Pharmaceuticals had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.25, it is found that real amount of Inventory of Aurobindo Pharmaceuticals had grown at the annual rate of

23.4% and at the time of 1999-2000 to 2013-2014 but this growth rate of real amount of Inventory of Aurobindo Pharmaceuticals was insignificant.

#### **4.5.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.5, it is found that the nominal amount of Aurobindo Pharmaceuticals has increased at an annual rate of 21.2% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of Aurobindo Pharmaceuticals had been increasing at decreasing rates. This implies an discouraging trend in the intertemporal growth of total debtors.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.25, it is found that real amount of debtors of Aurobindo Pharmaceuticals has grown at the annual rate of 18% and at the time of 1999-2000 to 2013- 2014.

#### **4.5.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.5, it is found that the nominal amount of cash of Aurobindo Pharmaceuticals had increased at an annual rate of 79.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of cash of Aurobindo Pharmaceuticals had been increasing at diminishing rates. This implies a discouraging trend in the intertemporal growth of total cash.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.25, it is found that real amount of cash of Aurobindo Pharmaceuticals had grown at the annual rate of 76.8% and at the

time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Aurobindo Pharmaceuticals was significant at 5% probability level.

#### **4.5.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.5, it is found that the nominal amount of Loans and Advances of Aurobindo Pharmaceuticals had increased at an annual rate of 46.5% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Loans and Advances of Aurobindo Pharmaceuticals had been increasing at diminishing rates and this diminishing rate was significant at 1% probability level. This implies a discouraging trend in the intertemporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.25, it is found that real amount of Loans And Advances of Aurobindo Pharmaceuticals had grown at the annual rate of 43.4% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Loans and Advances of Aurobindo Pharmaceuticals was significant at 1% probability level.

#### **4.5.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.5, it is found that the nominal amount of Creditors of Aurobindo Pharmaceuticals had increased at an annual rate of 23.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of cash of Aurobindo Pharmaceuticals had been increasing at decreasing rates and this decreasing rate was significant at 1% probability level. This implies a discouraging trend in the intertemporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by

deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.25, it is found that real amount of creditors of Aurobindo Pharmaceuticals had grown at the annual rate of 23.9% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Aurobindo Pharmaceuticals was insignificant.

#### **4.5.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.5, it is found that the nominal amount of Current Liabilities and Provisions Analysis of Aurobindo Pharmaceuticals had increased at an annual rate of 22.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Aurobindo Pharmaceuticals had been increasing at diminishing rates but this diminishing rate was not significant up to 10% probability level. This implies a discouraging trend in the intertemporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.25, it is found that real amount of Current Liabilities and Provisions Analysis of Aurobindo Pharmaceuticals had grown at the annual rate of 19.2% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions Analysis of Aurobindo Pharmaceuticals was insignificant.

#### **4.5.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.5, it is found that the nominal amount of current assets of Aurobindo Pharmaceuticals had increased at an annual rate of 32.6% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Aurobindo Pharmaceuticals had been increasing at diminishing rates and this diminishing

rate was significant at 1% probability level. This implies a discouraging trend in the intertemporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.25, it is found that real amount of current assets of Aurobindo Pharmaceuticals had grown at the annual rate of 29.5% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Aurobindo Pharmaceuticals was significant at 1% probability level.

#### **4.5.8. Net Working capital analysis**

From the estimated values of parameters presented in Table.4.5, it is found that the nominal amount of Net Working Capital of Aurobindo Pharmaceuticals had increased at an annual rate of 35.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of net working capital of Aurobindo Pharmaceuticals had been increasing at decreasing rates. This discouraging rate of growth was significant at 1% probability level. This implies a discouraging trend in the intertemporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.25, it is found that real amount of Net Working Capital of Aurobindo Pharmaceuticals had grown at the annual rate of 32.6% and at the time of 1999-2000 to 2013-2014. It is also significant at 1% probability level.

From Table – 4.5 and Table-4.25, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of cash were highest followed by the growth rate of Loans and Advances,



growth rate of Net Working Capital, growth rate of Current Assets, growth rate of Inventory, growth rate of Creditors, growth rate of Current Liabilities and Provision and growth rate of Debtors. These entire growth rates were significant at 1% probability level except Cash (5% level). In all these cases parabolic equations were fitted and found there were a discouraging trend and these trend were significant at 1% probability level except Inventory (10% probability level), cash (5% probability level) and the discouraging trend of Debtors, Creditors and Current Liabilities were not significant up to 10% probability level.

## **4.6 Cadila Health Care Ltd**

### **4.6.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.6, it is found that the nominal amount of Inventory of Cadila Health Care Ltd had increased at an annual rate of 24.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Cadila Health Care Ltd had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.26, it is found that real amount of Inventory of Cadila Health Care Ltd had grown at the annual rate of 21.2% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Cadila Health Care Ltd was significant at 1% probability level.

### **4.6.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.6, it is found that the nominal amount of Cadila Health Care Ltd has increased at an annual rate of 25.3% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of Cadila Health Care

Ltd had been increasing at decreasing rates. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.26, it is found that real amount of debtors of Cadila Health Care Ltd has grown at the annual rate of 22.2% and at the time of 1999-2000 to 2013- 2014 which is significant at 1% probability level.

#### **4.6.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.6, it is found that the nominal amount of cash of Cadila Health Care Ltd had decreased at an annual rate of 79.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of cash of Cadila Health Care Ltd had been decreasing at increasing rates. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.26, it is found that real amount of cash of Cadila Health Care Ltd had declined at the annual rate of 77.6% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of cash of Cadila Health Care Ltd was significant at 5% probability level.

#### **4.6.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.6, it is found that the nominal amount of Loans and Advances of Cadila Health Care Ltd had increased at an annual rate of 19.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. This implies a discouraging trend in the intertemporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.26, it is found that real amount of Loans And Advances of Cadila Health Care Ltd had grown at the annual rate of 17.5% and at the time of 1999-2000 to 2013- 2014.

#### **4.6.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.6, it is found that the nominal amount of Creditors of Cadila Health Care Ltd had increased at an annual rate of 31.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of cash of Cadila Health Care Ltd had been increasing at decreasing rates and this decreasing rate was significant at 1% probability level. This implies a discouraging trend in the intertemporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.26, it is found that real amount of creditors of Cadila Health Care Ltd had grown at the annual rate of 28.7% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Cadila Health Care Ltd was significant at 5% probability level.

#### **4.6.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.6, it is found that the nominal amount of Current Liabilities and Provisions of Cadila Health Care Ltd had increased at an annual rate of 29.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Cadila Health Care Ltd had been increasing at diminishing rates but this diminishing rate was significant at 5% probability

level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.26, it is found that real amount of Current Liabilities and Provisions Analysis of Cadila Health Care Ltd had grown at the annual rate of 26.9% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions Analysis of Cadila Health Care Ltd was significant at 5% probability level.

#### **4.6.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.5, it is found that the nominal amount of current assets of Cadila Health Care Ltd had increased at an annual rate of 15.1% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.26, it is found that real amount of current assets of Cadila Health Care Ltd had grown at the annual rate of 12.7% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Cadila Health Care Ltd was significant at 1% probability level.

#### **4.6.8. Net Working capital analysis**

From the estimated values of parameters presented in Table.4.6, it is found that the nominal amount of Net Working Capital of Cadila Health Care Ltd had increased at an annual rate of 15.4% during the period 1999-2000 to 2013-2014 and this growth rate was

significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.26, it is found that real amount of Net Working Capital of Cadila Health Care Ltd had declined at the annual rate of 17.4% and at the time of 1999-2000 to 2013-2014. It is also significant at 10% probability level.

From Table – 4.6 and Table-4.26, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Creditors were highest followed by the growth rate of Current Liabilities and Provision, growth rate of Debtors, growth rate of Inventory, growth rate of Loans and Advances, growth rate of Net Working Capital, growth rate of Current Assets and growth rate of cash. All these growth rates were significant at 1% probability level except Cash (5% probability level). In some cases parabolic equations were fitted and found discouraging trend of Cash, Debtors, Creditors and Current Liabilities and encouraging trend of cash. All these trends were significant at 1% probability level except Creditors (5% level), Current Liabilities and Provisions (5% level) and and the trend of Debtors was not significant up to 10% probability level.

## **4.7 Divis Labs**

### **4.7.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.7, it is found that the nominal amount of Inventory of Divis Labs had increased at an annual rate of 25.6% during the period 2000-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Divis Labs had been increasing at

diminishing rates. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.27, it is found that real amount of Inventory of Divis Labs had grown at the annual rate of 28.7% and at the time of 2000 to 2014. The growth rate of real amount of Inventory of Divis Labs. was significant at 1% probability level.

#### **4.7.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.7, it is found that the nominal amount of Debtors of Divis Labs has increased at an annual rate of 29.6% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Inventory of Divis Labs had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.27, it is found that real amount of debtors of Divis Labs has grown at the annual rate of 32.7% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of debtors of Divis Labs is significant at 1% probability level.

#### **4.7.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.7, it is found that the nominal amount of cash of Divis Labs had increased at an annual rate of 12.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.27, it is found that real amount of cash of Divis Labs had grown at the annual rate of 15.2% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Divis Labs was significant at 1% probability level.

#### **4.7.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.7, it is found that the nominal amount of Loans and Advances of Divis Labs had increased at an annual rate of 32.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Loans and Advances of Divis Labs had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.27, it is found that real amount of Loans and Advances of Divis Labs had grown at the annual rate of 35.40% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Loans and Advances of Divis Labs was significant at 1% probability level.

#### **4.7.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.7, it is found that the nominal amount of Creditors of Divis Labs had increased at an annual rate of 54% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of cash of Divis Labs had been increasing at diminishing rates and this diminishing rate was significant at 5% probability level. This implies a discouraging trend in the intertemporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.27, it is found that real amount of Creditors of Divis Labs had grown at the annual rate of 20.5% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Divis Labs was significant at 1% probability level.

#### **4.7.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.7, it is found that the nominal amount of Current Liabilities and Provisions Analysis of Divis Labs had increased at an annual rate of 15.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Divis Labs had been increasing at encouraging rates but this encouraging rate was insignificant. This implies an encouraging trend in the intertemporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.27, it is found that real amount of Current Liabilities and Provisions of Divis Labs had grown at the annual rate of 18.3% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions Analysis of Divis Labs was significant at 1% probability level.

#### **4.7.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.7, it is found that the nominal amount of current assets of Divis Labs had increased at an annual rate of 27.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Divis Labs had been increasing at diminishing rates. This discouraging rate was also significant at 1%



probability level. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.27, it is found that real amount of current assets of Divis Labs had grown at the annual rate of 30.8% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Divis Labs was significant at 1% probability level.

#### **4.7.8. Net Working capital analysis**

From the estimated values of parameters presented in Table.4.7, it is found that the nominal amount of Net Working Capital of Divis Labs had increased at an annual rate of 38.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of net working capital of Divis Labs had been increasing at decreasing rates. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.27, it is found that real amount of Net Working Capital of Divis Labs had grown at the annual rate of 41.5% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Net Working Capital of Divis Labs was significant at 1% probability level.

From Table – 4.7 and Table-4.27, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Net Working Capital were highest followed by the growth rate of Loans and Advances, growth rate of Debtors, growth rate of Current Assets, growth rate of

Inventory, growth rate of Creditors, growth rate of Current Liabilities and Provision and growth rate of cash. All these growth rates were significant at 1% probability level. All cases parabolic equations were fitted except of Cash. It was found discouraging trend of Inventory, Debtors, Loans and Advances, Creditors, Current Assets and Net Working Capital and encouraging trend of Current Liabilities and Provisions. It was also found that all these discouraging trends and encouraging trend were not significant up to 10% probability level except Debtors (10% level), Current Assets (1% level) and Net Working Capital (1% level)

#### **4.8. Strides Archolabs**

##### **4.8.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.8, it is found that the nominal amount of Inventory of Strides Archolabs had increased at an annual rate of 9.86% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.28, it is found that real amount of Inventory of Strides Archolabs had grown at the annual rate of 7.51% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Strides Archolabs was significant at 1% probability level.

##### **4.8.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.8, it is found that the nominal amount of Strides Archolabs has increased at an annual rate of 18.7% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of Strides Archolabs had been increasing

at decreasing rates. This discouraging trend was also significant at 5% probability level. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.28, it is found that real amount of debtors of Strides Archolabs has grown at the annual rate of 15.7% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of Debtors of Strides Archolabs was significant at 1% probability level.

#### **4.8.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.8, it is found that the nominal amount of cash of Strides Archolabs had increased at an annual rate of 16.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.28, it is found that real amount of cash of Strides Archolabs had declined at the annual rate of 14.1% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of cash of Strides Archolabs was significant at 1% probability level.

#### **4.8.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.8, it is found that the nominal amount of Loans and Advances of Strides Archolabs had increased at an annual rate of 36.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of cash of Strides Archolabs had been increasing at decreasing rates and this decreasing rate was

insignificant. This implies a discouraging trend in the inter temporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.28, it is found that real amount of Loans And Advances of Strides Archolabs had grown at the annual rate of 21.1% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 1% probability level.

#### **4.8.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.8, it is found that the nominal amount of Creditors of Strides Archolabs had increased at an annual rate of 17% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.28, it is found that real amount of creditors of Strides Archolabs had grown at the annual rate of 14.6% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Strides Archolabs was significant at 1% probability level.

#### **4.8.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.8, it is found that the nominal amount of Current Liabilities and Provisions of Strides Archolabs had increased at an annual rate of 31.1% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Strides Archolabs had been increasing at

diminishing rates but this diminishing rate was significant at 5% probability level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.28, it is found that real amount of Current Liabilities and Provisions of Strides Archolabs had grown at the annual rate of 28.1% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Current Liabilities and Provisions Analysis of Strides Archolabs was significant at 5% probability level.

#### **4.8.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.8, it is found that the nominal amount of current assets of Strides Archolabs d had increased at an annual rate of 26.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of Current Assets of Strides Archolabs had been increasing at diminishing rates but this diminishing rate was insignificant. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.28, it is found that real amount of current assets of Strides Archolabs had grown at the annual rate of 15.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Strides Archolabs was significant at 1% probability level.

#### **4.8.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.8, it is found that the nominal amount of Net Working Capital of Strides Archolabs had increased at an annual rate of 15.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of Current Assets of Strides Archolabs had been increasing at diminishing rates but this diminishing rate was insignificant. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.28, it is found that real amount of Net Working Capital of Strides Archolabs had declined at the annual rate of 28.1% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was significant at 10% probability level.

From Table – 4.8 and Table-4.28, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Loans and Advances were highest followed by the growth rate of Net Working Capital, growth rate of Current Liabilities and Provision, growth rate of Current Assets, growth rate of Debtors, growth rate of Creditors, growth rate of cash and growth rate of Inventory. All these growth rates were significant at 1% probability level except Loans and Advances ( 5% level), Current Assets (5% level), and Net Working Capital (5% level). In some cases parabolic equations were fitted and found discouraging trend. All these trends were not significant up to 10% probability level except Debtors (5% level) and Current Liabilities (5% level).

## **4.9. Sun Pharmaceuticals**

### **4.9.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.9, it is found that the nominal amount of Inventory of Sun Pharmaceuticals had increased at an annual rate of 20.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Sun Pharmaceuticals had been increasing at decreasing rates. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.29, it is found that real amount of Inventory of Sun Pharmaceuticals had grown at the annual rate of 14.8% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Sun Pharmaceuticals was significant at 1% probability level.

### **4.9.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.9, it is found that the nominal amount of Sun Pharmaceuticals has increased at an annual rate of 41.3% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of Sun Pharmaceuticals had been increasing at decreasing rates. This discouraging trend was also significant at 5% probability level. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.29, it is found that real amount of debtors of Sun Pharmaceuticals has grown at the annual rate of 38.2% and at the time

of 1999-2000 to 2013- 2014. The declined rate of real amount of Debtors of Sun Pharmaceuticals was significant at 1% probability level.

#### **4.9.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.9, it is found that the nominal amount of cash of Sun Pharmaceuticals had increased at an annual rate of 148.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Cash of Sun Pharmaceuticals had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.29, it is found that real amount of cash of Sun Pharmaceuticals had declined at the annual rate of 145.2% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of cash of Sun Pharmaceuticals was significant at 1% probability level.

#### **4.9.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.9, it is found that the nominal amount of Loans and Advances of Sun Pharmaceuticals had increased at an annual rate of 23.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Loans and Advance of Sun Pharmaceuticals had been increasing at decreasing rates and this decreasing rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the



chosen trend lines have been fitted. From the estimated parameters presented in Table 4.29, it is found that real amount of Loans And Advances of Sun Pharmaceuticals had grown at the annual rate of 20.9% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 1% probability level.

#### **4.9.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.9, it is found that the nominal amount of Creditors of Sun Pharmaceuticals had increased at an annual rate of 42.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Creditors of Sun Pharmaceuticals had been increasing at decreasing rates and this decreasing rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.29, it is found that real amount of creditors of Sun Pharmaceuticals had grown at the annual rate of 39.2% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Sun Pharmaceuticals was significant at 1% probability level.

#### **4.9.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.9, it is found that the nominal amount of Current Liabilities and Provisions of Sun Pharmaceuticals had increased at an annual rate of 31.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Sun Pharmaceuticals had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.29, it is found that real amount of Current Liabilities and Provisions of Sun Pharmaceuticals had grown at the annual rate of 25.2% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions of Sun Pharmaceuticals was significant at 1% probability level.

#### **4.9.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.9, it is found that the nominal amount of current assets of Sun Pharmaceuticals had increased at an annual rate of 44% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of Current Assets of Sun Pharmaceuticals had been increasing at diminishing rates. This diminishing rate was also significant at 5% probability level. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.29, it is found that real amount of current assets of Sun Pharmaceuticals had grown at the annual rate of 40.9% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Sun Pharmaceuticals was significant at 1% probability level.

#### **4.9.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.9, it is found that the nominal amount of Net Working Capital of Sun Pharmaceuticals had increased at an annual rate of 43.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Sun Pharmaceuticals had been increasing at diminishing rates. This diminishing rate

was significant at 10% probability level. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.29, it is found that real amount of Net Working Capital of Sun Pharmaceuticals had declined at the annual rate of 40.6% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was significant at 1% probability level.

From Table – 4.9 and Table-4.29, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of cash were highest followed by the growth rate of Current Assets, growth rate of Net Working Capital, growth rate of Creditors, growth rate of Debtors, growth rate of Current Liabilities and Provision, growth rate of Loans and Advances and growth rate of Inventory. All these growth rates were significant at 1% probability level. In all cases trend equations were fitted except of Loans and Advances and found discouraging trends. It was found that trend of Debtors and trend of Current Assets were significant at 5% probability level. trend of Cash, trend of Creditors were significance at 1% probability level, and trend of Net Working Capital was significance at 10% probability level. It was also found that the trend of Inventory, Current Liabilities and Provisions were not significant up to 10% probability level.

#### **4.10. Biocon Pharmaceuticals**

##### **4.10.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.10, it is found that the nominal amount of Inventory of Biocon Pharmaceuticals had increased at an annual rate of 39.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Biocon

Pharmaceuticals had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.30, it is found that real amount of Inventory of Biocon Pharmaceuticals had grown at the annual rate of 36.10% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Biocon Pharmaceuticals was significant at 1% probability level.

#### **4.10.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.10, it is found that the nominal amount of Biocon Pharmaceuticals has increased at an annual rate of 39.6% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of Biocon Pharmaceuticals had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.30, it is found that real amount of debtors of Biocon Pharmaceuticals s has grown at the annual rate of 36.5% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of Debtors of Biocon Pharmaceuticals was significant at 1% probability level.

#### **4.10.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.10, it is found that the nominal amount of cash of Biocon Pharmaceuticals had increased at an annual rate of

142.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 10% probability level. It is also found that the growth rate of Cash of Biocon Pharmaceuticals had been increasing at decreasing rates. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.30, it is found that real amount of cash of Biocon Pharmaceuticals had grown at the annual rate of 139.7% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Biocon Pharmaceuticals was significant at 5% probability level.

#### **4.10.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.10, it is found that the nominal amount of Loans and Advances of Biocon Pharmaceuticals had increased at an annual rate of 41.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Loans and Advance of Biocon Pharmaceuticals had been increasing at decreasing rates. This implies a discouraging trend in the inter temporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.30, it is found that real amount of Loans And Advances of Biocon Pharmaceuticals had grown at the annual rate of 35% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 1% probability level.

#### **4.10.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.10, it is found that the nominal amount of Creditors of Biocon Pharmaceuticals had increased at an annual rate

of 39.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Creditors of Biocon Pharmaceuticals had been increasing at decreasing rates and this decreasing rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.30, it is found that real amount of creditors of Biocon Pharmaceuticals had grown at the annual rate of 36.8% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Biocon Pharmaceuticals was significant at 1% probability level.

#### **4.10.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.10, it is found that the nominal amount of Current Liabilities and Provisions of Biocon Pharmaceuticals had increased at an annual rate of 43.5% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Biocon Pharmaceuticals had been increasing at diminishing rates. This diminishing rate was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.30, it is found that real amount of Current Liabilities and Provisions of Biocon Pharmaceuticals had grown at the annual rate of 40.4% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions of Biocon Pharmaceuticals was significant at 1% probability level.

#### **4.10.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.10, it is found that the nominal amount of current assets of Biocon Pharmaceuticals had increased at an annual rate of 41.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Biocon Pharmaceuticals had been increasing at diminishing rates. This diminishing rate was also significant at 5% probability level. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.30, it is found that real amount of current assets of Biocon Pharmaceuticals had grown at the annual rate of 38.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Biocon Pharmaceuticals was significant at 1% probability level.

#### **4.10.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.10, it is found that the nominal amount of Net Working Capital of Biocon Pharmaceuticals had increased at an annual rate of 39.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Biocon Pharmaceuticals had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.30, it is found that real amount of Net Working Capital of Biocon Pharmaceuticals had declined at the annual rate of 26% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was significant at 1% probability level.

From Table – 4.10 and Table-4.30, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of cash were highest followed by the growth rate of Current Liabilities and Provision, growth rate of Loans and Advances, growth rate of Current Assets, growth rate of Creditors, growth rate of Net Working Capital, growth rate of Debtors and growth rate of Inventory. All these growth rates were significant at 1% probability level except cash (5% level). In all cases, parabolic equations were fitted and found discouraging trends. All these trends were not significant up to 10% probability level except Debtors (1% level), Inventory (1% level), Creditors (1% level), Current Liabilities and Provisions (1% level) and Current Assets (5% level).

#### **4.11. Kopran**

##### **4.11.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.11, it is found that the nominal amount of Inventory of Kopran had decreased at an annual rate of 36.10% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the declined rate of Inventory of Kopran had been increasing at increasing rates. This encouraging trend was also significant at 1% probability level. This implies an encouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.31, it is found that real amount of Inventory of Kopran had declined at the annual rate of 39.10% and at the time of 1999-2000 to 2013-2014 and this declined rate of real amount of Inventory of Kopran was significant at 1% probability level.



#### **4.11.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.11, it is found that the nominal amount of Kopran had decreased at an annual rate of 21.9% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 5% probability level. It is also found that the declined rate of Debtors of Kopran had been increasing at increasing rates. This encouraging trend was also significant at 5% probability level. This implies an encouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.31, it is found that real amount of debtors of Kopran has grown at the annual rate of (-)25% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of Debtors of Kopran was significant at 5% probability level.

#### **4.11.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.11, it is found that the nominal amount of cash of Kopran had decreased at an annual rate of 11.1% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant. It is also found that the growth rate of Cash of Kopran had been increasing at increasing rates. This implies an encouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.31, it is found that real amount of cash of Kopran had declined at the annual rate of 14.10% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of cash of Kopran was significant at 10% probability level.

#### **4.11.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.11, it is found that the nominal amount of Loans and Advances of Kopran had increased at an annual rate of 0.043% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.31, it is found that real amount of Loans And Advances of Kopran had grown at the annual rate of -1.92% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also insignificant.

#### **4.11.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.11, it is found that the nominal amount of Creditors of Kopran had increased at an annual rate of 3.08% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.31, it is found that real amount of creditors of Kopran had grown at the annual rate of -1.37% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Kopran was also insignificant.

#### **4.11.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.11, it is found that the nominal amount of Current Liabilities and Provisions of Kopran had increased at an annual rate of .09% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant. It is also found that the growth rate of Current Liabilities and Provisions

Analysis of Kopran had been increasing at diminishing rates. This diminishing rate was also insignificant.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.31, it is found that real amount of Current Liabilities and Provisions of Kopran had grown at the annual rate of -1.45% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions of Kopran was insignificant .

#### **4.11.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.11, it is found that the nominal amount of current assets of Kopran had increased at an annual rate of -15.5% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Kopran had been increasing at increasing rates. This increasing rate was also significant at 5%probability level. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.31, it is found that real amount of current assets of Kopran had grown at the annual rate of -18.5% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Kopran was significant at 1% probability level.

#### **4.11.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.11, it is found that the nominal amount of Net Working Capital of Kopran had increased at an annual rate of -

24.10% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Kopran had been increasing at increasing rates and the increasing rate of real amount of net working capital of Kopran was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.31, it is found that real amount of Net Working Capital of Kopran had declined at the annual rate of 27.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Kopran was significant at 1% probability level.

From Table – 4.11 and Table-4.31, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Creditors were highest followed by the growth rate of Loans and Advances, growth rate of Current Liabilities and Provision, growth rate of Cash, growth rate of Current Assets, growth rate of Debtors, growth rate of Net Working Capital and growth rate of Inventory. All these rates were declined except Loans and Advances, Creditors and Current Liabilities and Provisions. It was found that the growth rates were not significant up to 10% probability level except Inventory (1% level), Debtors (5% level), Current Assets (1% level) and Net Working Capital (1% level). In all cases parabolic equations were fitted except Loans and Advances and Current Liabilities and Provisions and found encouraging trends except of Creditors (discouraging trend). All these trends were significant at 1% probability level except Debtors (5% level) and Current Assets (5% level) but the trend of Cash, Creditors were not significant up to 10% probability level.

## **4.12. Biofil Chemicals and Pharmaceutical Ltd.**

### **4.12.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.12, it is found that the nominal amount of Inventory of Biofil Chemicals and Pharmaceuticals Ltd. had decreased at an annual rate of 70.6% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Biofil Chemicals and Pharmaceuticals Ltd. had been increasing at increasing rates. This encouraging trend was also significant at 5% probability level. This implies a encouraging trend in the inter temporal growth of total inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.32, it is found that real amount of Inventory of Biofil Chemicals and Pharmaceuticals Ltd.had grown at the annual rate of -73.80% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Biofil Chemicals and Pharmaceuticals Ltd. was significant at 1% probability level.

### **4.12.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.12, it is found that the nominal amount of Biofil Chemicals and Pharmaceuticals Ltd. has decreased at an annual rate of 77.7% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of Biofil Chemicals and Pharmaceuticals Ltd.had been increasing at increasing rates. This encouraging trend was also significant at 1% probability level. This implies an encouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been

fitted. From the estimated parameters presented in Table 4.32, it is found that real amount of debtors of Biofil Chemicals and Pharmaceuticals Ltd. has grown at the annual rate of - 80.7% and at the time of 1999-2000 to 2013- 2014. The decreasing rate of real amount of Debtors of Biofil Chemicals and Pharmaceuticals Ltd.was significant at 1% probability level.

#### **4.12.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.12, it is found that the nominal amount of cash of Biofil Chemicals and Pharmaceuticals Ltd. had decreased at an annual rate of 35.4% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant. It is also found that the growth rate of Cash of Biofil Chemicals and Pharmaceuticals Ltd.had been increasing at increasing rates. This implies a encouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.32, it is found that real amount of cash of Biofil Chemicals and Pharmaceuticals Ltd. had grown at the annual rate of - 38.4% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Biofil Chemicals and Pharmaceuticals Ltd.was insignificant.

#### **4.12.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.12, it is found that the nominal amount of Loans and Advances of Biofil Chemicals and Pharmaceuticals Ltd.had decreased at an annual rate of 50.5% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 10% probability level. It is also found that the growth rate of Loans and Advance of Biofil Chemicals and Pharmaceuticals Ltd.had been increasing at increasing rates. This implies a encouraging trend in the inter temporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.32, it is found that real amount of Loans And Advances of Biofil Chemicals and Pharmaceuticals Ltd. had grown at the annual rate of -53.5% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 10% probability level.

#### **4.12.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.12, it is found that the nominal amount of Creditors of Biofil Chemicals and Pharmaceuticals Ltd.had increased at an annual rate of 13.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Creditors of Biofil Chemicals and Pharmaceuticals Ltd. had been increasing at decreasing rates. This implies a discouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.32, it is found that real amount of creditors of Biofil Chemicals and Pharmaceuticals Ltd.had grown at the annual rate of 4.80% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Biofil Chemicals and Pharmaceuticals Ltd.was significant at 5% probability level.

#### **4.12.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.12, it is found that the nominal amount of Current Liabilities and Provisions of Biofil Chemicals and Pharmaceuticals Ltd.had increased at an annual rate of .064% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. This

implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.32, it is found that real amount of Current Liabilities and Provisions Biofil Chemicals and Pharmaceuticals Ltd.had grown at the annual rate of 4.05% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions of Biofil Chemicals and Pharmaceuticals Ltd.was significant at 5% probability level.

#### **4.12.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.12, it is found that the nominal amount of current assets of Biofil Chemicals and Pharmaceuticals Ltd.had decreased at an annual rate of 62.10% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Biofil Chemicals and Pharmaceuticals Ltd.had been increasing at encouraging rates. This encouraging rate was also significant at 1%probability level. This implies an encouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.32, it is found that real amount of current assets of Biofil Chemicals and Pharmaceuticals Ltd.had grown at the annual rate of -65.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Biofil Chemicals and Pharmaceuticals Ltd. was significant at 1% probability level.



#### **4.12.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.12, it is found that the nominal amount of Net Working Capital of Biofil Chemicals and Pharmaceuticals Ltd.had decreased at an annual rate of 90.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of Current Assets of Biofil Chemicals and Pharmaceuticals Ltd.had been increasing at increasing rates. This implies a encouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.32, it is found that real amount of Net Working Capital of Biofil Chemicals and Pharmaceuticals Ltd.had declined at the annual rate of -93% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was significant at 5% probability level.

From Table – 4.12 and Table-4.32, it was found that the regression equation of different component of working capital (except Cash and Loans and Advances ) were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Creditors were highest followed by the growth rate of Current Liabilities and Provision, growth rate of cash, growth rate of Loans and Advances, growth rate of Current Assets, growth rate of Inventory, growth rate of Debtors and growth rate of Net Working Capital. all these growth rates were significant at 1% probability level except Loans and Advances (10% level), Net Working Capital (5% level) and cash not significant up to 10% probability level. All these cases, parabolic equations were fitted except of Current Liabilities and Provisions and was found encouraging trend except Creditors (discouraging trend). All these trends were significant except the trend of Loans and Advances and Creditors were not significant up to 10% probability level. The trends of Inventory, Cash and Net

Working Capital were significant at 5% probability level and the trends of Debtors, and Current Assets were significant at 1% probability level.

#### **4.13. Ambalal Sarabhai Enterprises**

##### **4.13.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.13, it is found that the nominal amount of Inventory of Ambalal Sarabhai Enterprises had decreased at an annual rate of 30.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.33, it is found that real amount of Inventory of Ambalal Sarabhai Enterprises had grown at the annual rate of -33.2% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Ambalal Sarabhai Enterprises was significant at 1% probability level.

##### **4.13.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.13, it is found that the nominal amount of Ambalal Sarabhai Enterprises has increased at an annual rate of 19.9% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 5% probability level. It is also found that the growth rate of Debtors of Ambalal Sarabhai Enterprises had been increasing at diminishing rates. This discouraging trend was also significant at 1% probability level. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.33, it is found that real amount of debtors of Ambalal Sarabhai Enterprises has grown at the annual rate of 16.9% and at

the time of 1999-2000 to 2013- 2014. The inclined rate of real amount of Debtors of Ambalal Sarabhai Enterprises was significant at 1% probability level.

#### **4.13.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.13, it is found that the nominal amount of cash of Ambalal Sarabhai Enterprises had decreased at an annual rate of 11.60% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.33, it is found that real amount of cash of Ambalal Sarabhai Enterprises had grown at the annual rate of -13.9% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Ambalal Sarabhai Enterprises was significant at 1% probability level.

#### **4.13.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.13, it is found that the nominal amount of Loans and Advances of Ambalal Sarabhai Enterprises had decreased at an annual rate of 7.88% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.33, it is found that real amount of Loans And Advances of Ambalal Sarabhai Enterprises had grown at the annual rate of -10.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was also significant at 1% probability level.

#### **4.13.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.13, it is found that the nominal amount of Creditors of Ambalal Sarabhai Enterprises had increased at an annual rate of 10.1% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 10% probability level. It is also found that the growth rate of Creditors of Ambalal Sarabhai Enterprises had been increasing at decreasing rates and this decreasing rate was also significant at 10% probability level. This implies a discouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.33, it is found that real amount of creditors of Ambalal Sarabhai Enterprises had grown at the annual rate of -0.064% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Ambalal Sarabhai Enterprises was significant at 1% probability level.

#### **4.13.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.13, it is found that the nominal amount of Current Liabilities and Provisions of Ambalal Sarabhai Enterprises had increased at an annual rate of 17% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions of Ambalal Sarabhai Enterprises had been increasing at discouraging rates. This discouraging rate was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.33, it is found that real amount of Current Liabilities and Provisions Ambalal Sarabhai

Enterprises had grown at the annual rate of 14% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Current Liabilities and Provisions of Ambalal Sarabhai Enterprises was significant at 1% probability level.

#### **4.13.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.13, it is found that the nominal amount of current assets of Ambalal Sarabhai Enterprises had increased at an annual rate of 13.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 10% probability level. It is also found that the growth rate of Current Assets of Ambalal Sarabhai Enterprises had been increasing at discouraging rates. This discouraging rate was also significant at 1% probability level. This implies an discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.33, it is found that real amount of current assets of Ambalal Sarabhai Enterprises had grown at the annual rate of -14.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Ambalal Sarabhai Enterprises was significant at 1% probability level.

#### **4.13.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.13, it is found that the nominal amount of Net Working Capital of Ambalal Sarabhai Enterprises had decreased at an annual rate of 17.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.33, it is

found that real amount of Net Working Capital of Ambalal Sarabhai Enterprises had declined at the annual rate of -35.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was significant at 5% probability level.

From Table – 4.13 and Table-4.33, it was found that the regression equation of different component of working capital EXCEPT Cash and Loans and Advances, were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Debtors were highest followed by the growth rate of Current Liabilities and Provision, growth rate of Current Assets, growth rate of Creditors, growth rate of Loans and Advances, growth rate of cash, growth rate of Net Working Capital and growth rate of Inventory. All these growth rates were significant at 1% probability level except Debtors (5% level), Cash (5% level), Creditors (10% level) and Current Assets (10% level). In some cases parabolic equations were fitted and found discouraging trend of Debtors, Creditors, Current Liabilities and Current Assets. All these discouraging trends were significant at 1% probability level except creditors at 10% probability level.

#### **4.14. Parenteral Drugs (India) Ltd**

##### **4.14.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.14, it is found that the nominal amount of Inventory of Parenteral Drugs (India) Ltd had increased at an annual rate of 21.5% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of Inventory of Parenteral Drugs (India) Ltd had been increasing at diminishing rates. This implies an discouraging trend in inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.34, it is found that real amount of Inventory of Parenteral Drugs (India) Ltd had grown at the annual rate of

18.4% and at the time of 1999-2000 to 2013-2014 but this growth rate of real amount of Inventory of Parenteral Drugs (India) Ltd was insignificant.

#### **4.14.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.14, it is found that the nominal amount of Parenteral Drugs (India) Ltd had increased at an annual rate of 11.4% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.34, it is found that real amount of debtors of Parenteral Drugs (India) Ltd has grown at the annual rate of 9.04% and at the time of 1999-2000 to 2013- 2014. The inclined rate of real amount of Debtors of Parenteral Drugs (India) Ltd was significant at 1% probability level.

#### **4.14.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.14, it is found that the nominal amount of cash of Parenteral Drugs (India) Ltd had increased at an annual rate of 23.80% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.34, it is found that real amount of cash of Parenteral Drugs (India) Ltd had grown at the annual rate of 21.5% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Parenteral Drugs (India) Ltd was significant at 1% probability level.

#### **4.14.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.14, it is found that the nominal amount of Loans and Advances of Parenteral Drugs (India) Ltd had increased at an annual rate of 24.70% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of Loans and Advances of Parenteral Drugs (India) Ltd had been increasing at decreasing rates but this decreasing rate was insignificant. This implies a discouraging trend in inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.34, it is found that real amount of Loans And Advances of Parenteral Drugs (India) Ltd had grown at the annual rate of 14.8% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 1% probability level.

#### **4.14.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.14, it is found that the nominal amount of Creditors of Parenteral Drugs (India) Ltd had increased at an annual rate of 16.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.34, it is found that real amount of creditors of Parenteral Drugs (India) Ltd had grown at the annual rate of 14.3% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Parenteral Drugs (India) Ltd was significant at 1% probability level.



#### **4.14.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.14, it is found that the nominal amount of Current Liabilities and Provisions of Parenteral Drugs (India) Ltd had increased at an annual rate of 16.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.34, it is found that real amount of Current Liabilities and Provisions Parenteral Drugs (India) Ltd had grown at the annual rate of 14.3% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Current Liabilities and Provisions of Parenteral Drugs (India) Ltd was significant at 1% probability level.

#### **4.14.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.14, it is found that the nominal amount of current assets of Parenteral Drugs (India) Ltd had increased at an annual rate of 16.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.34, it is found that real amount of current assets of Parenteral Drugs (India) Ltd had grown at the annual rate of 9.99% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Parenteral Drugs (India) Ltd was significant at 1% probability level.

#### **4.14.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.14, it is found that the nominal amount of Net Working Capital of Parenteral Drugs (India) Ltd had decreased at an annual rate of 10.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.34, it is found that real amount of Net Working Capital of Parenteral Drugs (India) Ltd had increased at the annual rate of 7.88% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was significant at 1% probability level.

From Table – 4.14 and Table-4.34, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Loans and Advances were highest followed by the growth rate of cash, growth rate of Inventory, growth rate of Current Liabilities and Provision, growth rate of Creditors, growth rate of Current Assets, growth rate of Debtors and growth rate of Net Working Capital. All these growth rates were significant at 1% probability level except Inventory (5% level) and Loans and Advances (5% level). In Inventory and Loans and Advances, parabolic equations were fitted and found discouraging trend. These trends were not significant up to 10% of probability level.

#### **4.15. Sequent Scientific Ltd.**

##### **4.15.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.15, it is found that the nominal amount of Inventory of Sequent Scientific Ltd. had increased at an annual rate of 99.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at

1% probability level. It is also found that the growth rate of Inventory of Sequent Scientific Ltd. had been increasing at diminishing rates. This discouraging trend was also significant at 10% probability level. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.35, it is found that real amount of Inventory of Sequent Scientific Ltd. had grown at the annual rate of 95.3% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Sequent Scientific Ltd. was significant at 1% probability level.

#### **4.15.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.15, it is found that the nominal amount of Sequent Scientific Ltd. has increased at an annual rate of 59.3% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 5% probability level. It is also found that the growth rate of Debtors of Sequent Scientific Ltd. had been increasing at diminishing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.35, it is found that real amount of debtors of Sequent Scientific Ltd. has grown at the annual rate of 55.3% and at the time of 1999-2000 to 2013- 2014. The inclined rate of real amount of Debtors of Sequent Scientific Ltd. was significant at 5% probability level.

#### **4.15.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.15, it is found that the nominal amount of cash of Sequent Scientific Ltd. had increased at an annual rate of 28.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.35, it is found that real amount of cash of Sequent Scientific Ltd. had grown at the annual rate of 28.9% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Sequent Scientific Ltd. was significant at 1% probability level.

#### **4.15.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.15, it is found that the nominal amount of Loans and Advances of Sequent Scientific Ltd. had decreased at an annual rate of 23.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.35, it is found that real amount of Loans And Advances of Sequent Scientific Ltd. had grown at the annual rate of 23.7% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 1% probability level.

#### **4.15.5. Creditors Analysis:**

From the estimated values of parameters presented in Table-4.15, it is found that the nominal amount of Creditors of Sequent Scientific Ltd. had increased at an annual rate of 149.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at

1% probability level. It is also found that the growth rate of Creditors of Sequent Scientific Ltd. had been increasing at decreasing rates and this decreasing rate was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.35, it is found that real amount of creditors of Sequent Scientific Ltd. had grown at the annual rate of 149.9% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Sequent Scientific Ltd. was significant at 1% probability level.

#### **4.15.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.15, it is found that the nominal amount of Current Liabilities and Provisions of Sequent Scientific Ltd. had increased at an annual rate of 159.5% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions of Sequent Scientific Ltd. had been increasing at discouraging rates. This discouraging rate was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.35, it is found that real amount of Current Liabilities and Provisions Sequent Scientific Ltd. had grown at the annual rate of 159.5% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions of Sequent Scientific Ltd. was significant at 1% probability level.

#### **4.15.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.15, it is found that the nominal amount of current assets of Sequent Scientific Ltd. had increased at an annual rate of 26.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of Current Assets of Sequent Scientific Ltd. had been increasing at encouraging rates. This encouraging rate was insignificant. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.35, it is found that real amount of current assets of Sequent Scientific Ltd. had grown at the annual rate of 31.5% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Sequent Scientific Ltd. was significant at 1% probability level.

#### **4.15.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.15, it is found that the nominal amount of Net Working Capital of Sequent Scientific Ltd. had decreased at an annual rate of 24% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.35, it is found that real amount of Net Working Capital of Sequent Scientific Ltd. had declined at the annual rate of 21.6% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was significant at 1% probability level.

From Table – 4.15 and Table-4.35, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Current Liabilities and Provision were highest followed by the growth rate of Creditors, growth rate of Inventory, growth rate of Debtors, growth rate of cash, growth rate of Current Assets, growth rate of Net Working Capital, and growth rate of Loans and Advances. All these growth rates were significant at 1% probability level except Debtors (5% level) and Current Assets (5% level). In some cases, parabolic equations were fitted and found discouraging trends except Current Assets (encouraging trends). The discouraging trends of Creditors and Current Liabilities were significant at 1% probability level and the discouraging trend of Inventory was significant at 10% probability level. However, the discouraging trends of Debtors and Current Assets were not significant up to 10 % probability level.

#### **4.16. Zenotech Laboratories**

##### **4.16.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.16, it is found that the nominal amount of Inventory of Zenotech Laboratories had increased at an annual rate of 71.4% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant. It is also found that the growth rate of Inventory of Zenotech Laboratories had been increasing at decreasing rates. This discouraging trend was also insignificant.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.36, it is found that real amount of Inventory of Zenotech Laboratories had grown at the annual rate of 67.5% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Zenotech Laboratories was insignificant .

#### **4.16.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.16, it is found that the nominal amount of Zenotech Laboratories has increased at an annual rate of 53.8% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 5% probability level. It is also found that the growth rate of Debtors of Zenotech Laboratories had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.36, it is found that real amount of debtors of Zenotech Laboratories had grown at the annual rate of 50.8% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of Debtors of Zenotech Laboratories was significant at 5% probability level.

#### **4.16.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.16, it is found that the nominal amount of cash of Zenotech Laboratories had increased at an annual rate of 209.6% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level. It is also found that the growth rate of Cash of Zenotech Laboratories had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.36, it is found that real amount of cash of Zenotech Laboratories had grown at the annual rate of 205.9% and at the time



of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Zenotech Laboratories was significant at 5% probability level.

#### **4.16.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.16, it is found that the nominal amount of Loans and Advances of Zenotech Laboratories had increased at an annual rate of 165.40% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Loans and Advance of Zenotech Laboratories had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.36, it is found that real amount of Loans And Advances of Zenotech Laboratories had grown at the annual rate of 162.40% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 1% probability level.

#### **4.16.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.10, it is found that the nominal amount of Creditors of Zenotech Laboratories had increased at an annual rate of 213.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Creditors of Zenotech Laboratories had been increasing at decreasing rates and this decreasing rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines

have been fitted. From the estimated parameters presented in Table 4.36, it is found that real amount of creditors of Zenotech Laboratories had grown at the annual rate of 209.7% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Zenotech Laboratories was significant at 1% probability level.

#### **4.16.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.16, it is found that the nominal amount of Current Liabilities and Provisions of Zenotech Laboratories had increased at an annual rate of 217.5% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Zenotech Laboratories had been increasing at diminishing rates. This diminishing rate was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.36, it is found that real amount of Current Liabilities and Provisions of Zenotech Laboratories had grown at the annual rate of 213.8% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions of Zenotech Laboratories was significant at 1% probability level.

#### **4.16.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.16, it is found that the nominal amount of current assets of Zenotech Laboratories had increased at an annual rate of 77.6% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Zenotech Laboratories had been increasing at diminishing rates. This diminishing rate was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.36, it is found that real amount of current assets of Zenotech Laboratories had grown at the annual rate of 74.5% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Zenotech Laboratories was significant at 1% probability level.

#### **4.16.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.16, it is found that the nominal amount of Net Working Capital of Zenotech Laboratories had increased at an annual rate of 80.3% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant. It is also found that the growth rate of Current Assets of Zenotech Laboratories had been increasing at diminishing rates. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.36, it is found that real amount of Net Working Capital of Zenotech Laboratories had declined at the annual rate of 77.3% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was also insignificant.

From Table – 4.16 and Table-4.36, it was found that the regression equation of different component of working capital except Inventory and Net Working Capital, were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Current Liabilities and Provision were highest followed by the growth rate of Creditors, growth rate of cash, growth rate of Loans and Advances, growth rate of Net Working Capital, growth rate of Current Assets, growth rate of Inventory and growth rate of Debtors.all these growth rates

were significant were significant at 1% probability level except Debtors (5% level), Cash (5% level). The growth rates of Inventory and Net working Capital were not significant up to 10% probability level. In all cases, the parabolic equations were fitted and found discouraging trend. The discouraging trends of Inventory and Net Working Capital were not significant up to 10% probability level. All these discouraging trends were significant at 1% probability level except Cash (5% level).

#### **4.17. Marksans Pharma Ltd.**

##### **4.17.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.17, it is found that the nominal amount of Inventory of Marksans Pharma Ltd. had increased at an annual rate of 64.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Marksans Pharma Ltd. had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies an discouraging trend in the inter temporal growth of total Inventory

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.37, it is found that real amount of Inventory of Marksans Pharma Ltd. had grown at the annual rate of 61.1% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Marksans Pharma Ltd. was significant at 1% probability level. .

##### **4.17.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.17, it is found that the nominal amount of Marksans Pharma Ltd. has increased at an annual rate of 34.10% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of Marksans Pharma Ltd. had been increasing at decreasing rates. This discouraging trend was also significant

at 1% probability level. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.37, it is found that real amount of debtors of Marksans Pharma Ltd. had grown at the annual rate of 31% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of Debtors of Marksans Pharma Ltd. was significant at 1% probability level.

#### **4.17.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.17, it is found that the nominal amount of cash of Marksans Pharma Ltd. had increased at an annual rate of 117.10% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Cash of Marksans Pharma Ltd. had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.37, it is found that real amount of cash of Marksans Pharma Ltd. had grown at the annual rate of 114% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Marksans Pharma Ltd. was significant at 5% probability level.

#### **4.17.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.17, it is found that the nominal amount of Loans and Advances of Marksans Pharma Ltd. had increased at an annual rate of 56.6% during the period 1999-2000 to 2013-2014 and this growth rate was

significant at 1% probability level. It is also found that the growth rate of Loans and Advance of Marksans Pharma Ltd. had been increasing at decreasing rates. This discouraging trend was also significant at 10% probability level. This implies a discouraging trend in the inter temporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.37, it is found that real amount of Loans and Advances of Marksans Pharma Ltd. had grown at the annual rate of 53.5% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 5% probability level.

#### **4.17.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.17, it is found that the nominal amount of Creditors of Marksans Pharma Ltd. had increased at an annual rate of 21.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level..

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.37, it is found that real amount of creditors of Marksans Pharma Ltd. had grown at the annual rate of 19.5% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Marksans Pharma Ltd. was significant at 1% probability level.

#### **4.17.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.17, it is found that the nominal amount of Current Liabilities and Provisions of Marksans Pharma Ltd. had increased at an annual rate of 22.10% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.37, it is found that real amount of Current Liabilities and Provisions of Marksans Pharma Ltd. had grown at the annual rate of 19.8% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Current Liabilities and Provisions of Marksans Pharma Ltd. was significant at 1% probability level.

#### **4.17.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.17, it is found that the nominal amount of current assets of Marksans Pharma Ltd. had increased at an annual rate of 60.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Marksans Pharma Ltd. had been increasing at diminishing rates. This diminishing rate was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.37, it is found that real amount of current assets of Marksans Pharma Ltd. had grown at the annual rate of 57.8% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Marksans Pharma Ltd. was significant at 1% probability level.

#### **4.17.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.17, it is found that the nominal amount of Net Working Capital of Marksans Pharma Ltd. had increased at an annual rate of 78.40% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level . It is also found that the growth rate of Current Assets of Marksans Pharma Ltd. had been increasing at diminishing rates. This

discouraging trend was also significant at 5% probability level. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.37, it is found that real amount of Net Working Capital of Marksans Pharma Ltd. had grown at the annual rate of 75.40% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was also significant at 5% probability level.

From Table – 4.17 and Table-4.37, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of cash were highest followed by the growth rate of Net Working Capital, growth rate of Inventory, growth rate of Current Assets, growth rate of Loans and Advances, growth rate of Debtors, growth rate of Current Liabilities and Provision and growth rate of Creditors. All these growth rates were significant at 1% probability level. In all cases, the parabolic equations were fitted except in Creditors and Current Liabilities and Provisions and found discouraging trends. These discouraging trends were significant of Inventory (1% Level), Debtors(10% level), Cash (5% level), Loans and Advances(10% level), Current assets(1% Level) and Net Working Capital(5% level).

#### **4.18. Wanbury Ltd.**

##### **4.18.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.18, it is found that the nominal amount of Inventory of Wanbury Ltd. had increased at an annual rate of 39.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Wanbury Ltd. had been increasing at decreasing rates. This discouraging trend was also significant at 5%



probability level. This implies an discouraging trend in the inter temporal growth of total Inventory

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.38, it is found that real amount of Inventory of Wanbury Ltd. had grown at the annual rate of 36.2% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Wanbury Ltd. was significant at 1% probability level. .

#### **4.18.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.18, it is found that the nominal amount of Wanbury Ltd. has increased at an annual rate of 67.7% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 1% probability level. It is also found that the growth rate of Debtors of Wanbury Ltd. had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.38, it is found that real amount of debtors of Wanbury Ltd. had grown at the annual rate of 64.6% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of Debtors of Wanbury Ltd. was significant at 1% probability level.

#### **4.18.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.18, it is found that the nominal amount of cash of Wanbury Ltd. had increased at an annual rate of 138.7% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Cash of Wanbury Ltd. had been

increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.38, it is found that real amount of cash of Wanbury Ltd. had grown at the annual rate of 135.60% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Wanbury Ltd. was significant at 1% probability level.

#### **4.18.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.18, it is found that the nominal amount of Loans and Advances of Wanbury Ltd. had increased at an annual rate of 88.9% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Loans and Advance of Wanbury Ltd. had been increasing at decreasing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Loans and Advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.38, it is found that real amount of Loans and Advances of Wanbury Ltd. had grown at the annual rate of 85.8% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 1% probability level.

#### **4.18.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.18, it is found that the nominal amount of Creditors of Wanbury Ltd. had increased at an annual rate of 67.2%

during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level..

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.38, it is found that real amount of creditors of Wanbury Ltd. had grown at the annual rate of 64.1% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Wanbury Ltd. was significant at 1% probability level.

#### **4.18.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.18, it is found that the nominal amount of Current Liabilities and Provisions of Wanbury Ltd. had increased at an annual rate of 85.8% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions of Wanbury Ltd. had been increasing at diminishing rates. This diminishing rate was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.38, it is found that real amount of Current Liabilities and Provisions of Wanbury Ltd. had grown at the annual rate of 82.7% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions of Wanbury Ltd. was significant at 1% probability level.

#### **4.18.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.18, it is found that the nominal amount of current assets of Wanbury Ltd. had increased at an annual rate of

71.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Wanbury Ltd. had been increasing at diminishing rates. This diminishing rate was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.38, it is found that real amount of current assets of Wanbury Ltd. had grown at the annual rate of 68.2% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Wanbury Ltd. was significant at 1% probability level.

#### **4.18.8. Net Working capital analysis:**

From the estimated values of parameters presented in Table.4.18, it is found that the nominal amount of Net Working Capital of Wanbury Ltd. had increased at an annual rate of 92.6% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Wanbury Ltd. had been increasing at diminishing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.38, it is found that real amount of Net Working Capital of Wanbury Ltd. had grown at the annual rate of 89.5% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was also significant at 1% probability level.

From Table – 4.18 and Table-4.38, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were

high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of cash were highest followed by the growth rate of Net Working Capital, growth rate of Loans and Advances, growth rate of Current Liabilities and Provision, , growth rate of Current Assets, growth rate of Debtors, growth rate of Creditors and growth rate of Inventory. All these growth rates were significant at 1% probability level. In all the cases, the parabolic equations were fitted and found discouraging trends. The discouraging trend of Creditors were not significant up to 10% probability level. All other discouraging trends were significant at 1% probability level except of Inventory (5% level).

#### **4.19. Morepen Labs**

##### **4.19.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.19, it is found that the nominal amount of Inventory of Morepen Labs had increased at an annual rate of -8.48% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.39, it is found that real amount of Inventory of Morepen Labs had grown at the annual rate of -10.8% and at the time of 1999-2000 to 2013-2014 and this growth rate of real amount of Inventory of Morepen Labs was significant at 1% probability level. .

##### **4.19.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.19, it is found that the nominal amount of Morepen Labs has decreased at an annual rate of 12.9% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 5% probability level.

To separate out the influence of inflation on the growth rate of debtors amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.39, it is found that real amount of debtors of Morepen Labs had declined at the annual rate of 15.3% and at the time of 1999-2000 to 2013- 2014. The declined rate of real amount of Debtors of Morepen Labs was significant at 1% probability level.

#### **4.19.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.19, it is found that the nominal amount of cash of Morepen Labs had decreased at an annual rate of 29.5% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level.

To separate out the influence of inflation on the growth rate of cash amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.39, it is found that real amount of cash of Morepen Labs had declined at the annual rate of 31.8% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of cash of Morepen Labs was significant at 1% probability level.

#### **4.19.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.19, it is found that the nominal amount of Loans and Advances of Morepen Labs had decreased at an annual rate of 18.4% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 5% probability level.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table

4.39 it is found that real amount of Loans and Advances of Morepen Labs had declined at the annual rate of 20.7% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount was also significant at 1% probability level.

#### **4.19.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.19, it is found that the nominal amount of Creditors of Morepen Labs had increased at an annual rate of 3.72% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.39, it is found that real amount of creditors of Morepen Labs had grown at the annual rate of 1.37% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Morepen Labs was insignificant.

#### **4.19.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.19, it is found that the nominal amount of Current Liabilities and Provisions of Morepen Labs had increased at an annual rate of 1.84% during the period 1999-2000 to 2013-2014 and this growth rate was insignificant.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.39, it is found that real amount of Current Liabilities and Provisions of Morepen Labs had grown at the annual rate of .05% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions of Morepen Labs was insignificant.

#### **4.19.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.19, it is found that the nominal amount of current assets of Morepen Labs had decreased at an annual rate of 15.3% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level..

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.39, it is found that real amount of current assets of Morepen Labs had declined at the annual rate of 17.7% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Morepen Labs was significant at 1% probability level.

#### **4.19.8. Net Working Capital Analysis:**

From the estimated values of parameters presented in Table.4.19, it is found that the nominal amount of Net Working Capital of Morepen Labs had increased at an annual rate of 42.6% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 10% probability level. It is also found that the growth rate of Current Assets of Morepen Labs had been increasing at diminishing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.39, it is found that real amount of Net Working Capital of Morepen Labs had grown at the annual rate of 39.7% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount was also significant at 10% probability level.



From Table – 4.19 and Table-4.39, it was found that the regression equation of different component of working capital except were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and real amount of Net Working Capital were highest followed by the growth rate of Creditors, growth rate of Current Liabilities and Provision, growth rate of Inventory, growth rate of Debtors, growth rate of Current Assets, growth rate of Loans and Advances and growth rate of cash. The growth rates of Creditors and Current liabilities were not significant up to 10% probability level. All other growth rates were significant at 5% probability level except Current assets (1% level) and Net Working Capital (10% level). Parabolic equation was fitted in Net working Capital and found discouraging trend. This discouraging trend was significant at 1% probability level.

#### **4.20. Hiran Orgochem Ltd.**

##### **4.20.1. Inventory analysis**

From the estimated values of parameters presented in Table.4.20, it is found that the nominal amount of Inventory of Hiran Orgochem Ltd. had increased at an annual rate of 96.6% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Inventory of Hiran Orgochem Ltd. had been increasing at diminishing rates. This discouraging trend was also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Inventory.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.40, it is found that real amount of Inventory of Hiran Orgochem Ltd. had grown at the annual rate of 93.5% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Inventory of Hiran Orgochem Ltd. was significant at 1% probability level.

#### **4.20.2. Debtors analysis:**

From the estimated values of parameters presented in Table-4.20, it is found that the nominal amount of Debtors of Hiran Orgochem Ltd. has increased at an annual rate of 36.10% during the period 1999-2000 to 2013-2014 and this growth rate is significant at 5% probability level. It is also found that the growth rate of Debtors of Hiran Orgochem Ltd. had been increasing at discouraging rates. This discouraging trend was also significant at 5% probability level. This implies an discouraging trend in the inter temporal growth of total debtors.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the debtors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.40, it is found that real amount of debtors of Hiran Orgochem Ltd. has grown at the annual rate of 33.10% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Debtors of Hiran Orgochem Ltd. was significant at 5% probability level.

#### **4.20.3 Cash analysis:**

From the estimated values of parameters presented in Table-4.20, it is found that the nominal amount of cash of Hiran Orgochem Ltd. had increased at an annual rate of 85.6% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 10% probability level. It is also found that the growth rate of cash of Hiran Orgochem Ltd. had been increasing at diminishing rates. This discouraging trend was also significant at 10% probability level. This implies a discouraging trend in the inter temporal growth of total cash.

To separate out the influence of inflation on the growth rate of deposit amount necessary adjustment in the nominal values of the cash amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.40, it is found that real amount of cash of Hiran Orgochem Ltd. had grown at the annual rate of 82.5% and at the time of

1999-2000 to 2013- 2014. The growth rate of real amount of cash of Hiran Orgochem Ltd. was significant at 10% probability level.

#### **4.20.4. Loans and Advance Analysis:**

From the estimated values of parameters presented in Table-4.20, it is found that the nominal amount of Loans And Advances of Hiran Orgochem Ltd. had increased at an annual rate of 71.2% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Loans And Advances of Hiran Orgochem Ltd. had been increasing at diminishing rates and this diminishing rate was significant at 10% probability level. This implies a discouraging trend in the inter temporal growth of total loans and advances.

To separate out the influence of inflation on the growth rate of Loans And Advance amount necessary adjustment in the nominal values of the Loans And Advances amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.40, it is found that real amount of Loans And Advances of Hiran Orgochem Ltd. had grown at the annual rate of 71.2% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Loans and Advances of Hiran Orgochem Ltd. was significant at 1% probability level.

#### **4.20.5. Creditors analysis:**

From the estimated values of parameters presented in Table-4.20, it is found that the nominal amount of Creditors of Hiran Orgochem Ltd. had increased at an annual rate of 46% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of cash of Hiran Orgochem Ltd. had been increasing at decreasing rates and this decreasing rate was significant at 1% probability level. This implies an encouraging trend in the inter temporal growth of total creditors.

To separate out the influence of inflation on the growth rate of Creditors amount necessary adjustment in the nominal values of the creditors amount have been done by

deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.40, it is found that real amount of creditors of Hiran Orgochem Ltd. had grown at the annual rate of 43% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Creditors of Hiran Orgochem Ltd. was significant at 1% probability level.

#### **4.20.6. Current Liabilities and Provisions Analysis:**

From the estimated values of parameters presented in Table-4.20, it is found that the nominal amount of Current Liabilities and Provisions Analysis of Hiran Orgochem Ltd. had increased at an annual rate of 49.40% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Liabilities and Provisions Analysis of Hiran Orgochem Ltd. had been increasing at diminishing rates and this diminishing rate was significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total Current Liabilities and Provisions.

To separate out the influence of inflation on the growth rate of Current Liabilities and Provisions amount necessary adjustment in the nominal values of the creditors amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.40, it is found that real amount of Current Liabilities and Provisions Analysis of Hiran Orgochem Ltd. had grown at the annual rate of 46.3% and at the time of 1999-2000 to 2013- 2014. The growth rate of real amount of Current Liabilities and Provisions Analysis of Hiran Orgochem Ltd. was significant at 1% Probability level.

#### **4.20.7. Current Assets analysis**

From the estimated values of parameters presented in Table.4.20, it is found that the nominal amount of current assets of Hiran Orgochem Ltd. had increased at an annual rate of 0.689% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of Current Assets of Hiran Orgochem Ltd. had been increasing at diminishing rates. This discouraging rate was also

significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total current assets.

To separate out the influence of inflation on the growth rate of inventory amount necessary adjustment in the nominal values of the current assets amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.40, it is found that real amount of current assets of Hiran Orgochem Ltd. had grown at the annual rate of 65.8% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of current assets of Hiran Orgochem Ltd. was significant at 1% probability level.

#### **4.20.8. Net Working capital analysis**

From the estimated values of parameters presented in Table.4.20, it is found that the nominal amount of Net Working Capital of Hiran Orgochem Ltd. had increased at an annual rate of .838% during the period 1999-2000 to 2013-2014 and this growth rate was significant at 1% probability level. It is also found that the growth rate of net working capital of Hiran Orgochem Ltd. had been increasing at decreasing rates. The discouraging trend is also significant at 1% probability level. This implies a discouraging trend in the inter temporal growth of total net working capital.

To separate out the influence of inflation on the growth rate of Net Working Capital amount necessary adjustment in the nominal values of the inventory amount have been done by deflating the nominal values by the wholesale price index as then the chosen trend lines have been fitted. From the estimated parameters presented in Table 4.40, it is found that real amount of Net Working Capital of Hiran Orgochem Ltd. had grown at the annual rate of 80.8% and at the time of 1999-2000 to 2013-2014. The growth rate of real amount of Net Working Capital of Hiran Orgochem Ltd. was significant at 1% probability level.

.From Table – 4.20 and Table-4.40, it was found that the regression equation of different component of working capital were best fitted with time because adjusted  $R^2$  values were high in all cases. Moreover, there was no autocorrelation problem in different items of working capital (reflected by DW values). The growth rates of both nominal amount and

real amount of Inventory were highest followed by the growth rate of cash, growth rate of Loans and Advances, growth rate of Current Liabilities and Provision, growth rate of Creditors, growth rate of Debtors, growth rate of Net Working Capital and growth rate of Current Assets. All these growth rates were significant at 1% probability level except cash balance (10% Level), Debtors (5% Level). Parabolic equations were fitted in all cases and found discouraging trends. All these discouraging trends were significant at 1% probability level except Debtors (5% level), Cash (10% level), Loans and Advances (10% level).

#### **4.21. Summary of the Chapter**

From the above analysis of the selected pharmaceutical companies the following information was obtained:

##### **Inventory:**

The regression equations of Inventory of the selected pharmaceutical companies were best fitted because adjusted R square values were very high in all the cases except in Zenotech Ltd. There was no autocorrelation problem in Inventory (reflected by DW values) of all the selected pharmaceutical companies. The growth rates of both nominal amount and real amount of Inventory was highest in Sequent Scientific Ltd. followed by Hiran Orgochem Ltd., Zenotech Laboratories Ltd. Marksans Pharma Ltd.,Lupin, Biocon Pharmaceuticals, Wanbury Ltd, Dr Reddy's Laboratories, Divis Labs, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Piramal Enterprises, Parenteral Drugs (India) Ltd., Sun Pharmaceuticals, Strides Archolabs, Morepen Labs, Ambalal Sarabhai Enterprises, Kopran, Biofil Chemicals and Pharmaceuticals Ltd. respectively. All these growth rates were significant at 1% probability level except for Biofil Chemicals and Pharmaceuticals Ltd, Kopran, Parenteral Drugs (India) Ltd., and Morepen Labs whose growth rates of Inventory were significant at 5% probability level. The growth rates of all these pharmaceutical companies were positive except the growth rate of Kopran, Biofil Chemicals and Pharmaceuticals Ltd, Morepen Labs and Ambalal Sarabhai Enterprises whose growth rates were negative.

In Inventory, the log quadratic equations were fitted in all the selected pharmaceutical companies except in Strides Archolabs and Sun Pharmaceuticals. All these growth rates were followed a discouraging trend except Kopran and Biofil Chemicals and Pharmaceuticals Ltd where it was found an encouraging trend. All these trends were significant at 1% probability level except of Lupin(5% level), Dr Reddy's Laboratories(5% level), Aurobindo Pharmaceuticals(10% level), Divis Labs(not significant up to 10% level), Sun Pharmaceuticals(not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd(5% level), Parenteral Drugs (India) Ltd. (not significant up to 10% level), Sequent Scientific Ltd. (10% level), Zenotech Laboratories Ltd. (not significant up to 10% level) and Wanbury Ltd(5% level).

### **Debtors:**

The regression equations of Debtors of the selected pharmaceutical companies were best fitted because adjusted R square values were very high in all the cases except in Kopran, Morepen Labs and Hiran Orgochem Ltd. Moreover, all these adjusted R square values were significant at 1% probability level except of Morepen Labs and Hiran Orgochem Ltd. where it was significant at 5% probability level. There was no autocorrelation problem in Inventory (reflected by DW values) of all the selected pharmaceutical companies. The growth rates of nominal amount of debtors was highest in Wanbury Ltd(67.7), followed by the growth rates of Sequent Scientific Ltd.(59.3), CIPLA(55.5), Zenotech Laboratories Ltd.(53.8), Sun Pharmaceuticals(41.3), Biocon Pharmaceuticals(39.6), Hiran Orgochem Ltd.(36.10), Marksans Pharma Ltd.(34.10), Divis Labs(32.7), Cadila Health Care Ltd.(25.3), Piramal Enterprises(24.7), Lupin(22%), Aurobindo Pharmaceuticals(21.2), Ambalal Sarabhai Enterprises(19.9), Strides Archolabs(18.7), Dr Reddy's Laboratories(18.3), Parenteral Drugs (India) Ltd.(11.4), Morepen Labs(-12.9), Kopran(-21.9), Biofil Chemicals and Pharmaceuticals Ltd.(-77.7) respectively. All these growth rates were significant at 1% probability level except the growth rates of Dr Reddy's Laboratories (5% level), Kopran (5% level), Ambalal Sarabhai Enterprises (5% level), Sequent Scientific Ltd. (5% level), Zenotech Laboratories Ltd. (5% level), Morepen Labs (5% level) and Hiran Orgochem Ltd. (5% level).

The growth rates of real amount of Debtors was highest in Wanbury Ltd(64.6%), followed by the growth rate of Sequent Scientific Ltd.(55.3%), CIPLA(52.5%), Zenotech Laboratories Ltd.(50.8%), Sun Pharmaceuticals(38.2%), Biocon Pharmaceuticals(36.5%), Hiran Orgochem Ltd.(33.10%), Marksans Pharma Ltd.(31%), Divis Labs(29.6%), Cadila Health Care Ltd.(22.2%), Piramal Enterprises(21.7%), Lupin(19.7%), Dr Reddy's Laboratories(18.5%), Aurobindo Pharmaceuticals(18%), Ambalal Sarabhai Enterprises(16.9%), Strides Archolabs(15.7%), Parenteral Drugs (India) Ltd.(9.04%), Morepen Labs(-15.3%), Kopran(-25%), Biofil Chemicals and Pharmaceuticals Ltd.(-80.7%) respectively. All these growth rates were significant at 1% probability level except the growth rates of Kopran (5% level), Ambalal Sarabhai Enterprises (5% level), Sequent Scientific Ltd. (5% level), Zenotech Laboratories Ltd. (5% level) and Hiran Orgochem Ltd. (5% level).

In most of the cases the growth rates of nominal amount and real amount of Debtors was found positive except in Morepen Labs (-15.3%), Kopran(-25%), Biofil Chemicals and Pharmaceuticals Ltd.(-80.7%) where both the growth rates of nominal amount and real amount of Debtors were found to be negative.

In Debtors, the log quadratic equations were fitted in all the selected pharmaceutical companies except in Lupin, Dr Reddy's Laboratories, Parenteral Drugs (India) Ltd. and Morepen Labs. All these growth trends of the selected pharmaceutical companies were followed a discouraging trend except the trend of Dr Reddy's Laboratories and Kopran where it was an encouraging trend. Moreover, all these trends in nominal amount of Debtors were significant at 1% probability level except the trends of Dr Reddy's Laboratories(not significant up to 10 % level), Aurobindo Pharmaceuticals(not significant up to level) Divis Labs(10% level), Strides Archolabs(5% level) Sun Pharmaceuticals(5% level) Kopran(5% level) Sequent Scientific Ltd. ( no significant up to 10% level) Marksans Pharma Ltd(10% level) Hiran Orgochem Ltd. (5% level).

### **Cash and Bank:**

The regression equations of Cash of the selected pharmaceutical companies were best fitted because adjusted R square values were very high in all the cases except in Lupin,



Dr. Reddy's Laboratories, Piramal Enterprises, Aurobindo Pharmaceuticals, Kopran, Biofil Chemicals, and Pharmaceuticals Ltd. Ambalal Sarabhai Enterprises, and Hiran Orgochem Ltd. There was no autocorrelation problem in Cash (reflected by DW values) of all the selected pharmaceutical companies during the study period. The growth rates of nominal amount of Cash was highest in Zenotech Laboratories Ltd.(209.6%), followed by Sun Pharmaceuticals(148.3%), Biocon Pharmaceuticals(142.7%), Wanbury Ltd(138.70%), Marksans Pharma Ltd.(117.10%), Hiran Orgochem Ltd.(85.60%), Aurobindo Pharmaceuticals(79.9%), Lupin(73.20%), Dr Reddy's Laboratories(71.7%), CIPLA(57.7%), Sequent Scientific Ltd.(28.9%), Parenteral Drugs (India) Ltd.(23.80%), Strides Archolabs(16.4%), Divis Labs(15.2%), Piramal Enterprises.(5.38%), Kopran(-11.10%), Ambalal Sarabhai Enterprises(-11.6%), Morepen Labs(-29.50%), Biofil Chemicals and Pharmaceuticals Ltd.(-35.40%), Cadila Health Care Ltd.(-74.5%) respectively. All these growth rates of nominal amount of Cash were significant at 1% probability level except in Lupin (10% level), Dr Reddy's Laboratories(5% level), Piramal Enterprises.( not significant up to 10% level) Aurobindo Pharmaceuticals(5% level), Cadila Health Care Ltd (5% level), Biocon Pharmaceuticals(5% level), Kopran( not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd.( not significant up to 10% level), Ambalal Sarabhai Enterprises(5% level), Zenotech Laboratories Ltd.( 5% level), Morepen Labs(5% level), Hiran Orgochem Ltd.( 10% level).

The growth rates of real amount of Cash was highest in Zenotech Laboratories Ltd.(205.9%), followed by Sun Pharmaceuticals(145.2%), Biocon Pharmaceuticals(139.7%), Wanbury Ltd(135.60%), Marksans Pharma Ltd.(114%), Hiran Orgochem Ltd.(82.5%), Aurobindo Pharmaceuticals(76.8%), Lupin(70.1%), Dr Reddy's Laboratories(68.7%), CIPLA(54.6%), Sequent Scientific Ltd.(28.9%), Parenteral Drugs (India) Ltd.(21.50%), Strides Archolabs(14.10%), Divis Labs(12.9%), Ambalal Sarabhai Enterprises(-13.9%), Kopran(-14.10%), Morepen Labs(-31.80%), Piramal Enterprises.(-33.10%), Biofil Chemicals and Pharmaceuticals Ltd.(-38.40%), Cadila Health Care Ltd.(-77.60%). All these growth rates of real amount of Cash were significant at 1% probability level except in Lupin (10% level), Dr Reddy's Laboratories(5% level), Piramal Enterprises.( not significant up to 10% level) Aurobindo Pharmaceuticals(5% level),

Biocon Pharmaceuticals(5% level), Kopran(10% level), Biofil Chemicals and Pharmaceuticals Ltd.( not significant up to 10% level), Zenotech Laboratories Ltd.( 5% level), Marksans Pharma Ltd.( 5% level), Hiran Orgochem Ltd.( 10% level).

In most of the cases the growth rates of nominal amount and real amount of Cash was found positive except in Ambalal Sarabhai Enterprises (-13.9%), Kopran (-14.10%), Morepen Labs(-31.80%), Piramal Enterprises.(-33.10%), Biofil Chemicals and Pharmaceuticals Ltd.(-38.40%), Cadila Health Care Ltd.(-77.60%) where both the growth rates of nominal amount and real amount of Cash were found to be negative.

In Cash, the log quadratic equations were fitted in all the selected pharmaceutical companies except in Piramal Enterprises, Divis Labs, Strides Archolabs, Ambalal Sarabhai Enterprises, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd and Morepen Labs. All these growth trends of the selected pharmaceutical companies were followed a discouraging trend except the trend of Cadila Health Care Ltd., Kopran and Biofil Chemicals and Pharmaceuticals Ltd where it was found an encouraging trend. All these encouraging and discouraging trends were significant at 1% probability level except Lupin (10% level), Dr Reddy's Laboratories(10% level), CIPLA (5% level), Aurobindo Pharmaceuticals(5% level), Biocon Pharmaceuticals(5% level), Biocon Pharmaceuticals(not significant up to 10% level), Kopran(not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd.( not significant up to 10% level), Zenotech Laboratories Ltd.( 5% level), Marksans Pharma Ltd.( 10% level), Hiran Orgochem Ltd.( 10% level).

### **Loans and Advances:**

The regression equations of Loans and Advances of the selected pharmaceutical companies were best fitted because adjusted R square values were very high in all the cases except in Kopran, Biofil Chemicals, and Pharmaceuticals Ltd and the value of adjusted R square value found to be significant at 1% probability level. There was no autocorrelation problem in Loans and Advances (reflected by DW values) of all the selected pharmaceutical companies during the study period. The growth rates of nominal amount of Loans and Advances were highest in Zenotech Laboratories Ltd.(165.40%),

followed by Wanbury Ltd(88.9%), Hiran Orgochem Ltd.(71.2%), Dr Reddy's Laboratories(57.3%), Marksans Pharma Ltd.(56.6%), Aurobindo Pharmaceuticals(46.5%), Biocon Pharmaceuticals(41.7%), Strides Archolabs(36.4%), Piramal Enterprises.(35.7%), Divis Labs(35.40%), CIPLA(33.8%), Parenteral Drugs (India) Ltd.(24.70%), Sequent Scientific Ltd.(23.7%), Sun Pharmaceuticals(23.2%), Cadila Health Care Ltd.(19.8%), Lupin(16.50%), Kopran(.043%), Ambalal Sarabhai Enterprises(-7.88%), Morepen Labs(-18.4%), Biofil Chemicals and Pharmaceuticals Ltd.(-50.5%) respectively. All these growth rates of nominal amount of Loan and Advances were significant at 1% probability level except the growth rates of Strides Archolabs (5% level), Kopran (not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd.(10 % level), Parenteral Drugs (India) Ltd.(5% level) and Morepen Labs (5% level).

The growth rates of real amount of Loans and Advances were highest in Zenotech Laboratories Ltd.(162.40%), followed by Wanbury Ltd(85.8%), Hiran Orgochem Ltd.(71.2%), Dr Reddy's Laboratories(54.2%), Marksans Pharma Ltd.(53.5%), Aurobindo Pharmaceuticals(43.4%), Biocon Pharmaceuticals(41.7%), Piramal Enterprises.(33.3%), Divis Labs(32.40%), CIPLA(30.8%), Sequent Scientific Ltd.(23.7%), Strides Archolabs(21.1%), Sun Pharmaceuticals(20.9%), Cadila Health Care Ltd.(17.5%), Parenteral Drugs (India) Ltd.(14.80%), Lupin(14.1%), Kopran(-1.92%), Ambalal Sarabhai Enterprises(-10.2%), Morepen Labs(-20.7%), Biofil Chemicals and Pharmaceuticals Ltd.(-53.5%) respectively. All these growth rates of real amount of Loan and Advances were significant at 1% probability level except the growth rates of Kopran (not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd.(10 % level), Marksans Pharma Ltd. (5% level).

In most of the cases the growth rates of nominal amount and real amount of Loans and Advances were found to be positive except in Kopran (.043%), Ambalal Sarabhai Enterprises(-7.88%), Morepen Labs(-18.4%), Biofil Chemicals and Pharmaceuticals Ltd.(-50.5%) respectively where both the growth rates of nominal amount and real amount of Loans and Advances were found to be negative.

In Loans and Advances, the log quadratic equations were fitted in all the selected pharmaceutical companies except in Lupin, Piramal Enterprises, Cadila Health Care Ltd., Sun Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd, Morepen Labs. All these growth trends of the selected pharmaceutical companies were followed a discouraging trend except the trend of Biofil Chemicals and Pharmaceuticals Ltd. where it was found an encouraging trend. All these encouraging and discouraging trends were significant at 1% probability level except CIPLA (5% level), Divis Labs (not significant up to 10% level), Strides Archolabs ( not significant up to 10% level), Biocon Pharmaceuticals(not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd.( not significant up to 10% level), Parenteral Drugs (India) Ltd. (not significant up to 10% level), Marksans Pharma Ltd.( 10% level) and Hiran Orgochem Ltd.( 10% level).

### **Creditors:**

The regression equations of Creditors of the selected pharmaceutical companies were best fitted because adjusted R square values were very high in all the cases except in Kopran, Morepen Labs and the value of adjusted R square value found to be significant at 1% probability level. There was no autocorrelation problem in Creditors (reflected by DW values) of all the selected pharmaceutical companies during the study period.

The growth rates of nominal amount of Creditors were highest in Zenotech Laboratories Ltd.(213.40%), followed by Sequent Scientific Ltd.(149.9%), Wanbury Ltd(67.2%), Lupin(54%), Dr Reddy's Laboratories(47.7%), Hiran Orgochem Ltd.(46%), Sun Pharmaceuticals(42.3%), Biocon Pharmaceuticals(39.9%), CIPLA(39.4%), Cadila Health Care Ltd.(31.8%), Aurobindo Pharmaceuticals(23.9%), Marksans Pharma Ltd.(21.8%), Divis Labs(20.5%), Piramal Enterprises.(19.7%), Strides Archolabs(17.0%), Parenteral Drugs (India) Ltd.(16.70%), Biofil Chemicals and Pharmaceuticals Ltd.(13.7 %), Ambalal Sarabhai Enterprises(10.1%), Morepen Labs(3.72%) and Kopran(3.08%) respectively. All these growth rates of nominal amount of Creditors were significant at 1% probability level except the growth rates of Kopran (not significant up to 10% level), Ambalal Sarabhai Enterprises(10% level), and Morepen Labs (not significant up to 10% level).

The growth rates of real amount of Creditors were highest in Zenotech Laboratories Ltd.(209.7%), followed by Sequent Scientific Ltd.(149.9%), Wanbury Ltd(64.10%), Lupin(50.9%), Dr Reddy's Laboratories(44.6%), Hiran Orgochem Ltd.(43%), Sun Pharmaceuticals(39.2%), Biocon Pharmaceuticals(36.8%), CIPLA(36.3%), Cadila Health Care Ltd.(28.7%), Aurobindo Pharmaceuticals(23.9%), Marksans Pharma Ltd.(19.5%), Divis Labs(17.4%), Strides Archolabs(14.6%), Parenteral Drugs (India) Ltd.(14.3%), Piramal Enterprises.(13.7%), Biofil Chemicals and Pharmaceuticals Ltd.(4.80 %), Morepen Labs(1.37%), Ambalal Sarabhai Enterprises(-.064%), and Kopran(-1.37%) respectively. All these growth rates of nominal amount of Creditors were significant at 1% probability level except the growth rates of Kopran (not significant up to 10% level), and Morepen Labs (not significant up to 10% level). In most of the cases the growth rates of nominal amount and real amount of Creditors were found to be positive except in Kopran (-1.37%), Ambalal Sarabhai Enterprises (-.064%) where both the growth rates of nominal amount and real amount of Creditors were found to be negative.

In Creditors, the log quadratic equations were fitted in all the selected pharmaceutical companies except in Strides Archolabs, Parenteral Drugs (India) Ltd., Marksans Pharma Ltd. and Morepen Labs. All these growth trends of the selected pharmaceutical companies were followed a discouraging trend except the trend of Dr Reddy's Laboratories where it was found an encouraging trend. All these encouraging and discouraging trends were significant at 1% probability level except Lupin(5% level), Piramal Enterprises ( not significant up to 10% level), Aurobindo Pharmaceuticals ( not significant up to 10% level), Cadila Health Care Ltd. (5% level), Divis Labs (not significant up to 10% level), Kopran (not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd.( not significant up to 10% level), Ambalal Sarabhai Enterprises ( 10% level) and Wanbury Ltd(not significant up to 10% level).

#### **Current Liabilities and Provisions:**

The regression equations of Current Liabilities and Provisions of the selected Pharmaceuticals companies were best fitted because adjusted R square values were very high in all the cases except in Kopran and Morepen Labs and the adjusted R square value found to be significant at 1% probability level. There was no autocorrelation problem in

Current Liabilities and Provisions (reflected by DW values) of all the selected pharmaceutical companies during the study period.

The growth rates of nominal amount of Current Liabilities and Provisions were highest in Zenotech Laboratories Ltd.(217.5%), followed by Sequent Scientific Ltd.(159.5%), Wanbury Ltd(85.80%), Lupin(62.8%), Dr Reddy's Laboratories(53.9%), Hiran Orgochem Ltd.(49.4%), Biocon Pharmaceuticals(43.5%), CIPLA(35.4%), Sun Pharmaceuticals(31.9%), Strides Archolabs(31.1%), Cadila Health Care Ltd.(29.9%), Aurobindo Pharmaceuticals(22.2%), Marksans Pharma Ltd.(22.10%), Divis Labs(18.3%), Ambalal Sarabhai Enterprises(17%), Parenteral Drugs (India) Ltd.(16.70%), Piramal Enterprises.(16.4%), Morepen Labs(1.84%), Kopran(.09%) and Biofil Chemicals and Pharmaceuticals Ltd.(.064 %) respectively.

All these growth rates of nominal amount of Current Liabilities and Provisions were significant at 1% probability level except the growth rates of Lupin( 10% level), Kopran (not significant up to 10% level) and Morepen Labs (not significant up to 10% level).

The growth rates of real amount of Current Liabilities and Provisions were highest in Zenotech Laboratories Ltd.(213.8%), followed by Sequent Scientific Ltd.(159.5%), Wanbury Ltd(82.7%), Lupin(59.7%), Dr Reddy's Laboratories(50.8%), Hiran Orgochem Ltd.(46.3%), Biocon Pharmaceuticals(40.4%), CIPLA(32.3%), Strides Archolabs(28.1%), Cadila Health Care Ltd.(26.9%), Sun Pharmaceuticals(25.2%), Marksans Pharma Ltd.(19.8%), Aurobindo Pharmaceuticals(19.2%), Piramal Enterprises.(16.2%), Divis Labs(15.3%), Parenteral Drugs (India) Ltd.(14.30%), Ambalal Sarabhai Enterprises(14%), Biofil Chemicals and Pharmaceuticals Ltd.(4.05 %),Morepen Labs(.05%) and Kopran(-1.45%) respectively. All these growth rates were significant at 1% probability level except the growth rate of Lupin (10% level), Kopran (not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd ( 5% level) and Morepen Labs (not significant up to 10% level).

The growth rate of both nominal amount and real amount of Current Liabilities and Provisions of all the selected pharmaceutical companies were found to be positive during the period under study.

In Current Liabilities and Provisions, the log quadratic equations were fitted in all the selected pharmaceutical companies except in Kopran, Biofil Chemicals and Pharmaceuticals Ltd, Parenteral Drugs (India) Ltd., Marksans Pharma Ltd., Morepen Labs. All these growth trends of the selected pharmaceutical companies were followed a discouraging trend except the trend of Lupin, Piramal Enterprises and Divis Labs where it was found to be positive. All these encouraging and discouraging trends were significant at 1% probability level except the trends of Lupin(not significant up to 10% level), Kopran (not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd( 5% level) and Morepen Labs (not significant up to 10% level) Piramal Enterprises ( not significant up to 10% level), Aurobindo Pharmaceuticals ( not significant up to 10% level), Divis Labs (not significant up to 10% level), Strides Archolabs(5%level), Sun Pharmaceuticals( not significant up to 10% level).

#### **Current Assets:**

The regression equations of Current Liabilities and Provisions of the selected Pharmaceuticals companies were best fitted because adjusted R square values were very high in all the selected pharmaceutical companies and the adjusted R square value found to be significant at 1% probability level. There was no autocorrelation problem in Current Liabilities and Provisions (reflected by DW values) of all the selected pharmaceutical companies during the study period.

The growth rates of nominal values of Current assets of the selected pharmaceutical companies were highest in Zenotech Laboratories Ltd.(77.6%), followed by Wanbury Ltd(71.30%), Hiran Orgochem Ltd.(68.9%), Marksans Pharma Ltd.(60.8%), Sun Pharmaceuticals(44%), Biocon Pharmaceuticals(41.3%), Dr Reddy's Laboratories(39.4%), CIPLA(38.3%), Lupin (34.8%), Aurobindo Pharmaceuticals(32.6%), Divis Labs(30.8%), Strides Archolabs(26.7%), Sequent Scientific Ltd.(26.2%), Piramal Enterprises.(21.6%), Cadila Health Care Ltd.(15.1%), Ambalal Sarabhai Enterprises(13.4%), Parenteral Drugs (India) Ltd.(12.30%), Morepen Labs(-15.30%), Kopran(-15.5%) and Biofil Chemicals and Pharmaceuticals Ltd.(-62.10 %) respectively. All these growth rate of nominal values of Current Assets were significant at 1% probability level except Lupin( 5% level), Strides Archolabs

( 5% level), Ambalal Sarabhai Enterprises( 10% level) and Sequent Scientific Ltd( 5% level). The growth rates of nominal values of all the selected pharmaceuticals were found to be positive except the growth rates of nominal values of Kopran, Biofil Chemicals and Pharmaceuticals Ltd. and Morepen Labs where it was found to be negative.

The growth rates of real values of Current Assets of the selected pharmaceutical companies were highest in Zenotech Laboratories Ltd. (74.5%), followed by Wanbury Ltd (68.2%), Hiran Orgochem Ltd. (65.8%), Marksans Pharma Ltd. (57.8%), Sun Pharmaceuticals (40.9%), Biocon Pharmaceuticals (38.2%), Dr Reddy's Laboratories (36.3%), CIPLA(35.2%), Lupin (31.7%), Sequent Scientific Ltd. (31.5%), Divis Labs(30.8%), Aurobindo Pharmaceuticals (29.5%), Cadila Health Care Ltd.(27.7%), Piramal Enterprises.(18.5%), Strides Archolabs (15.2%), Parenteral Drugs (India) Ltd.(9.99%), Ambalal Sarabhai Enterprises(-14.2%), Morepen Labs (-17.7%), Kopran (-18.5%) and Biofil Chemicals and Pharmaceuticals Ltd.(-65.2 %) respectively. All these growth rate of real values of Current Assets were significant at 1% probability level except Lupin (5% level). The growth rates of real values of all the selected pharmaceuticals were found to be positive except the growth rates of real values of Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises and Morepen Labs where it was found to be negative. The growth rates of all the real values of selected pharmaceutical companies were significant at 1% probability level except that of Lupin (5% level).

In Current Assets, the log quadratic equations were fitted in all the selected pharmaceutical companies except in Cadila Health Care Ltd. Parenteral Drugs (India) Ltd. Morepen Labs. All these growth trends of the selected pharmaceutical companies were followed a discouraging trend except the trend of Kopran, Biofil Chemicals and Pharmaceuticals Ltd. and Sequent Scientific Ltd. where it was found to be positive.

All these encouraging and discouraging trends were significant at 1% probability level except the trends of Lupin(not significant up to 10% level), Strides Archolabs( not significant up to 10% level), Sun Pharmaceuticals (5%level), Biocon Pharmaceuticals (5%level), Kopran (5%level), and Sequent Scientific Ltd. (not significant up to 10% level).



### **Net Working Capital:**

The regression equations of Net Working Capital of the selected Pharmaceuticals companies were best fitted because adjusted R square values were very high in all the selected pharmaceutical companies except the adjusted R square values of Piramal Enterprises and Zenotech Laboratories Ltd. and the adjusted R square values were found to be significant at 1% probability level except of Biofil Chemicals and Pharmaceuticals Ltd. (5% level). There was no autocorrelation problem in Current Liabilities and Provisions (reflected by DW values) of all the selected pharmaceutical companies during the study period.

The growth rates of nominal values of Net Working Capital of the selected pharmaceutical companies were highest in Wanbury Ltd(92.60%) followed by Hiran Orgochem Ltd.(83.8%), Zenotech Laboratories Ltd.(80.3%), Marksans Pharma Ltd.(78.4%), Sun Pharmaceuticals(43.7%), Morepen Labs(42.6%), Divis Labs(41.5%), Biocon Pharmaceuticals(39.8%), CIPLA(37.8%), Dr Reddy's Laboratories(36.40%), Aurobindo Pharmaceuticals(35.7%), Strides Archolabs(31.1%), Lupin (26.2%), Sequent Scientific Ltd.(24%), Piramal Enterprises.(16.7%), Cadila Health Care Ltd.(15.4%), Parenteral Drugs (India) Ltd.(10.20%), Ambalal Sarabhai Enterprises(-17.4%), Kopran(-24.10%) and Biofil Chemicals and Pharmaceuticals Ltd.(-90.3 %) respectively.

All these growth rate of nominal values of Net Working Capital were significant at 1% probability level except Lupin ( 5% level), Piramal Enterprises( not significant up to 10% level), Strides Archolabs( 5% level), Biofil Chemicals and Pharmaceuticals Ltd. ( 5% level), Zenotech Laboratories Ltd. ( not significant up to 10% level), Morepen Labs(10% level), The growth rates of nominal values of all the selected pharmaceuticals were found to be positive except the growth rates of nominal values of Kopran, Biofil Chemicals and Pharmaceuticals Ltd. and Ambalal Sarabhai Enterprises, where it was found to be negative.

The growth rates of real values of Net Working Capital of the selected pharmaceutical companies were highest in Wanbury Ltd(89.5%) followed by Hiran Orgochem Ltd.(80.8%), Zenotech Laboratories Ltd.(77.3%), Marksans Pharma Ltd.(75.4%), Sun

Pharmaceuticals(40.6%), Morepen Labs(39.7%), Divis Labs(38.4%), CIPLA(34.8%), Dr Reddy's Laboratories(33.3%), Aurobindo Pharmaceuticals(32.6%), Strides Archolabs(28.1%), Biocon Pharmaceuticals(26%), Sequent Scientific Ltd.(21.6%), Lupin (18.2%), Piramal Enterprises.(13.8%), Parenteral Drugs (India) Ltd.(7.88%), Cadila Health Care Ltd.(-17.4%), Kopran(-27.2%) Ambalal Sarabhai Enterprises (-35.2%), and Biofil Chemicals and Pharmaceuticals Ltd.(-93 %) respectively.

All these growth rate of real values of Net Working Capital were significant at 1% probability level except Piramal Enterprises( not significant up to 10% level), Cadila Health Care Ltd (10% level), Strides Archolabs( 10% level), Zenotech Laboratories Ltd. ( not significant up to 10% level), Marksans Pharma Ltd( 5% level) and Morepen Labs(10% level). The growth rates of real values of all the selected pharmaceuticals were found to be positive except the growth rates of real values of Kopran, Biofil Chemicals and Pharmaceuticals Ltd. Cadila Health Care Ltd and Ambalal Sarabhai Enterprises, where it was found to be negative.

In Net Working Capital, the log quadratic equations were fitted in all the selected pharmaceutical companies except in Cadila Health Care Ltd., Parenteral Drugs (India) Ltd., Sequent Scientific Ltd. All these growth trends of the selected pharmaceutical companies were followed a discouraging trend except the trend of Lupin, Kopran and Biofil Chemicals and Pharmaceuticals Ltd. where it was found to be positive.

All these encouraging and discouraging trends were significant at 1% probability level except the trends of Lupin(not significant up to 10% level), Dr Reddy's Laboratories(5%level), Piramal Enterprises(not significant up to 10% level). Strides Archolabs (not significant up to 10% level), Sun Pharmaceuticals (10%level), Biocon Pharmaceuticals (not significant up to 10% level), Biofil Chemicals and Pharmaceuticals Ltd. (5%level), Zenotech Laboratories Ltd. (not significant up to 10% level), Marksans Pharma Ltd. (5%level).

**TABLE – 4.1**

**Table showing calculation of growth rate of nominal values of different component of working capital of LUPIN for the period 1999-2000 to 2013-2014.**

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.873* (.4319)	1.902	50.4* (4.554)	-0.016** (.007)
DEBTORS	.818* (.4609)	1.548	22.00* (.028)	
CASH	.249*** (1.24)	1.407	73.20** (.318)	-.038*** (.019)
LOANS AND ADVANCES	.659* (.502)	1.448	16.50* (.031)	
CREDITORS	.821* (.4914)	1.368	54* (.126)	-.019** (.008)
CURRENT LIABILITIES AND PROVISIONS	.503* (1.26)	1.735	62.8*** (0.324)	.0209 <sup>a</sup>
CURRENT ASSETS	.808* (.4566)	1.685	34.8** (.117)	-.0086 <sup>a</sup> (.007)
NET WORKING CAPITAL	.769* (.4944)	1.817	26.2** (.127)	.0035 <sup>a</sup> (.008)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.21**

**Table showing calculation of growth rate of Real values of different component of working capital of LUPIN for the period 1999-2000 to 2013- 2014.**

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.849* (.4332)	1.883	47.3* (.111)	-1.55* (.007)
DEBTORS	.780* (.4628)	1.528	19.7* (.028)	
CASH	.206*** (1.23)	1.407	70.1** (.317)	-3.76*** (.019)
LOANS AND ADVANCES	.580* (.5233)	1.434	14.1* (.031)	
CREDITORS	.785* (.495)	1.35	50.9* (.127)	-1.91** (.008)
CURRENT LIABILITIES AND PROVISIONS	.457* (1.26)	1.742	59.7*** (.324)	-2.04 <sup>a</sup> (.020)
CURRENT ASSETS	.766* (.458)	1.670	31.7** (.117)	-.081 <sup>a</sup> (.007)
NET WORKING CAPITAL	.739* (.4782)	1.81	18.2* (.029)	

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.2**

**Table showing calculation of growth rate of nominal values of different component of working capital of Dr. Reddy's Laboratories Ltd. for the period 1999-2000 to 2013-2014.**

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.979* (.134)	1.781	29.9* (.034)	-.005** (.002)
DEBTORS	.929* (.2560)	1.936	18.30** (.066)	.0016 <sup>a</sup> (.004)
CASH	.330** (1.09)	1.467	71.7** (.28)	-.036*** (.017)
LOANS AND ADVANCES	.971* (.1908)	1.039	57.3* (.049)	-.0211* (.003)
CREDITORS	.982* (.148)	1.433	47.7* (.038)	.015* (.002)
CURRENT LIABILITIES AND PROVISIONS	.99* (.1129)	1.644	53.90* (.029)	-.0186* (.002)
CURRENT ASSETS	.934* (.2385)	1.251	39.4* (.061)	-.0123* (.004)
NET WORKING CAPITAL	.884* (.301)	1.255	36.40* (.077)	-.0113** (.005)

Notes: '\*' implies significant at 1% probability level, '\*\*' implies significant at 5% probability level, '\*\*\*' implies significant at 10% probability level and 'a' indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.22**

**Table showing calculation of growth rate of Real values of different component of working capital of Dr. Reddy's Laboratories Ltd. for the period 1999-2000 to 2013-2014.**

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.973* (.1357)	1.717	26.9* (.035)	-.055** (.002)
DEBTORS	.916** (.2498)	1.88	18.5* (.015)	
CASH	.278*** (1.09)	1.467	68.7** (.281)	-3.59*** (.017)
LOANS AND ADVANCES	.967* (.1843)	1.065	54.2* (.047)	-2.08* (.003)
CREDITORS	.975* (.1556)	1.406	44.6* (.040)	-1.46* (.002)
CURRENT LIABILITIES AND PROVISIONS	.988* (.1142)	1.635	50.8* (.029)	-1.82* (.002)
CURRENT ASSETS	.916* (.2407)	1.252	36.3* (.062)	-1.19* (.004)
NET WORKING CAPITAL	.852* (.3025)	1.255	33.3* (.077)	-1.09** (.005)

Notes: '\*' implies significant at 1% probability level, '\*\*' implies significant at 5% probability level, '\*\*\*' implies significant at 10% probability level and 'a' indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.3**

Table showing calculation of growth rate of nominal values of different component of working capital of CIPLA for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.985* (.092)	1.958	28* (.024)	-.007* (.001)
DEBTORS	.988* (.1102)	1.467	55.50* (.028)	-.0221* (.002)
CASH	.756* (.5571)	1.507	57.7* (.143)	-.0232** (.009)
LOANS AND ADVANCES	.849* (.303)	1.195	33.8* (.078)	-.0113** (.005)
CREDITORS	.97* (.1402)	1.455	39.4* (.036)	-.0139* (.002)
CURRENT LIABILITIES AND PROVISIONS	.934* (.174)	1.964	35.4* (.045)	-.0135* (.003)
CURRENT ASSETS	.986* (.098)	1.203	38.3* (.025)	-.013* (.002)
NET WORKING CAPITAL	.976* (.1288)	.965	37.8* (.033)	.0126* (.002)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.23**

Table showing calculation of growth rate of Real values of different component of working capital of CIPLA for the period 1999-2000 to 2013- 2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.978* (.097)	1.835	24.9* (.025)	-.065* (.002)
DEBTORS	.984* (.1120)	1.476	52.5* (.029)	-2.16* (.002)
CASH	.717* (.5524)	1.526	54.6* (.142)	-2.72** (.009)
LOANS AND ADVANCES	.804* (.3032)	1.202	30.8 (.078)	-1.09** (.005)
CREDITORS	.958* (.1451)	1.387	36.3* (.037)	-1.35* (.002)
CURRENT LIABILITIES AND PROVISIONS	.906* (.1789)	1.991	32.3* (.046)	-1.30* (.003)
CURRENT ASSETS	.981* (.09)	1.234	35.2* (.025)	-1.26* (.002)
NET WORKING CAPITAL	.969* (.1285)	1.013	34.8* (.033)	-1.21* (.002)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.4**

Table showing calculation of growth rate of nominal values of different component of working capital of Piramal Enterprises for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.879* (.1326)	1.679	23.1* (.034)	-.09* (.002)
DEBTORS	.826* (.1784)	1.272	24.7* (.046)	-1.06* (.003)
CASH	-.005 <sup>a</sup> (1.31)	1.712	5.38 <sup>a</sup> (.088)	
LOANS AND ADVANCES	.852* (.6183)	1.179	35.7* (.041)	
CREDITORS	.933* (.1912)	1.425	19.7* (.049)	-.02 <sup>a</sup> (.003)
CURRENT LIABILITIES AND PROVISIONS	.945* (.2001)	1.262	16.4* (.051)	.013 <sup>a</sup> (.003)
CURRENT ASSETS	.939* (.08)	1.421	21.6* (.023)	-.09* (.001)
NET WORKING CAPITAL	.59 <sup>a</sup> (.3128)	1.956	16.7 <sup>a</sup> (.132)	-1.07 <sup>a</sup> (.011)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.24**

Table showing calculation of growth rate of Real values of different component of working capital of Piramal Enterprises for the period 1999-2000 to 2013- 2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.785* (.1376)	1.630	20* (.035)	-.095* (.002)
DEBTORS	.729* (.1787)	1.296	21.7 (.046)	-1.01* (.003)
CASH	-.076 <sup>a</sup> (1.32)	1.516	-33.10 <sup>a</sup> (.378)	2.40 <sup>a</sup> (.024)
LOANS AND ADVANCES	.831* (.623)	1.15	33.3* (.041)	
CREDITORS	.912* (.1889)	1.387	13.7* (.011)	
CURRENT LIABILITIES AND PROVISIONS	.930* (.1908)	1.15	16.2* (.012)	
CURRENT ASSETS	.885* (.092)	1.414	18.5* (.024)	-.085* (.001)
NET WORKING CAPITAL	-.093 <sup>a</sup> (.3102)	1.931	13.8 <sup>a</sup> (.130)	-1.04 <sup>a</sup> (.011)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.5**

Table showing calculation of growth rate of nominal values of different component of working capital of Aurobindo Pharmaceuticals for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.98* (.1319)	1.328	26.5* (.034)	-.037*** (.002)
DEBTORS	.956* (.1739)	1.369	21.2* (.045)	-.018 <sup>a</sup> (.003)
CASH	.219*** (1.30)	1.710	79.9** (.333)	-4.52** (.020)
LOANS AND ADVANCES	.946* (.2257)	.945	46.5* (.058)	-1.64* (.004)
CREDITORS	.980* (.1239)	1.753	23.9* (.032)	-.028 <sup>a</sup> (.002)
CURRENT LIABILITIES AND PROVISIONS	.982* (.1168)	1.758	22.2* (.030)	-.02 <sup>a</sup> (.002)
CURRENT ASSETS	.988* (.094)	1.738	32.6* (.024)	-.086* (.001)
NET WORKING CAPITAL	.977* (.1281)	1.846	35.7* (.033)	-1.08* (.002)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.25**

Table showing calculation of growth rate of Real values of different component of working capital of Aurobindo Pharmaceuticals for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.975* (.1286)	1.263	23.4* (.033)	-.003 <sup>a</sup> (.002)
DEBTORS	.940* (.1793)	1.336	18* (.046)	-1.39 <sup>a</sup> (.003)
CASH	.194 <sup>a</sup> (1.29)	1.70	76.8** (.332)	-4.48** (.020)
LOANS AND ADVANCES	.936* (.2203)	.981	43.4* (.056)	-1.60* (.003)
CREDITORS	.980* (.1239)	1.753	25.9* (.032)	-.028 <sup>a</sup> (.002)
CURRENT LIABILITIES AND PROVISIONS	.975* (.1192)	1.857	19.2* (.031)	-.015 <sup>a</sup> (.002)
CURRENT ASSETS	.985* (.09)	1.858	29.5* (.023)	-.082* (.001)
NET WORKING CAPITAL	.972* (.1243)	1.964	32.6* (.032)	-1.04* (.002)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.6**

Table showing calculation of growth rate of nominal values of different component of working capital of Cadila Health Care Ltd. for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.978* (.1048)	1.722	24.3* (.027)	-.05* (.002)
DEBTORS	.955* (.1879)	1.792	25.3* (.048)	-.0368 <sup>a</sup> (.003)
CASH	.422** (.9735)	1.642	-74.5** (.249)	5.04* (.015)
LOANS AND ADVANCES	.885* (.3182)	1.972	19.8* (.019)	
CREDITORS	.924* (.2162)	1.75	31.8* (.055)	-.09** (.003)
CURRENT LIABILITIES AND PROVISIONS	.948* (.1828)	1.748	29.9* (.047)	-.07** (.003)
CURRENT ASSETS	.891* (.2341)	1.567	15.1* (.014)	
NET WORKING CAPITAL	.687* (.458)	.868	15.4* (.027)	

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.26**

Table showing calculation of growth rate of Real values of different component of working capital of Cadila Health Care Ltd. for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.969* (.1055)	1.739	21.2* (.027)	-.0507* (.002)
DEBTORS	.941* (.19)	1.804	22.2* (.049)	-.032 <sup>a</sup> (-.003)
CASH	.411** (.971)	1.645	-77.6* (.2499)	5.09* (.015)
LOANS AND ADVANCES	.857* (.3182)	1.991	17.5* (.019)	
CREDITORS	.898* (.219)	1.739	28.7* (.056)	-.090 (.003)
CURRENT LIABILITIES AND PROVISIONS	.929* (.1856)	1.726	26.9* (.048)	-.075** (.003)
CURRENT ASSETS	.851* (.236)	1.549	12.7* (.014)	
NET WORKING CAPITAL	.805* (.324)	1.485	-17.4*** (.083)	1.90* (.005)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.



**TABLE – 4.7**

Table showing calculation of growth rate of nominal values of different component of working capital of Divis Labs for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.981* (.1457)	1.210	28.7* (.037)	-.03 <sup>a</sup> (.002)
DEBTORS	.979* (.1636)	1.486	32.7* (.042)	-.049*** (.003)
CASH	.864* (.2689)	1.64	15.2* (.016)	
LOANS AND ADVANCES	.924* (.3308)	1.861	35.40* (.085)	-.05 <sup>a</sup> (.005)
CREDITORS	.981* (.1060)	1.601	20.5* (.027)	-.0208 <sup>a</sup> (.002)
CURRENT LIABILITIES AND PROVISIONS	.986* (.1098)	1.734	18.3* (.028)	.015 <sup>a</sup> (.002)
CURRENT ASSETS	.996* (.068)	1.539	30.8* (.017)	-.04* (.001)
NET WORKING CAPITAL	.995* (.088)	1.909	41.5* (.023)	-.08* (.001)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.27**

Table showing calculation of growth rate of Real values of different component of working capital of Divis Labs for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.978* (.1433)	1.251	25.6* (.037)	-2.71 <sup>a</sup> (.002)
DEBTORS	.974* (.1652)	1.519	29.6* (.042)	-.045 <sup>a</sup> (.003)
CASH	.820* (.2684)	1.660	12.9* (.016)	
LOANS AND ADVANCES	.912* (.3256)	1.89	32.4* (.083)	-.055 <sup>a</sup> (.005)
CREDITORS	.978* (.098)	1.678	17.4* (.025)	-.10 <sup>a</sup> (.002)
CURRENT LIABILITIES AND PROVISIONS	.984* (.1058)	1.699	15.3* (.027)	.23 <sup>a</sup> (.002)
CURRENT ASSETS	.993* (.064)	1.672	27.7* (.017)	-.037* (.001)
NET WORKING CAPITAL	.994* (.090)	1.901	38.4* (.023)	-.077* (.001)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.8**

Table showing calculation of growth rate of nominal values of different component of working capital of Strides Archolabs for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.693* (.2891)	1.431	9.86* (.017)	
DEBTORS	.829* (.1782)	1.434	18.7* (.046)	-.063** (.003)
CASH	.515* (.689)	.999	16.4* (.041)	
LOANS AND ADVANCES	.753* (.5918)	1.532	36.4** (.152)	-.08 <sup>a</sup> (.009)
CREDITORS	.904* (.2467)	1.60	17.0* (.015)	
CURRENT LIABILITIES AND PROVISIONS	.943* (.2059)	1.369	31.1* (.053)	-.078** (.003)
CURRENT ASSETS	.803* (.3845)	1.851	26.7** (.098)	-.057 <sup>a</sup> (.006)
NET WORKING CAPITAL	.663* (.5367)	1.649	31.10** (.137)	-.087 <sup>a</sup> (.008)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.28**

Table showing calculation of growth rate of Real values of different component of working capital of Strides Archolabs for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.571* (.283)	1.457	7.51* (.017)	
DEBTORS	.722* (.1788)	1.432	15.7* (.046)	-.059*** (.003)
CASH	.435* (.6848)	.987	14.1* (.041)	
LOANS AND ADVANCES	.719* (.581)	1.466	21.1* (.035)	
CREDITORS	.876* (.2446)	1.610	14.6* (.015)	
CURRENT LIABILITIES AND PROVISIONS	.928* (.204)	1.342	28.1* (.052)	-.073** (.003)
CURRENT ASSETS	.758* (.378)	1.758	15.2* (.023)	
NET WORKING CAPITAL	.593* (.533)	1.641	28.1*** (.137)	-.083 <sup>a</sup> (.008)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.9**

Table showing calculation of growth rate of nominal values of different component of working capital of Sun Pharmaceuticals for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.967* (.1402)	1.971	20.3* (.036)	-.0201 <sup>a</sup> (.002)
DEBTORS	.842* (.3387)	1.893	41.3* (.087)	-1.504** (.005)
CASH	.852* (.7589)	1.954	148.3* (.194)	-7.40* (.012)
LOANS AND ADVANCES	.796* (.5209)	.943	23.2* (.031)	
CREDITORS	.904* (.2856)	1.459	42.3* (.073)	-1.46* (.004)
CURRENT LIABILITIES AND PROVISIONS	.923* (.3234)	1.750	31.9* (.083)	-.042 <sup>a</sup> (.005)
CURRENT ASSETS	.885* (.3472)	1.505	44* (.069)	-1.43** (.005)
NET WORKING CAPITAL	.847* (.4187)	1.628	43.7* (.107)	-1.37*** (.007)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.29**

Table showing calculation of growth rate of Real values of different component of working capital of Sun Pharmaceuticals for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.959* (.1363)	1.973	14.8* (.008)	
DEBTORS	.806* (.333)	1.903	38.2* (.085)	-1.49** (.005)
CASH	.841* (.7548)	1.945	145.2* (.193)	-7.36* (.012)
LOANS AND ADVANCES	.759* (.52)	.937	20.9* (.031)	
CREDITORS	.884* (.2807)	1.465	39.2* (.072)	-1.41* (.004)
CURRENT LIABILITIES AND PROVISIONS	.925* (.319)	1.61	25.2* (.019)	
CURRENT ASSETS	.864* (.341)	1.519	40.9* (.087)	-1.39** (.005)
NET WORKING CAPITAL	.819* (.413)	1.64	40.6* (.106)	-1.33*** (.006)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.10**

Table showing calculation of growth rate of nominal values of different component of working capital Biocon Pharmaceuticals for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.973* (.17)	1.98	39.2* (.044)	-1.05* (.003)
DEBTORS	.978* (.1314)	1.952	39.6* (.034)	-1.28* (.002)
CASH	.699* (1.89)	1.62	142.7** (.485)	-4.94 <sup>a</sup> (.029)
LOANS AND ADVANCES	.938* (.4286)	1.07	41.7* (.11)	-.027 <sup>a</sup> (.007)
CREDITORS	.952* (.202)	1.35	39.9* (.052)	-1.27* (.003)
CURRENT LIABILITIES AND PROVISIONS	.966* (.1899)	1.356	43.5* (.049)	-1.35* (.003)
CURRENT ASSETS	.933* (.2951)	1.814	41.3* (.076)	-1.06** (.005)
NET WORKING CAPITAL	.861* (.506)	1.407	39.8* (.130)	-.071 <sup>a</sup> (.008)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.30**

Table showing calculation of growth rate of Real values of different component of working capital of Biocon Pharmaceuticals for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.966* (.1693)	1.992	36.10* (.043)	-1.01* (.003)
DEBTORS	.972* (.1324)	1.885	36.5* (.034)	-1.23* (.002)
CASH	.681* (1.89)	1.621	139.7* (.487)	-4.90 <sup>a</sup> (.030)
LOANS AND ADVANCES	.934* (.4154)	1.070	35* (.025)	
CREDITORS	.937* (.2060)	1.348	36.8* (.053)	-1.22* (.003)
CURRENT LIABILITIES AND PROVISIONS	.956* (.1931)	1.353	40.4* (.049)	-1.30* (.003)
CURRENT ASSETS	.917* (.2989)	1.84	38.2* (.077)	-1.01* (.005)
NET WORKING CAPITAL	.840* (.5029)	1.553	26* (.030)	

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.11**

Table showing calculation of growth rate of nominal values of different component of working capital of Kopran for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.785* (.2076)	1.063	-36.10* (.053)	1.93* (.003)
DEBTORS	.34** (.325)	.932	-21.9** (.083)	1.11** (.005)
CASH	.116 <sup>a</sup> (.3011)	1.875	-11.1 <sup>a</sup> (.077)	.079 <sup>a</sup> (.005)
LOANS AND ADVANCES	-.066 <sup>a</sup> (.1992)	1.34	.043 <sup>a</sup> (.012)	
CREDITORS	-.128 <sup>a</sup> (.2880)	1.615	3.08 <sup>a</sup> (.074)	-.013 <sup>a</sup> (.004)
CURRENT LIABILITIES AND PROVISIONS	-.05 <sup>a</sup> (.2627)	1.647	.09 <sup>a</sup> (.016)	
CURRENT ASSETS	.447** (.1784)	1.064	-15.5* (.046)	.082** (.003)
NET WORKING CAPITAL	.576* (.2195)	1.715	-24.10* (.056)	1.29* (.003)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.31**

Table showing calculation of growth rate of Real values of different component of working capital of Kopran for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.834* (.2103)	1.036	-39.10* (.054)	.019* (.003)
DEBTORS	.493* (.33)	.928	-25** (.085)	.011** (.005)
CASH	.085 <sup>a</sup> (.3039)	1.888	-14.10*** (.078)	.008*** (.005)
LOANS AND ADVANCES	.094 <sup>a</sup> (.2048)	1.29	-1.92 <sup>a</sup> (.012)	
CREDITORS	-.024 <sup>a</sup> (.2805)	1.607	-1.37 <sup>a</sup> (.017)	
CURRENT LIABILITIES AND PROVISIONS	-.012 <sup>a</sup> (.2659)	1.647	-1.45 <sup>a</sup> (.016)	
CURRENT ASSETS	.640* (.1839)	1.041	-18.5* (.047)	.87* (.003)
NET WORKING CAPITAL	.689* (.2242)	1.659	-27.2* (.057)	1.34* (.003)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.12**

Table showing calculation of growth rate of nominal values of different component of working capital of Biofil Chemicals & Pharmaceuticals for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.723* (.732)	.849	-70.6* (.191)	2.87** (.012)
DEBTORS	.636* (.5903)	1.362	-77.7* (.151)	.045* (.009)
CASH	.171 <sup>a</sup> (.947)	1.803	-35.4 <sup>a</sup> (.243)	2.66** (.015)
LOANS AND ADVANCES	.186 <sup>a</sup> (1.04)	1.369	-50.5*** (.267)	2.5 <sup>a</sup> (.016)
CREDITORS	.517* (.297)	1.636	13.7* (.076)	-.0409 <sup>a</sup> (.005)
CURRENT LIABILITIES AND PROVISIONS	.476* (.289)	1.66	.064* (.017)	
CURRENT ASSETS	.615* (.5305)	1.083	-62.10* (.136)	3.31* (.008)
NET WORKING CAPITAL	.610** (.874)	1.293	-90.3** (.288)	4.38** (.017)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.32**

Table showing calculation of growth rate of Real values of different component of working capital of Biofil Chemicals & Pharmaceuticals for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.752* (.7388)	.848	-73.80* (.193)	2.92** (.012)
DEBTORS	.663* (.589)	1.35	-80.7* (.151)	4.56* (.009)
CASH	.131 <sup>a</sup> (.949)	1.805	-38.4 <sup>a</sup> (.243)	2.70*** (.015)
LOANS AND ADVANCES	.248* (1.04)	1.36	-53.5*** (.269)	2.54 <sup>a</sup> (.016)
CREDITORS	.314** (.295)	1.783	4.80** (.018)	
CURRENT LIABILITIES AND PROVISIONS	.241** (.2908)	1.668	4.05** (.017)	
CURRENT ASSETS	.660* (.535)	1.071	-65.2* (.137)	3.35* (.008)
NET WORKING CAPITAL	.648** (.879)	1.28	-93** (.29)	4.41** (.017)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.13**

Table showing calculation of growth rate of nominal values of different component of working capital of Ambalal Sarabhai Enterprises for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.786* (.713)	1.265	-30.9* (.043)	
DEBTORS	.925* (.278)	1.73	19.9** (.071)	-2.49* (.004)
CASH	.231** (.8504)	1.29	-11.60** (.051)	
LOANS AND ADVANCES	.322** (.4764)	1.79	-7.88* (.028)	
CREDITORS	.597* (.1859)	1.269	10.1*** (.048)	-.088*** (.003)
CURRENT LIABILITIES AND PROVISIONS	.650* (.176)	1.78	17* (.045)	-1.24* (.003)
CURRENT ASSETS	.842* (.2543)	1.537	13.4*** (.065)	-1.58* (.004)
NET WORKING CAPITAL	.726* (.378)	1.66	-17.4* (.33)	

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.33**

Table showing calculation of growth rate of Real values of different component of working capital of Ambalal Sarabhai Enterprises for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.813* (.707)	1.278	-33.2* (.042)	
DEBTORS	.937* (.2787)	1.743	16.9** (.071)	-2.44* (.004)
CASH	.320** (.846)	1.305	-13.9* (.051)	
LOANS AND ADVANCES	.468* (.468)	1.814	-10.2* (.028)	
CREDITORS	.597* (.2303)	.706	-.064* (.014)	
CURRENT LIABILITIES AND PROVISIONS	.757* (.1723)	1.784	14* (.044)	-1.20* (.003)
CURRENT ASSETS	.748* (.3638)	1.138	-14.2* (.022)	
NET WORKING CAPITAL	.785* (.3717)	1.274	-35.2** (.136)	1.17 <sup>a</sup> (.010)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.14**

Table showing calculation of growth rate of nominal values of different component of working capital of Parenteral Drugs(India) Ltd. for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.746* (.2903)	.638	21.5** (.074)	-.06 <sup>a</sup> (.005)
DEBTORS	.855* (.2087)	1.040	11.4* (.012)	
CASH	.471* (1.086)	.654	23.8* (.065)	
LOANS AND ADVANCES	.791* (.3390)	1.045	24.70** (.087)	-.006 <sup>a</sup> (.005)
CREDITORS	.929* (.2050)	1.063	16.7* (.012)	
CURRENT LIABILITIES AND PROVISIONS	.935* (.1958)	.990	16.7* (.012)	
CURRENT ASSETS	.841* (.2385)	.503	12.3* (.014)	
NET WORKING CAPITAL	.651* (.328)	.654	10.2* (.020)	

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.34**

Table showing calculation of growth rate of Real values of different component of working capital of Parenteral Drugs (India) Ltd. for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.645* (.2894)	.646	18.4** (.074)	-.060 <sup>a</sup> (.005)
DEBTORS	.787 (.2081)	1.046	9.04* (.012)	
CASH	.419* (1.07)	.655	21.5* (.064)	
LOANS AND ADVANCES	.785* (.3439)	.989	14.8* (.021)	
CREDITORS	.909* (.2012)	1.09	14.3* (.012)	
CURRENT LIABILITIES AND PROVISIONS	.918* (.1908)	1.033	14.3* (.011)	
CURRENT ASSETS	.781* (.2342)	.505	9.99* (.014)	
NET WORKING CAPITAL	.525* (.3250)	.659	7.88* (.019)	

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.



**TABLE – 4.15**

Table showing calculation of growth rate of nominal values of different component of working capital of Sequent Scientific Ltd. for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.940* (.403)	1.185	99.2* (.278)	-.02*** (.014)
DEBTORS	.933* (.2932)	1.863	59.3** (.202)	-.013 <sup>a</sup> (.010)
CASH	.841* (.4131)	.994	28.9* (.039)	
LOANS AND ADVANCES	.712* (.664)	.553	23.7* (.040)	
CREDITORS	.958* (.679)	1.503	149.9* (.177)	-4.88* (.011)
CURRENT LIABILITIES AND PROVISIONS	.956* (.7073)	1.741	159.5* (.184)	-5.48* (.011)
CURRENT ASSETS	.946* (.3605)	1.006	26.2** (.092)	.047 <sup>a</sup> (.006)
NET WORKING CAPITAL	.847* (.452)	1.45	24* (.027)	

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.35**

Table showing calculation of growth rate of Real values of different component of working capital of Sequent Scientific Ltd. for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.934* (.4067)	1.162	95.3* (.280)	-2.47 <sup>a</sup> (.014)
DEBTORS	.923* (.2944)	1.804	55.3** (.203)	-1.22 <sup>a</sup> (.010)
CASH	.841* (.4131)	.994	28.9* (.039)	
LOANS AND ADVANCES	.712* (.664)	.553	23.7* (.040)	
CREDITORS	.958* (.679)	1.51	149.9* (.177)	-4.88* (.011)
CURRENT LIABILITIES AND PROVISIONS	.956* (.7073)	1.741	159.5* (.184)	-5.48* (.011)
CURRENT ASSETS	.939* (.3574)	.943	31.5* (.021)	
NET WORKING CAPITAL	.818* (.453)	1.45	21.6* (.027)	

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.16**

Table showing calculation of growth rate of nominal values of different component of working capital of Zenotech Laboratories for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	-.109 <sup>a</sup> (1.037)	1.067	71.4 <sup>a</sup> (.716)	-3.44 <sup>a</sup> (.035)
DEBTORS	.797* (.6964)	1.76	53.8** (.178)	-4.93* (.011)
CASH	.440** (1.69)	1.835	209.6** (.695)	-10.2** (.038)
LOANS AND ADVANCES	.912* (.802)	1.059	165.40 (.206)	-7.13* (.012)
CREDITORS	.784* (1.202)	1.024	213.4* (.492)	-8.95* (.027)
CURRENT LIABILITIES AND PROVISIONS	.789* (1.21)	1.094	217.5* (.499)	-9.09* (.027)
CURRENT ASSETS	.569* (.762)	1.31	77.6* (.195)	-3.98* (.012)
NET WORKING CAPITAL	.069 <sup>a</sup> (1.52)	1.47	80.3 <sup>a</sup> (.557)	-5.03 <sup>a</sup> (.042)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.36**

Table showing calculation of growth rate of Real values of different component of working capital of Zenotech for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	-.123 <sup>a</sup> (1.03)	1.07	67.5 <sup>a</sup> (.713)	-3.35 <sup>a</sup> (.035)
DEBTORS	.8146* (.6942)	1.77	50.8** (.178)	-4.89* (.011)
CASH	.417** (.170)	1.837	205.9** (.695)	-10.1** (.038)
LOANS AND ADVANCES	.907* (.797)	1.06	162.40* (.204)	-7.09* (.012)
CREDITORS	.772 (1.20)	1.024	209.7 (.491)	-8.87* (.027)
CURRENT LIABILITIES AND PROVISIONS	.777* (1.21)	1.09	213.8* (.498)	-9.01* (.027)
CURRENT ASSETS	.526* (.7586)	1.317	74.5* (.194)	-3.94* (.012)
NET WORKING CAPITAL	.034 <sup>a</sup> (1.52)	1.48	77.3 <sup>a</sup> (.557)	-5.00 <sup>a</sup> (.042)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.17**

Table showing calculation of growth rate of nominal values of different component of working capital of Marksans Pharma for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.718* (.520)	1.056	64.2* (.133)	-3.07* (.003)
DEBTORS	.844* (.345)	1.94	34.10* (.088)	-1.02*** (.005)
CASH	.385** (1.5)	1.87	117.10* (.385)	-6.25** (.023)
LOANS AND ADVANCES	.678* (.70)	1.227	56.6* (.179)	-2.16*** (.011)
CREDITORS	.782* (.5109)	1.63	21.8* (.031)	
CURRENT LIABILITIES AND PROVISIONS	.797* (.494)	1.67	22.10* (.030)	
CURRENT ASSETS	.734* (.5332)	.889	60.8* (.137)	-2.71* (.008)
NET WORKING CAPITAL	.656* (.778)	1.086	78.40* (.201)	-3.65** (.012)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.37**

Table showing calculation of growth rate of Real values of different component of working capital of Marksans Pharma for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.675* (.5153)	1.072	61.1* (.132)	-.0303* (.008)
DEBTORS	.805* (.3428)	1.957	31.00* (.088)	-.097*** (.005)
CASH	.357** (1.49)	1.882	114** (.384)	-6.21** (.023)
LOANS AND ADVANCES	.634* (.6935)	1.230	53.5** (.178)	-2.12*** (.011)
CREDITORS	.742* (.506)	1.632	19.5* (.030)	
CURRENT LIABILITIES AND PROVISIONS	.761* (.4907)	1.678	19.8* (.029)	
CURRENT ASSETS	.692* (.527)	.896	57.8* (.135)	-2.67* (.008)
NET WORKING CAPITAL	.620* (.7719)	1.096	75.4** (.199)	-3.61** (.012)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.18**

Table showing calculation of growth rate of nominal values of different component of working capital of Wanbury for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.902* (.2937)	1.648	39.2* (.075)	-1.23** (.005)
DEBTORS	.952* (.2930)	1.147	67.7* (.075)	-2.50* (.005)
CASH	.857* (.938)	1.57	138.7* (.240)	-5.72* (.015)
LOANS AND ADVANCES	.925* (.4816)	1.099	88.9* (.123)	-3.32* (.007)
CREDITORS	.804* (.812)	1.86	67.2* (.208)	-1.90 <sup>a</sup> (.013)
CURRENT LIABILITIES AND PROVISIONS	.939* (.4656)	1.53	85.8* (.119)	-2.89* (.007)
CURRENT ASSETS	.950* (.3170)	.888	71.3* (.081)	-2.62* (.005)
NET WORKING CAPITAL	.705* (.746)	1.295	92.6* (.191)	-4.53* (.012)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.38**

Table showing calculation of growth rate of Real values of different component of working capital of Wanbury for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.880* (.2894)	1.651	36.2* (.074)	-1.19** (.005)
DEBTORS	.946* (.2867)	1.161	64.6* (.073)	-2.46* (.004)
CASH	.847* (.9344)	1.584	135.6* (.239)	-5.68* (.015)
LOANS AND ADVANCES	.918* (.4754)	1.113	85.8* (.122)	-3.27* (.007)
CREDITORS	.784* (.8084)	1.870	64.10* (.207)	-1.86 <sup>a</sup> (.0132)
CURRENT LIABILITIES AND PROVISIONS	.933* (.4617)	1.551	82.7* (.118)	-2.85* (.007)
CURRENT ASSETS	.945* (.3096)	.899	68.2* (.079)	-2.58* (.005)
NET WORKING CAPITAL	.674* (.7427)	1.303	89.5* (.190)	-4.49* (.012)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.19**

Table showing calculation of growth rate of nominal values of different component of working capital of Morepen Labs for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.344** (.491)	.990	-8.48** (.029)	
DEBTORS	.304** (.809)	.936	-12.9** (.048)	
CASH	.554* (1.14)	1.18	-29.5** (.069)	
LOANS AND ADVANCES	.351** (1.05)	.956	-18.4** (.063)	
CREDITORS	.026 <sup>a</sup> (.5311)	1.29	3.72 <sup>a</sup> (.032)	
CURRENT LIABILITIES AND PROVISIONS	-.043 <sup>a</sup> (.4785)	1.74	1.84 <sup>a</sup> (.029)	
CURRENT ASSETS	.474* (.6951)	.746	-15.3* (.042)	
NET WORKING CAPITAL	.909* (.625)	1.71	42.6*** (.187)	-5.24* (.011)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.39**

Table showing calculation of growth rate of Real values of different component of working capital of Morepen Labs for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.466* (.4985)	.969	-10.8* (.030)	
DEBTORS	.385* (.8171)	.925	-15.3* (.049)	
CASH	.592* (1.15)	1.182	-31.8* (.069)	
LOANS AND ADVANCES	.414* (1.05)	.954	-20.7* (.063)	
CREDITORS	.062 <sup>a</sup> (.5326)	1.310	1.37 <sup>a</sup> (.032)	
CURRENT LIABILITIES AND PROVISIONS	-.074 <sup>a</sup> (.4796)	1.740	.05 <sup>a</sup> (.029)	
CURRENT ASSETS	.546* (.7001)	.745	-17.7 (.042)	
NET WORKING CAPITAL	.915* (.6284)	1.701	39.7*** (.188)	-5.20 (.011)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.20**

Table showing calculation of growth rate of nominal values of different component of working capital of Hiran Orgochem for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.750* (.681)	.817	96.6* (.175)	-6.61* (.011)
DEBTORS	.378** (.486)	1.081	36.10** (.124)	-1.88** (.008)
CASH	.177 <sup>a</sup> (1.49)	1.21	85.6*** (.383)	-5.11*** (.023)
LOANS AND ADVANCES	.719* (.849)	.717	71.2* (.218)	-2.60*** (.013)
CREDITORS	.652* (.432)	.676	46* (.111)	-2.20* (.007)
CURRENT LIABILITIES AND PROVISIONS	.679* (.4208)	.700	49.40* (.108)	-2.42* (.007)
CURRENT ASSETS	.796* (.394)	.789	.689* (.101)	-3.61* (.006)
NET WORKING CAPITAL	.772* (.4933)	1.172	.838* (.126)	-4.54* (.008)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

**TABLE – 4.40**

Table showing calculation of growth rate of Real values of different component of working capital of Hiran Orgochem Ltd. for the period 1999-2000 to 2013-2014.

Items	Adjusted R <sup>2</sup>	DW Values	Growth (%) ( $\hat{\beta}$ )	Accelerate/ Decelerate ( $\hat{\beta}^{++}$ )
INVENTORY	.762* (.679)	.825	93.5* (.174)	-6.56* (.011)
DEBTORS	.287*** (.4815)	1.081	33.10** (.123)	-1.84** (.007)
CASH	.166 <sup>a</sup> (1.49)	1.220	82.5*** (.382)	-5.07** (.023)
LOANS AND ADVANCES	.719* (.849)	.717	71.2* (.218)	-2.60*** (.013)
CREDITORS	.580* (.429)	.682	43* (.110)	-2.15* (.007)
CURRENT LIABILITIES AND PROVISIONS	.617* (.417)	.708	46.3* (.107)	-2.38* (.006)
CURRENT ASSETS	.770* (.389)	.798	65.8* (.100)	-3.57* (.006)
NET WORKING CAPITAL	.752* (.487)	1.185	80.8* (.125)	-4.49* (.008)

Notes: ‘\*’ implies significant at 1% probability level, ‘\*\*’ implies significant at 5% probability level, ‘\*\*\*’ implies significant at 10% probability level and ‘a’ indicates insignificant beyond 10% probability level. Figures under Adjusted R<sup>2</sup> column indicates 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 percentage per annum.

## CHAPTER – 5

### **ASSESSMENT OF WORKING CAPITAL MANAGEMENT OF SOME SELECTED PHARMACEUTICAL COMPANIES FROM ACCOUNTING POINT OF VIEW.**

To assess the Working Capital Management of some selected pharmaceutical companies from accounting angle, analysis from different accounting point of view had been done. Liquidity analysis, Profitability analysis, Efficiency analysis, working capital financing analysis as well as component wise analysis of working capital had been done with the help of different accounting ratios. In Liquidity analysis, Current Ratio (CR), Quick Ratio (QR) and Absolute Liquid Ratio (ALR) had been considered. Profitability analysis had been analysed with the help of Gross Profit, Net Profit and Return on Capital Employed (ROCE). In efficiency analysis, Inventory Turnover Ratio (ITR), Debtors Turnover Ratio (DTR), Cash Turnover Ratio (CTR), Working Capital Turnover Ratio (Operating Cycle Period) and Creditors Turnover Ratio had been analysed. In component wise analysis of working capital, all the components of working capital like inventory, debtors, cash, loans and advances and creditors were expressed as percentage of total current assets. To analyse the working Capital financing strategy of the selected pharmaceuticals companies, Working Capital Leverage and Trade off between Risk and Profitability had been taken into consideration. Gross Profit Ratio, Net Profit Ratio and Return on Capital Employed had been expressed in percent and Inventory Turnover Ratio, Debtor Turnover Ratio, Cash Turnover Ratio, Working Capital Turnover Ratio; Creditors Turnover Ratio had been expresses in times. All the liquidity analysis ratios like Current Ratio, Quick Ratio and Absolute Liquid Ratio were expressed in proportion.

#### **5.1. Liquidity Analysis**

Liquidity is the ability of a company to meet the short term obligations. It is the ability of the company to convert its assets into cash. Short term, generally, signifies obligations which mature within one accounting year. Short term also reflects the operating cycle: buying, manufacturing, selling, and collecting.

A company that cannot pay its creditors on time and continue not to honor its obligations to the suppliers of credit, services, and goods can be declared a sick company or bankrupt company. Inability to meet the short term liabilities may affect the company's operations and in many cases it may affect its reputation too. Lack of cash or liquid assets on hand may force a company to miss the incentives given by the suppliers of credit, services, and goods. Loss of such incentives may result in higher cost of goods which in turn affect the profitability of the business. So there is always a need for the company to maintain certain degree of liquidity. However, there is no standard norm for liquidity. It depends on the nature of the business, scale of operations, location of the business and many other factors.

Every stakeholder has interest in the liquidity position of a company. Supplier of goods will check the liquidity of the company before selling goods on credit. Employees are also having interest in the liquidity to know whether the company can meet its employees' related obligations: salary, pension, provident fund etc. Shareholders are interested in understanding the liquidity due to its huge impact on the profitability. Shareholders may not like high liquidity as profitability and liquidity are inversely related. However, shareholders are also aware that non-liquidity will deprive the company from getting incentives from the suppliers, creditors, and bankers. Liquidity is normally measured with the help of some ratios.

Liquidity ratios are the ratios that measure the ability of a company to meet its short term debt obligations. These ratios measure the ability of a company to pay off its short-term liabilities when they fall due. Current Ratio, Quick ratio and Absolute Liquid Ratio had been taken for liquidity measures from accounting point of view of the selected pharmaceutical companies during the study period.

#### **5.1.1. Current Ratio:**

It expresses the relation of the amount of current assets to the amount of current liabilities. Current assets include Inventories, Trade Receivables and Cash and Bank balance. The Current Liabilities includes mainly Trade Payables. It is a traditional measure used in ascertaining the ability of a firm to meet its short-term obligations. The higher the current ratio, the larger is the amount available per rupee to meet short-term



obligations and the greater is the security available to the creditors. Traditionally a current ratio of 2:1 is considered satisfactory for a firm and it is taken to represent a good short-term liquidity position. But this standard ratio generally varies from industry to industry. Each industry has to develop its own standard or ideal ratio from past experience and this can only be taken as a norm (Sur, 1997, p.829).

It is an index of sound working capital position for the business. The higher the current ratio, greater the margin of safety and vice versa. Conventionally, a current ratio of 2:1 is considered as satisfactory. In other words, if a company has current ratio of at least 200 percent of its current liabilities, it is considered to be in a fairly good liquidity condition.

From Table – 5.1.1, the current Ratio of the selected Pharmaceuticals Companies had been displayed during the study period. It was found that the current ratio of Lupin was always above the standard norms (2:1) except in 2008-2009. In Dr. Reddy's Laboratories, the current ratio was above the standard norms (2:1) in all the years during the study period. In CIPLA, the current ratio was always above the standard norms. The ratio fluctuated in a narrow band. In Aurobindo Pharmaceuticals, the current ratio was also always above the standard norms (2:1). Since 2006-2007, the ratio followed a decreasing trend. The Current Ratio of Sun Pharmaceuticals was always above the standard norms (2:1). Since 2008-2009, the ratio was in increasing trend. The Current Ratio of Kopran was always above the standard norms of 2:1 except in 2004-2005. Initially, the ratio was in decreasing trend but the ratio was in increasing trend during the last six years of the study. The current ratio of Parenteral Drugs (India) Ltd was always higher than the standard norms of 2:1. The ratio had not followed any trend during the period under study.

Therefore, among the selected samples Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Sun Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd were always holding higher amount of current assets to meet its current obligations. In other words, their number of operating cycle was low and holding higher amount of current assets. They were taken no risk to meet their current obligations. They had adopted conservative strategy in working capital management.

In Cadila Health Care Ltd, the Current Ratio fluctuated time to time. In most of the years the current ratio was above the standard norms (2:1) but in few years (2002-2003, 2003-2004, 2004-2005, 2005-2006 and 2006-2007) the current ratio was below the standard norms of 2:1. The current ratio of Divis Labs was below the standard norms in initial two years of the study. The Current Ratio was above the standard norms (2:1) in rest of the years. Recent, the ratio was in increasing trend. The Current Ratio of Strides Archolabs was always above the standard norms (2:1) except in 2001-2002, 2013-2014. Recent, the ratio was below the standard norms. The current ratio of Biocon Pharmaceuticals was above the standard norms in most of the years but in 1999-2000, 2000-2001, 2001-2002, 2002-2003, 2004-2005 and 2005-2006 the ratio was below the standard norms of 2:1. During the last three years, Biocon Pharmaceuticals had maintained a uniform rate of current ratio and it was above the standard norms. The current ratio of Biofil Chemicals and Pharmaceuticals Ltd. was above the standard norms (2:1) during the initial five years. In rest of the years the current ratio of Biofil Chemicals and Pharmaceuticals Ltd. was below the standard norms. Recently, the ratio started increasing but still it was below the standard norms (2:1). In last four years, the current ratio of Sequent Scientific Ltd. was below the standard norms but in rest of the years, the current ratio was above the standard norms (2:1). Since 2010-2011, the current ratio of Zenotech Laboratories Ltd. was remarkably below the standard norms (2:1). The current ratio of Marksans Pharma Ltd. was above the standard norms (2:1) except in 2000-2001, 2002-2003, 2003-2004, 2010-2011, 2011-2012 and 2012-2013. Since 2010-2011, the current ratio followed an increasing trend. The current ratio of Wanbury Ltd. was above the standard norms of 2:1 in all the years except in last three years and in 2004-2005. Since 2006-2007, the current ratio of Morepen Labs was below the standard norms (2:1). The current ratio of Morepen Labs was above the standard norm in initial six years.

Therefore, in Cadila Health Care Ltd, Divis Labs, Strides Archolabs, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Sequent Scientific Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd., Wanbury Ltd. and Morepen Labs, the amount of working capital had fluctuated time to time. In Divis Labs and Biocon Pharmaceuticals at the initial stage of the study period, they were holding lower amount of current assets to meet their obligations but latter they were holding more Current

Assets than their current obligations. In other words, management attitude had changed from aggressive policy to conservative policy. In Strides Archolabs, Biofil Chemicals and Pharmaceuticals Ltd., Sequent Scientific Ltd., Zenotech Laboratories Ltd., Wanbury Ltd. and Morepen Labs at the initial years of the study period, they were holding higher amount of current assets to meet their current obligations but latter they were holding lower amount of current assets than their current liabilities. In other words, management attitude had changed from conservative to aggressive policy.

The current ratio of Piramal Enterprises was always below the standard norms (2:1). The current ratio of Ambalal Sarabhai Enterprises was also below the standard norms (2:1) in all the years of the study period. The ratio was still declining in recent years. The current ratio of Hiran Orgochem Ltd. was below the standard norms (2:1) in all the years except in 2005-2006 and 2006-2007. However, the ratio started increasing in recent years.

Therefore, in Piramal Enterprises, Ambalal Sarabhai Enterprises and Hiran Orgochem Ltd were always holding lower amount of current assets to meet their current obligations. In other words, there number of operating cycle was higher and holding lower amount of current assets. They were taken high risk to meet their current obligations. They had adopted aggressive strategy in working capital management.

#### **5.1.2. Quick Ratio (QR):**

This ratio is a more rigorous measure of liquidity as compared to the current ratio. It is a refinement of current ratio as it excludes non liquid current assets such as inventories, prepaid expenses etc from the total current assets. This ratio has been calculated by dividing the liquid assets by liquid liabilities. Liquid liabilities had been calculated by subtracting the bank overdraft from the entire current liabilities. Thus by using it, the liquidity of a company can be judged more precisely. Conventionally, a quick ratio of 1:1 is considered as satisfactory. In other words, if a company has quick ratio of at least 100 percent it is considered to be in a fairly good liquidity condition.

From Table 5.1.2, the quick ratios of the selected pharmaceutical companies had been reflected where it was found, In Lupin, Piramal Enterprises, Strides Archolabs, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral drugs

(India) Ltd., Sequent Scientific Ltd., Zenotech Laboratories Ltd., Morepen Labs, Quick Ratio was always in declining trend, which implies they were holding large amount of stock. It also indicated there was less amount of short term loan for financing current assets. These companies mainly doing business on own capital. Their operating cycle was low and they were following conservative strategy in financing current assets.

In Cadila Health Care Ltd., Divis Labs and Biocon Pharmaceuticals quick ratio was always upward trend, which implies that they were holding less amount of stock and as stock was excluded, quick ratio was in inclining trend. It also indicated there were large amount of short term loan for financing current assets. Their operating cycle was high and they were following aggressive strategy in financing current assets.

In Dr. Reddy's Laboratories, quick ratio was declining trend but later part of the study period it was in inclining trend. In Aurobindo Pharmaceuticals, quick ratio was inclining trend but later part of the study it was in declining trend. In CIPLA, Sun Pharmaceuticals, Koprana, Marksans Pharma Ltd., Wanbury Ltd. and Hiran Orgochem Ltd. there were no discernable trend in quick ratio, it was fluctuated time to time.

### **5.1.3. Absolute Liquid Ratio (ALR):**

This ratio is known as super quick ratio or cash position ratio. In addition to current ratio and quick ratio, absolute liquid ratio computed to test the liquidity of the business. The ratio is useful only when used in conjunction with current ratio and quick ratio. It expresses the relation of the amount of absolute liquid assets to the amount of current liabilities. Absolute liquid assets include cash and bank balance, and marketable securities. Alternatively, the absolute liquid assets are computed by subtracting accounts receivables from its liquid assets. The accounts receivables are excluded from the liquid assets on the ground that there may be some doubt about their quick collection. It refers to the spot payment capacity of the company. The Current Liabilities includes mainly Trade Payables excluding bank overdraft. It is a traditional measure used in ascertaining the ability of a firm to meet its immediate obligations. The higher the absolute liquid ratio, the larger is the amount available per rupee to meet immediate obligations and the greater is the security available to the creditors. This ratio also signified that the firm is

not paying attention to credit purchases and avoids the use of short term loans from bank. Traditionally an absolute liquid ratio of 0.5:1 is considered satisfactory for a firm and it is taken to represent a good spot payment position and it is taken as accepted conventional standard. But this standard ratio generally varies from industry to industry. Each industry has to develop its own standard or ideal ratio from past experience and this can only be taken as a norm (Sur, 1997, p.829).

It is also an index of sound working capital position for the business. The higher the absolute liquid ratio, greater the margin of safety and vice versa. The absolute liquid ratios of the selected companies are being analysed below under the study period:

The Absolute Liquid Ratio of the selected pharmaceutical Companies had been displayed in Table- 5.1.3. In CIPLA, Divis labs, Strides Archolabs, Kopran, Biofil Chemicals and Pharmaceuticals and Ambalal Sarabhai Enterprises, the absolute liquid ratio was always below the standard norms (0.5:1). It implied that immediate debt paying capacity of the company was very low. In other words, these companies had followed aggressive Policy in this respect.

In Lupin, the Absolute Liquid Ratio was always below the standard norms of 0.5:1 except in 2005-2006 and 2006-2007. Since 2007-2008, the ratio was declining. In Piramal Enterprises, the Absolute Liquid Ratio was also below the standard norms except in 2010-2011. The ratio had followed no trend. In Aurobindo Pharmaceuticals, the Absolute liquid ratio was always below the standard norms except 2006-2007. In Cadila Health Care Ltd., the Absolute Liquid Ratio was below the standard norms except in initial two years. In Biocon Pharmaceuticals, The ALR was always below the standard norms except in 2003-2004 & 2010-2011. Recently, the ratio was in inclining trend. The absolute liquid ratio of Parenteral Drugs (India) Ltd., the ALR was always below the standard norms except in 2007-2008. No trend was observed from the absolute liquid ratio of Sequent Scientific Ltd. The absolute liquid ratio of sequent scientific Ltd. was always below the standard norms except in 2004-2005. In Wanbury Ltd, the Absolute Liquid Ratio was below the standard norms (0.5:1) except in 2009-2010. In Hiran Orgochem Ltd, the Absolute Liquid Ratio was always below the standard norms except in 2011-2012.

In Dr. Reddy's Laboratories, the Absolute Liquid Ratio was below the standard norms except in 2001-2002, 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008 and 2013-2014. In Zenotech Laboratories Ltd., the absolute liquid ratio was above the standard norms of 0.5:1 in 2001-2002 to 2004-2005 & 2007-2008 to 2009-2010. The ratio was in declining trend in recent years. In Marksans Pharma Ltd., the Absolute Liquid Ratio was below the standard norms except in 2005-2006, 2006-2007. 2007-2008 and 2009-2010. In Morepen Labs, The Absolute Liquid Ratio was above the standard norms in the first part of the study period but in the later part the ratio was below the standard norms.

#### **5.1.4. Summary of the Liquidity Analysis**

From the above liquidity analysis of the selected pharmaceutical companies the following information is obtained:

Among of the selected pharmaceutical companies Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Sun Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd were always holding higher amount of current assets to meet its current obligations. In other words, there number of operating cycle was low and holding higher amount of current assets. They were taken no risk to meet their current obligations. They had adopted conservative strategy in working capital management.

Cadila Health Care Ltd, Divis Labs, Strides Archolabs, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Sequent Scientific Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd., Wanbury Ltd. and Morepen Labs, the amount of working capital had fluctuated time to time. In Divis Labs and Biocon Pharmaceuticals at the initial stage of the study period, they were holding lower amount of current assets to meet their obligations but latter they were holding more Current Assets than their current obligations. In other words, they had changed from aggressive policy to conservative policy. In Strides Archolabs, Biofil Chemicals and Pharmaceuticals Ltd., Sequent Scientific Ltd., Zenotech Laboratories Ltd., Wanbury Ltd. and Morepen Labs at the initial years of the study period, they were holding higher amount of current assets to meet their current obligations but latter they were holding lower amount of current assets

than their current liabilities. They had changed their current assets financing from conservative to aggressive policy.

Piramal Enterprises, Ambalal Sarabhai Enterprises and Hiran Orgochem Ltd were always holding lower amount of current assets to meet their current obligations. Their operating cycle was higher and holding lower amount of current assets. They were taken high risk to meet their current obligations. They had adopted aggressive strategy in working capital management.

Lupin, Piramal Enterprises, Strides Archolabs, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral drugs (India) Ltd., Sequent Scientific Ltd., Zenotech Laboratories Ltd, Morepen Labs, Quick Ratio was always in declining trend. These companies were holding larger amount of stock in their current assets. Their operating cycle was low and they were following conservative strategy in financing current assets.

Dr. Reddy's Laboratories, quick ratio was declining trend but later part of the study period it was in inclining trend. In Aurobindo Pharmaceuticals, quick ratio was inclining trend but later part of the study it was in declining trend. In CIPLA, Sun Pharmaceuticals, Kopran, Marksans Pharma Ltd., Wanbury Ltd. and Hiran Orgochem Ltd. There were no discernable trend in quick ratio; it was fluctuated time to time.

However, the average current ratio as well as quick ratio maintained by the selected pharmaceutical companies during the study period was highest in Sequent Scientific Ltd. followed by Zenotech Laboratories Ltd., Wanbury Ltd., Sun Pharmaceuticals, Dr. Reddy's Laboratories, Aurobindo Pharmaceuticals, Cipla, Strides Archolabs, Parenteral Drugs (India) Ltd., Kopran, Lupin, Divis Labs, Marksans Pharma Ltd., Morepen Labs, Biofil Chemicals and Pharmaceuticals Ltd., Cadila Health Care Ltd., Hiran Orgochem Ltd., Biocon Pharmaceuticals Ltd., Piramal Enterprises and Ambalal Sarabhai Enterprises.

The spot payment capacity of Lupin, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Labs, Strides Archolabs, Biocon Pharmaceuticals, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai

Enterprises, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd., Marksans Pharma Ltd., Wanbury Ltd., Morepen Labs and Hiran Orgochem Ltd. of the selected companies were very poor and much dependent on collection from debtors for paying its short term debt. These companies were followed aggressive policy for short term debt paying capacity.

However, the spot payment capacity of Dr. Reddy's Laboratories, Zenotech Laboratories Ltd., Marksans Pharma Ltd. and Morepen Labs was fluctuated time to time as their absolute liquid ratio was fluctuated.

The average absolute liquid ratio was highest in Zenotech Laboratories Ltd. followed by Sun Pharmaceuticals, Dr. Reddy's Laboratories, Marksans Pharma Ltd., Morepen Labs, Cadila Health Care Ltd., Biocon Pharmaceuticals Ltd., Strides Archolabs, Sequent Scientific Ltd., Piramal Enterprises, Aurobindo Pharmaceuticals, Lupin, Wanbury Ltd., Hiran Orgochem Ltd., Parenteral Drugs (India) Ltd., Cipla, Divis Labs, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., and Ambalal Sarabhai Enterprises.

## **5.2. Profitability Analysis**

Business is conducted primarily to earn profits. The amount of profit earned measures the efficiency of a business. The greater the volume of profit, the higher is the efficiency of the concern. The profit of a business may be measured and analyzed by studying the profitability of investments attained by the business

Profitability is the ability to earn profit from all the activities of an enterprise. It indicates how well management of an enterprise generates earnings by using the resources at its disposal. In the other words the ability to earn profit e.g. profitability, it is composed of two words profit and ability. The word profit represents the absolute figure of profit but an absolute figure alone does not give an exact ideas of the adequacy or otherwise of increase or change in performance as shown in the financial statement of the enterprise. The word 'ability' reflects the power of an enterprise to earn profits, it is called earning performance. Earnings are an essential requirement to continue the business. So we can say that a healthy enterprise is that which has good profitability. According to hermenson Edward and salmonson 'profitability is the relationship of income to some balance sheet



measure which indicates the relative ability to earn income on assets employed. Profitability normally measured with the help of some ratios. Profit is more of a motivator or a driving force rather than bread and butter. To make the total profitability analysis we have chosen to analyze the profitability (of the selected companies of pharmaceutical industry of India) step by step i.e. to start with the calculation and analysis of Gross Profit margin has been done and then net profit margin and Return on Capital Employed has been calculated and analyzed. These are discussed below:

### **5.2.1. Gross Profit Ratio:**

The gross profit margin is a measurement of a company's manufacturing and distribution efficiency during the production process. Gross profit is the profit in sales after deducting all the trading expenses like the cost of raw materials, the direct expenses on purchases, excise duty, etc. The effect of stock adjustment is also given along with deducting factory overheads at this stage, and the result is Gross Profit. In other words when manufacturing cost of goods sold is deducted from the sales the resultant profit are referred to as Gross Profit. The gross profit margin informs an investor about the percentage of revenue / sales left after subtracting the manufacturing cost of goods sold. A company that boasts a higher gross profit margin than its competitors and industry is more efficient.

$$\text{Gross Profit Margin Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

Gross Profit margin is an indicator of the percentage of sales revenue which is above the cost. For making a pricing decision this margin can be utilized for decreasing the price. Theoretically it can be said that the price of a product can be decreased maximum up to the extent of gross profit margin, decrease in price up to this margin would give the firm enough revenue to continue the operations.

A higher gross profit margin ratio is generally better than a lower one. It is difficult to develop any standard ratio in this respect. It can be only judged by a particular firm or industry only from his past experience. There is no 'rule of thumb' which may be used as a norm to examine the gross profit margin ratio. Different standards are generally used for different industries in order to examine the gross profit margin ratio. The average

gross profit ratio of the selected companies taken together was 9.01 during the period under study which may be taken as the accepted standard during the period under study.

Table 5.2.1 displayed that the Gross Profit Ratio of Lupin was always above the average gross profit percentage of the selected samples. The ratio reflected an increasing trend during the study period. The average value of gross profit ratio of Lupin was 21.41 with its standard deviation 5.32. The Gross Profit Ratio of Dr. Reddy's Laboratories was also above the average gross profit percentage of the selected samples during the study period. The Gross Profit Ratio of Dr. Reddy's Laboratories had not followed any trend during the period under study. On an average, the company maintained its gross profit ratio at 24.50 with a standard deviation 7.28. The gross profit Ratio of CIPLA was always above the average gross profit percentage of the selected samples i.e. 9.01. The gross profit Ratio of CIPLA showed a marginally declining trend during the period under study. The Gross Profit Ratio of Aurobindo Pharmaceuticals was always above the average gross profit percentage of the selected samples. The ratio showed an increasing trend. Particularly in recent years the ratio was very high. In Divis Labs, the Gross Profit Ratio was always above the average gross profit percentage of the selected samples. The ratio increased marginally during the entire period. The average Gross profit Ratio was 35.16 with its standard deviation 7.04. In Biocon Pharmaceuticals, the Gross Profit Ratio was above the average gross profit percentage of the selected samples in all the years of the study period. On an average, the Gross Profit Ratio of the company was 19.35 with its standard deviation 5.14. The ratio had followed no trend during the period under study.

Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Divis Labs and Biocon Pharmaceuticals maintaining their gross profit ratio at a level above the average gross profit percentage of the selected pharmaceutical companies in all the years of the study period. Operating expenses of these companies was below the sales volume in all the years of the study.

The Gross Profit Ratio of Piramal Enterprises was above the average gross profit percentage of the selected samples 9.01 in all the years except in the years 2010-2011 to 2013-2014. The ratio was tremendously declined in the recent years of the study. In Cadila Health Care, the gross Profit Ratio was always above the average gross profit

percentage of the selected samples except in the year 2009-2010 & 2010-2011. The Gross Profit Ratio of Cadila Health Care Ltd. had not followed any trend during the period under study. On an average, the Gross Profit Ratio of Cadila Health Care Ltd. was 15.55 with a standard deviation 5.87. In Strides Archolabs, the Gross Profit Ratio was above the average of the selected samples of 9.01 in all the years except in 2003-2004, 2007-2008. The ratio of the company had not followed any trend. In recent years, the gross Profit Ratio of Strides Archolabs had been declined. The average Gross Profit of the company was 19.95 with a standard deviation 4.71 during the study period. In Sun Pharmaceuticals, the Gross Profit Ratio was above the accepted standard of 9.01 in all the years except in the years 2007-2008, 2008-2009 & 2013-2014. In the recent year, the company incurred a Gross loss. The average Gross Profit earned by the company was 18.82 with a standard deviation 15.20. The Gross Profit of Sun Pharmaceuticals had not followed any trend during the period under study. In Kopran, the Gross Profit Ratio was above the standard norms in all the years except in 2002-2003 to 2012-2013. Recently the gross profit ratio of the company was just begun to increase. The average gross profit ratio of the company was 9.93 and its standard deviation was 9.87 during the period under study. The Gross Profit Ratio of Parenteral Drugs (India) Ltd. was below the average gross profit percentage of the selected samples i.e. 9.01 in most of the years of the study except in the years 1999-2000, 2001-2002 to 2006-2007 and 2010-2011 to 2013-2014. During the last two years of the study, the company had incurred a gross loss. On an average, the gross profit ratio was 8.01 and its standard deviation was 10.92. The Gross profit Ratio of Sequent Scientific Ltd. was always above the accepted standard in all the years except in 1999-2000 to 2002-2003, 2007-2008 and 2011-2012 to 2013-2014. Recently, the Gross Profit Ratio of the company had been deteriorated. The average Gross Profit Ratio of the company was 16.48 with a standard deviation 26.10. In Marksans Pharma Ltd., the Gross Profit Ratio was above the accepted standard norms except in 2000-2001 to 2002-2003, 2006-2007, and 2008-2009 to 2011-2012. Recently the gross profit ratio of the company was in increasing trend. The average gross profit ratio of the company was 4.77 with a standard deviation 28.86. The Gross Profit Ratio of Wanbury Ltd. was above the standard norms of 9.01 in all the years except in 1999-2000 to 2003-2004 and 2010-2011 to the ultimate years of the study. The average value of

gross profit ratio was 12.77 and its standard deviation was 6.65. In Morpen Labs, the gross profit ratio was below the standard norms except in 1999-2000 to 2002-2003 and in 2005-2006. The company had gross loss since 2006-2007 to 2012-2013. In 2013-2014, the company was at breakeven point. The average gross profit ratio of the company was - 8.10 with its standard deviation 15.06.

The Gross Profit Ratio of Piramal Enterprises, Cadila Health Care Ltd., Strides Archolabs, Sun Pharmaceuticals, Kopran, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd., Marksans Pharma, Wanbury Ltd. and Morpen Labs had followed no trend during the period under study.

In Biofil Chemicals and Pharmaceuticals Ltd, the Gross Profit Ratio was below the accepted standard norms of 9.01 in all the years except in 2009-2010 and 2012-2013 to 2013-2014. In recent two years, the gross profit ratio of the company started increasing. On an average, the company maintained its gross profit margin at -243.49 with its standard deviation 889.94. In Ambalal Sarabhai Enterprises, the gross Profit Ratio was always below the standard norms of 9.01. The average value of Gross Profit Ratio was – 47.65 and its standard deviation was 48.22 during the study period. Recently, the Gross Profit Ratio of the company had been decreased. In Zenotech Ltd, the Gross Profit Ratio was below the accepted standard in all the years except in 2003-2004 and in 2006-2007. The gross profit ratio of Hiran Orgochem Ltd. was always below the average of the selected samples except in 2005-2006. Recently, the company had incurred huge gross loss.

Biofil Chemicals and Pharmaceuticals, Ambalal Sarabhai Enterprises, Zenotech Ltd. and Horan Orgochem Ltd. were unable to earn gross profit during the study period. It indicated that the operating expenses of these companies were very high.

### **5.2.2. Net Profit Ratio:**

The net profit margin, also known as net margin, indicates how much net income a company makes with total sales achieved. A higher net profit margin means that a company is more efficient at converting sales into actual profit. Net profit margin analysis is not the same as gross profit margin. Under gross profit, fixed costs are

excluded from calculation. With net profit margin ratio all costs are included to find the final benefit of the income of a business. Similar terms used to describe net profit margins include net margin, net profit, net profit ratio, net profit margin percentage, and more. To calculate net profit margin and provide net profit margin ratio analysis requires skills ranging from those of a small business owner to an experienced CFO. This depends on the size and complexity of the company. Net margin measures how successful a company has been at the business of making a profit on each rupee sales. It is one of the most essential financial ratios. Net margin includes all the factors that influence profitability whether under management control or not. The higher the ratio, the more effective a company is at cost control. Compared with industry average, it tells investors how well the management and operations of a company are performing against its competitors. Compared with different industries, it tells investors which industries are relatively more profitable than others. Net profit margin analysis is also used among many common methods for business valuation. There is no 'rule of thumb' which may be used as a norm to examine the net profit margin ratio. Different standards are generally used for different industries in order to examine the net profit margin ratio. The average net profit ratio of the companies taken as a whole was 7.74 during the period under study which may be taken as the accepted standard during the period under study.

Table 5.2.2 reflected that Dr. Reddy's Laboratories, CIPLA, Cadila Health Care Ltd., Divis Labs and Biocon Pharmaceuticals had always maintained their Net Profit Ratio at a rate above the industry average of 7.74 during the period under study. In Dr. Reddy's Laboratories, Net Profit Ratio had followed no trend. On an average, the company maintained its net profit margin at 17.20 with its standard deviation 6.41. In CIPLA, net profit ratio had followed a marginally declined trend. The average value of net profit ratio was 17.08 with its standard deviation 1.7. The net profit ratio of Cadila Health Care Ltd. had followed a marginally increasing trend since 2002-2003. The average net profit margin was 14.17 with a standard deviation 4.14. In Divis Labs, net profit ratio had not maintained any trend during the period under study. The net profit ratios fluctuated closely with a standard deviation 7.75. The net profit ratio of Biocon Pharmaceuticals Ltd. fluctuated randomly with no trend during the study period. The average value of net profit ratio was 19.24 with a standard deviation 9.37.

Therefore, among the selected companies, Dr. Reddy's Laboratories, CIPLA, Cadila Health Care Ltd, Divis Labs and Biocon Pharmaceuticals had maintained their net profit ratio at a high level. These companies were controlling their non-operating cost more effectively. The management and operation of these companies are very well against its competitors. The non operating costs of these companies are comparatively low.

Lupin, Aurobindo Pharmaceuticals, Piramal Enterprises, Strides Archolabs, Sun Pharmaceuticals, Kopran, Sequent Scientific Ltd, Marksans Pharma, Wanbury Ltd. and Morpen Labs were unable to recover its non-operating expenses in all the years of the study. In Lupin, the net profit ratio was above the industry average in all the years except in 1999-2000, 2000-2001, 2002-2003 and 2004-2005. In the recent year, the net profit ratio of Lupin was the maximum. In Aurobindo Pharmaceuticals, Net profit Ratio was above the industry average except in 2000-2001, 2001-2002, 2004-2005, 2005-2006, 2008-2009, and 2011-2012. The ratio had followed no trend during the study period. Net Profit Ratio of Piramal Enterprises was above the industry average in all the years except in the last two years of the study. Recently, the net profit ratio of Piramal Enterprises reached at the minimum value. In strides Archolabs, net profit ratio fluctuated time to time and followed no trend during the entire study period. On an average, the company had net profit ratio of 26.35 with its standard deviation 75.50. In Sun Pharmaceuticals, the net profit ratio was above the industry average in all the years of the study period except in 2013-2014. The company had earned a huge loss in the recent years of the study. Kopran had followed no trend during the study period. The net profit ratio was below the industry average in all the years except 2007-2008. The average net profit ratio was -3.84 with a standard deviation 15.47. In sequent scientific Ltd., the net profit ratio in all the years except in 2003-2004 to 2006-2007 & 2009-2010 was below the industry average of 7.74. The ratio had a declined trend in recent years of the study. In recent years, the net profit ratio of Marksans Pharma Ltd. started inclining. In most of the years, the net profit ratio was below the industry average. The average net profit ratio of Marksans Pharma Ltd. was -12.51 with a standard deviation 47.47. The net profit ratio of Marksans Pharma Ltd. had followed no trend during the study period. The net profit ratio of Wanbury Ltd. also fluctuated time to time. The ratio was below the industry average in most of the years except in 2004-2005 to 2006-2007 and 2009-2010. It had followed no

trend during the period under study. During the recent four years of the study, Wanbury Ltd. had incurred net loss. In Morepen Labs, net profit ratio was fluctuating time to time and had followed no trend. In most of the years, the net profit ratio was below the industry average of 7.74. The company had incurred successive loss since 2003-2004. On an average, the net profit ratio maintained by Morepen Labs was -16.81 with a standard deviation 34.34.

Therefore, in Lupin, Aurobindo Pharmaceuticals, Piramal Enterprises, Strides Archolabs, Sun Pharmaceuticals, Kopran, Sequent Scientific Ltd, Marksans Pharma, Wanbury Ltd. and Morpen Labs net profit ratio were fluctuating from time to time. In most of the years, net profit ratios were below the industry average and these companies had incurred net loss instead of net profit in most of the years. It indicated that non-operating expenses of these companies were exceeds its gross profit. Non-operating expenses of these companies were comparatively high. These companies were unable to control non-operating cost efficiently. Management and operation of these companies are not performing efficiently against their competitors.

In Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral Drugs (India) Ltd, Zenotech Laboratories Ltd. and Hiran Orgochem Ltd., the net profit ratios were always below the average net profit percentage of the selected samples and negative during the entire study period. It indicated that non- operating expenses of these companies were very high. In Biofil Chemicals and Pharmaceuticals Ltd., the average net profit ratio was -290.76 with its standard deviation 907.43. The ratio fluctuated randomly and had followed no trend throughout the study period. Net profit ratio of Ambalal Sarabhai Enterprises was always below the industry average except in 2008-2009. The net profit ratio of Ambalal Sarabhai Enterprises sharply declined since 2009-2010. In Parenteral Drugs (India) Ltd., the net profit ratio was below the industry average except in 2009-2010. The average net profit ratio of Parenteral Drugs(India) Ltd, Ambalal Sarabhai Enterprises, Zenotech Ltd. and Hiran Orgochem Ltd. were -3.21 , -13.52, -166.14 and -32.61 respectively with its standard deviation 15.12, 28.40, 228.95 and 77.50 respectively.

### **5.2.3. Return on Capital Employed (ROCE):**

Return on Capital Employed or ROCE is a profitability ratio that measures how efficiently a company can generate profits from its capital employed by comparing net operating profit to capital employed. In other words, return on capital employed shows investors how many rupees in profits in each rupees of capital employed generates. ROCE is long term profitability ratio because it shows how effectively assets are performing while taking into consideration long term financing. This is why ROCE is a more useful ratio than return on equity to evaluate longevity of a company. This ratio is based on two important calculations: Operating Profit and capital employed. Net operating profit is often called EBIT. EBIT is often reported on the income statement because it shows the company profits generated from operations. Capital employed is a fairly convoluted term because it can be used to refer to many different financial ratios. It refers to the total assets of a company less all current liabilities. Return on Capital Employed is calculated by dividing net operating profit by the capital employed. A higher return on capital employed ratio will be more preferable because it means that more rupees of profits are generated by each rupees of capital employed. Investors are interested in the ratio to see how efficiently a company uses its capital employed as well as long term financing strategies. Company's returns should always be higher than the rate at which they are borrowing to fund the assets. There is no 'rule of thumb' which may be used as a norm to examine the return on capital employed. Different standards are generally used for different industries in order to examine the return on capital employed. The average return on capital employed of the companies taken as a whole was 7.39% during the period under study which may be taken as the accepted standard during the period under study.

In Table – 5.2.3 it was found that the ROCE of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Labs, Biocon Pharmaceuticals was always above the industry average (7.39%). The average ROCE of Lupin was 23.11% with its standard deviation 7.86. The ratio had followed no trend during the entire study period. In Dr. Reddy's Laboratories, ROCE fluctuated time to time and it followed no trend. The ROCE was above the industry average in all the years



except in 2004-2005. In CIPLA, the average ROCE was 19.65% with a standard deviation 8.36. The ratio fluctuated marginally. In Aurobindo Pharmaceuticals, ROCE was above the industry average except in 2004-2005 & 2005-2006. On an average, the ROCE of Aurobindo Pharmaceuticals was 16.25% with its standard deviation 7.87. The ROCE of Cadila Health Care fluctuated marginally with a standard deviation 6.10. The mean ROCE of Cadila Health Care was 14.12%. In Divis Labs, the ROCE was above the industry average in all the years of the study period. The mean value of ROCE of Divis Lab was 33.92% and its standard deviation was 6.08. The ROCE of Divis Lab was in increasing trend since 2009-2010. In Biocon Pharmaceuticals, the ROCE followed no trend. It fluctuated time to time. The ROCE of Biocon Pharmaceuticals was always above the industry average.

Therefore, ROCE of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Labs and Biocon Pharmaceuticals was much higher than that of average ROCE of selected pharmaceutical companies. On an average, the ROCE of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd. Divis Labs and Biocon Pharmaceuticals as a whole was 21.30% as compared to industry average 7.39% during the study period. It is indicated that Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab and Biocon Pharmaceuticals generate more earnings per rupee of capital employed. The ROCE of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Labs, and Biocon Pharmaceuticals indicated the higher profitability during the entire study period.

The ROCE of Piramal Enterprises, Strides Archolabs, Sun Pharmaceuticals, Parenteral Drugs(India) Ltd., Sequent Scientific Ltd., Marksans Pharma, Wanbury Ltd. and Hiran Orgochem Ltd. fluctuated time to time. In few years, the ROCE was above the industry average of 7.39% and in rest of the years the ROCE was below the industry average. In Piramal Enterprises, ROCE was above the industry average in all the years except in 2010-2011 to 2013-2014. In the recent four years of the study, ROCE of Piramal Enterprises declined significantly. The mean ROCE of Piramal Enterprises was 16.17% with a standard deviation 10.99. The ratio had followed no trend. In Strides Archolabs,

ROCE was above the industry average except 2007-2008 to 2011-2012. Recently, ROCE of Strides Archolabs started inclining. In Sun Pharmaceuticals, ROCE was always above the industry average except in 2012-2013 & 2013-2014. Recently, ROCE of Sun Pharmaceuticals was declining. The mean ROCE of Sun Pharmaceuticals was 14.17 with its standard deviation 14.13. The ROCE of Parenteral Drugs (India) Ltd. was above the industry average in most of the years but in 2002-2003 to 2003-2004, 2008-2009, 2010-2011 to 2013-2014, the ROCE was below the industry average. ROCE of Parenteral Drugs(India) Ltd. shows a declining trend during the recent six years of the study. During the last two years of the study, ROCE of Sequent Scientific Ltd. was negative. In Marksans Pharma, ROCE was above the industry average in most of the years but in 2002-2003, 2006-2007 to 2012-2013 the ratio was below the industry average. In recent year, ROCE of Marksans Pharma started inclining. The average ROCE of parenteral drugs (India) Ltd., Sequent Scientific Ltd. and Marksans Pharma was 8.91, 18.30 and 12.12 respectively. The ROCE of Marksans Pharma fluctuated time to time and it shows no trend during the entire study period. ROCE of Wanbury Ltd. was above the industry average in all the years except in 1999-2000, 2008-2009 and 2010-2011 to 2013-2014. Recently, ROCE of Wanbury Ltd. had declined and followed no trend. Since 2006-2007, the ROCE of Hiran Orgochem Ltd. was found to be negative. On an average, ROCE of Hiran Orgochem Ltd. was -3.19 with a standard deviation 38.29.

Therefore, ROCE of Piramal Enterprises, Strides Archolabs, Sun Pharmaceuticals, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd., Marksans Pharma, Wanbury Ltd. and Hiran Orgochem Ltd. was above the average ROCE of the selected samples in most of the years and in rest of the years of the study period, ROCE was below the industry average. In few years, ROCE of some selected sample found to be negative which indicated that the company had a net operating loss in those years. It signified that the net operating expenses in those years of the selected sample were higher than the gross profit. In few years, the profitability of these companies was high and in rest of the years the profitability of these companies was poor. On an average ROCE of Piramal Enterprises, Strides Archolabs, Sun Pharmaceuticals, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd., Marksans Pharma, Wanbury Ltd. and Hiran Orgochem Ltd. were 10.50 as a whole.

The ROCE of Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Zenotech Ltd. and Morepen Labs was always below the average ROCE of the selected pharmaceutical Companies (7.39%) during the study period. The ROCE of these companies had followed no trend. On an average, the ROCE of Kopran, Biofil Chemicals and Pharmaceuticals Ltd. Ambalal Sarabhai Enterprises, Zenotech Ltd. and Morepen Labs were -17.06 as a whole which was much lower than the industry average. The profitability position of these companies was very poor.

#### **5.2.4. Summary of the Profitability Analysis**

From the above profitability analysis, it was observed that the gross profit ratio of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Divis Labs and Biocon Pharmaceuticals maintaining their gross profit ratio at a level above the average gross profit percentage of the selected pharmaceutical companies in all the years of the study period. Operating expenses of these companies was below the sales volume in all the years of the study. The Gross Profit Ratio of Piramal Enterprises, Cadila Health Care Ltd., Strides Archolabs, Sun Pharmaceuticals, Kopran, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd., Marksans Pharma Ltd., Wanbury Ltd. and Morpen Labs had followed no trend during the period under study. Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories Ltd. and Hiran Orgochem Ltd. were unable to earn gross profit during the study period. It indicated that the operating expenses of these companies were very high. The average gross profit percentage of the selected pharmaceutical companies was highest in Divis Labs followed by Dr. Reddy's Laboratories, Sun Pharmaceuticals, Cipla, Biocon Pharmaceuticals Ltd., Lupin, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Strides Archolabs, Piramal Enterprises, Wanbury Ltd., Parenteral Drugs (India) Ltd., Kopran, Marksans Pharma Ltd., Morepen Labs, Hiran Orgochem Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories Ltd. Biofil Chemicals and Pharmaceuticals Ltd. and Sequent Scientific Ltd.

The Net Profit Ratio of Dr. Reddy's Laboratories, CIPLA, Cadila Health Care Ltd, Divis Labs and Biocon Pharmaceuticals were very high. These companies were controlling their non-operating cost more effectively. The management and operation of these

companies are very well against its competitors. The non operating costs of these companies are comparatively low.

The net profit ratio of Lupin, Aurobindo Pharmaceuticals, Piramal Enterprises, Strides Archolabs, Sun Pharmaceuticals, Kopran, Sequent Scientific Ltd, Marksans Pharma, Wanbury Ltd. and Morpen Labs were fluctuating from time to time. In most of the years, net profit ratios were below the average net profit percentage of the selected pharmaceutical companies and these companies had incurred net loss instead of net profit in most of the years. Non-operating expenses of these companies were very high and it exceeds its gross profit. The net profit ratio of Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral Drugs (India) Ltd, Zenotech Laboratories Ltd. and Hiran Orgochem Ltd. were always below the average net profit percentage of the selected samples and negative during the entire study period. The average net profit percentage was highest in Piramal Enterprises followed by Strides Archolabs, Divis Labs, Sun Pharmaceuticals, Biocon Pharmaceuticals Ltd., Dr. Reddy's Laboratories, Cipla, Cadila Health Care Ltd., Lupin, Aurobindo Pharmaceuticals, Wanbury Ltd., Parenteral Drugs (India) Ltd., Kopran, Marksans Pharma Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories Ltd. Morepen Labs, Hiran Orgochem Ltd., Biofil Chemicals and Pharmaceuticals Ltd. and Sequent Scientific Ltd.

ROCE of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care ltd., Divis Labs and Biocon Pharmaceuticals was much higher than that of average ROCE of selected pharmaceutical companies. ROCE of Piramal Enterprises, Strides Archolabs, Sun Pharmaceuticals, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd., Marksans Pharma, Wanbury Ltd. and Hiran Orgochem Ltd. fluctuated time to time. ROCE of Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories Ltd. and Morepen Labs was always below the average ROCE of the selected pharmaceutical Companies (7.39%) during the study period. Moreover, the average ROCE of the selected pharmaceutical companies was highest in Divis Labs followed by CIPLA, Lupin, Biocon Pharmaceuticals Ltd., Cadila Health Care Ltd., Dr. Reddy's Laboratories, Piramal Enterprises, Aurobindo Pharmaceuticals, Sun Pharmaceuticals, Sequent Scientific Ltd, Wanbury Ltd., Strides

Archolabs, Marksans Pharma Ltd., Parenteral Drugs (India) Ltd., Kopran, Morepen Labs, Hiran Orgochem Ltd., Zenotech Laboratories Ltd., Ambalal Sarabhai Enterprises and Biofil Chemicals and Pharmaceuticals Ltd.

### **5.3. Efficiency Analysis**

Efficiency indicated a level of performance that describes a process which uses the lowest amount of inputs to create the greatest amount of outputs. Efficiency relates to the use of all inputs in producing any given output, including personal time and energy. Efficiency Ratios, those are typically used to analyze how well a company uses its assets and liabilities internally. There are many types of efficiency ratios, but all measure how well a company utilizes its resources to make a profit. Business managers use these ratios to determine how well they are operating. Efficiency ratios are used to measure the quality of the company's receivables and how efficiently it uses its other assets. It includes Inventory Turnover Ratio, Debtors Turnover Ratio, Cash Turnover Ratio, Working Capital Turnover Ratio and Creditors Turnover Ratio.

#### **5.3.1. Inventory Turnover Ratio (ITR):**

This ratio measures the efficiency of inventory management of a firm. It is computed dividing cost of goods sold by average inventory maintained during the year. The average inventory had calculated as half of the total of opening and closing inventory in a year. If the inventory is efficiently managed, it will help in enhancing the liquidity of the firm. It also indicated the managerial efficiency. A high Inventory turnover ratio indicates more frequently the stock are sold which implied less amount is blocked in inventory , resulting a high level of efficiency in inventory management and it is good from the liquidity point of view whereas a low ratio implies excessive inventory levels than warranted by volume of operation. Higher inventory turnover ratio, lesser the working capital requirement and vice versa. There is no 'rule of thumb' for the Inventory turnover ratio for interpreting the results. The norms may be different for different industries which actually depend upon the nature of industry and business conditions. The average inventory turnover ratio of the selected samples taken as a whole was 5.80 during the period under study.

From Table 5.3.1, it was found that the average Inventory Turnover Ratio of Dr. Reddy's Laboratories, Piramal Enterprises, Cadila Health Care Ltd., Strides Archolabs, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Wanbury Ltd. and Morepen Labs was above the average of the selected samples. In Dr. Reddy's Laboratories the inventory turnover ratio was above the average of the selected samples in all the years except 2004-2005, 2005-2006 and 2009-2010 to 2012-2013. The inventory turnover ratio of Dr. Reddy's Laboratories fluctuated marginally and followed no trend. It began to incline in the recent years of the study. In Piramal Enterprises, the mean inventory turnover ratio was 5.43 with a standard deviation 0.93. The inventory turnover ratio of Piramal Enterprises was above the average of the selected companies in all the years except in 1999-2000 to 2000-2001, 2004-2005 and 2011-2012 to 2012-2013. The inventory turnover ratio of Piramal Enterprises had followed no trend during the period under study. In Cadila Health Care Ltd., the inventory turnover ratio was above the average of the selected sample, except 2001-2002 to 2002-2003, 2006-2007 to 2010-2011. The average inventory turnover ratio of Cadila Health Care Ltd. was 4.69 with a standard deviation 0.51 during the study period. The average inventory turnover ratio of Strides Archolabs was 4.52 with a standard deviation 1.82. The Inventory turnover ratio of Biocon Pharmaceuticals fluctuated time to time. In most of the years the inventory turnover ratio was above the average of the selected samples except 1999-2000 to 2000-2001 & 2007-2008 to 2012-2013. The average inventory turnover ratio of Biocon Pharmaceuticals was 4.12 with a standard deviation 1.15 during the period under study. The inventory turnover ratio of Biofil Chemicals and Pharmaceuticals Ltd. was much higher than the average of the selected samples during the recent four years of the study. In most of the years, the inventory turnover ratio was above the average of the selected samples of 3.59 except 1999-2000 to 2005-2006 and 2009-2010 during the study period. The inventory turnover ratio of Biofil Chemicals and Pharmaceuticals Ltd. had followed no trend during the study period. The inventory turnover ratio of Ambalal Sarabhai Enterprises was fluctuated time to time and it followed no trend. The inventory turnover ratio of Ambalal Sarabhai Enterprises was above the average of the selected samples of 22.32 in most of the years except in 2000-2001, 2001-2002, 2003-2004 and 2005-2006.

In Sequent Scientific Ltd., the inventory turnover ratio was below the average of the selected samples in most of the years except in 2003-2004 to 2006-2007. The average inventory turnover ratio of Sequent Scientific Ltd. was 4.41 with a high standard deviation of 4.23. The inventory turnover ratio of Ambalal Sarabhai Enterprises was in inclining trend since 2009-2010. The inventory turnover ratio of Wanbury Ltd. was above the average of the selected samples in most of the years except 1999-2000 to 2002-2003. The inventory turnover ratio of Wanbury Ltd. was the highest in recent years of the study. The mean value of inventory turnover ratio of Wanbury Ltd. was 6.92 with a standard deviation 4.09. The inventory turnover ratio of Morepen Labs was fluctuated time to time. In most of the years, the inventory turnover ratio of Morepen Labs was above the average of the selected samples of 5.80 except in 2001-2002 and 2004-2005 to 2005-2006, on an average, the inventory turnover ratio of Morepen Labs was 5.84 and its standard deviation was 2.52.

Thus, Inventory Turnover Ratio of Dr. Reddy's Laboratories, Piramal Enterprises, Cadila Health Care Ltd., Strides Archolabs, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Wanbury Ltd. and Morepen Labs was above the above the average of the selected samples in most of the years of the study. It indicated that these companies have strong sales in most of the years. These companies are maintaining their inventory level efficiently during the entire study period. The liquidity position of these companies was also better. High level of inventory turnover ratio may lead to shortage or inadequate level of inventory which may cause to a loss of the business. The inventory turnover ratio of Ambalal Sarabhai Enterprises was very high as compared to the average of the selected samples. A high inventory turnover level was also unhealthy because they represent an investment with a rate of return of zero. It also opens the company up to trouble if the prices begin to fall.

The average inventory turnover ratio of Lupin, CIPLA, Aurobindo Pharmaceuticals, Divis Labs, Sun Pharmaceuticals, Kopran, Parenteral Drugs (India) Ltd., Zenotech Laboratories, Marksans Pharma Ltd. and Hiran Orgochem Ltd. was below the average of the selected samples during the period under study. These companies are maintaining a

low inventory turnover ratio which is an indicator of inefficiency. It also indicated either poor sales or excessive inventory. The liquidity position of these companies was very poor. There was a huge possibility of overstocking and obsolescence but it reflected a planned inventory buildup in the case of material shortages or in anticipation of rapid rising prices. The inventory turnover ratio of Lupin was fluctuated from time to time. In most of the years the inventory turnover ratio was below the average of the selected samples of 5.8 except in 2001-2002 to 2002-2003 and 2013-2014. The average inventory turnover ratio of Lupin was 4.15 with its standard deviation 0.72. In CIPLA, the average inventory turnover ratio was 2.64 with its standard deviation 0.28. The inventory turnover ratio of CIPLA was below the average of the selected samples in all the years of the study. The inventory turnover ratio of Aurobindo Pharmaceuticals was below the average of the selected samples in all the years of the study period except in 1999-2000 and 2001-2002. The ratio was much below the average of the selected samples since 2002-2003. The mean inventory turnover ratio was 3.71 with its standard deviation 1.26. In Divis Labs, the inventory turnover ratio was always below the average of the selected samples of 5.8. The ratio fluctuated marginally during the study period. The inventory turnover ratio of Sun Pharmaceuticals was much below the average of the selected samples in recent two years of the study. The ratio was above the average of the selected samples in most of the years except in 2000-2001 to 2002-2003, 2009-2010 to 2010-2011 and 2012-2013 to 2013-2014. In Kopran, the inventory turnover ratio was above the standard norms in all the years of the study except 1999-2000 to 2007-2008. The inventory turnover ratio of Kopran was satisfactory since 2008-2009. The mean inventory turnover ratio of Parenteral Drugs (India) Ltd. was 4.46 and its standard deviation was 0.94. In most of the years the inventory turnover ratio was below the average of the selected samples of 5.8 except 2000-2001 and 2006-2007. The inventory turnover ratio of Zenotech Ltd. was always below the average of the selected samples of 5.8 except in 2010-2011. The average value of inventory turnover ratio was 6.37 with a standard deviation 7.80. The inventory turnover ratio of Marksans Pharma Ltd. was always below the average of the selected samples of 5.8 except 2000-2001. During the recent years of the study, the inventory turnover ratio of Marksans Pharma Ltd. was in increasing trend. In Hiran Orgochem Ltd., the inventory turnover ratio was below the average of the



selected samples in all the years except 2010-2011 to 2012-2013. The ratio of the company had followed no trend during the study period.

Thus, Cadila Health Care Ltd. and Biocon Pharmaceuticals was maintaining their average inventory turnover ratio at a level of the average of selected samples during the study period followed by Dr. Reddy's Laboratories, Piramal Enterprises, Strides Archolabs Ltd., Sequenti Scientific Ltd. and Morepen labs respectively. The inventory turnover ratio of Biofil Chemicals and Pharmaceuticals Ltd. and Ambalal Sarabhai Enterprises was remarkably higher than the average of the selected samples which is unhealthy as it represents an investment with rate of return zero. The inventory turnover ratio of CIPLA, Divis Labs and Zenotech Ltd. was remarkably low which is representing a high volume of stock. It is also indicated poor liquidity. The inventory turnover ratio of Zenotech Ltd., Divis Labs, Sun Pharmaceuticals and Hiran Orgochem Ltd. was remarkably below the average of the selected samples of 5.8 in the recent year of the study.

### **5.3.2. Debtors Turnover Ratio (DTR):**

Debtors Turnover Ratio highlights credit and collection policy pursued by a firm. It is calculated dividing credit sales by average debtors. An average debtor is the half of opening debtors and closing debtors. The quality of debtors influences the liquidity of a firm. It tests the speed with which debtors are converted into cash. The liquidity of a firm is directly influenced by this speed. Thus, debtors' velocity indicates the efficiency of receivables management in a company. A high Debtors turnover ratio reflects the promptness of debtors' collectivity i.e. smooth flow of liquidity and a low Debtors turnover ratio indicates longer average collection period i.e. shrinkage of liquidity and also proves inefficiency in credit management. There is no 'rule of thumb' which may be used as a norm to examine the Debtors turnover ratio. Different standards are generally used for different industries in order to examine the Debtors turnover ratio. The average debtor turnover ratio of the selected companies taken as a whole was 4.53.

Table – 5.3.2 displayed that the average DTR of Piramal Enterprises and Cadila Health Care Ltd. was above the average of the selected samples. The debtors collection of these companies were very prompt which indicated efficient in DTR during the period under

study. These companies were managed their receivables efficiently. In Piramal Enterprises, the DTR was always above the average of the selected companies of 4.53 during the study period. It indicated that the debtors are converted into cash speedily. Since 2011-2012, the DTR started increasing. In Piramal Enterprises, the mean value of DTR was 6.96 and standard deviation was 1.44. The DTR of Cadila Health Care Ltd. was always above the average of the selected samples. On an average, Cadila Health Care Ltd. had maintained its DTR at 6.49 with a standard deviation 1.64. The DTR of Cadila Health Care Ltd. fluctuated marginally and had followed no trend.

In most of the years the DTR of CIPLA, Sun Pharmaceuticals, Sequent Scientific Ltd., Zenotech Ltd, Morepen Labs and Hiran Orgochem Ltd. was above the average DTR of the selected samples but in rest of the years it was below the average DTR of the selected samples. The average DTR of CIPLA, Sun Pharmaceuticals, Sequent Scientific Ltd., Zenotech Ltd., Morepen Labs and Hiran Orgochem Ltd. was above the average of the selected samples of 4.53. In CIPLA the DTR was above the average of the selected samples of 4.53 in all the years except 2004-2005 to 2010-2011. The DTR increased in the recent three years. The average value of DTR was 4.52 with standard deviation 1.52. In Sun Pharmaceuticals, the DTR was above the average of the selected samples of 4.53 except 2007-2008 to 2009-2010 and 2012-2013 to 2013-2014. During the first eight years, the DTR was always above the average of the selected samples of 4.53 but in the recent two years, the DTR was remarkably low. The DTR of Sequent Scientific was fluctuated time to time. In most of the years the DTR was above the average of the selected samples except 1999-2000 to 2000-2001, 2003-2004, 2005-2006 and 2012-2013. The DTR of Zenotech Ltd. was remarkably lower than the average of the selected samples during the first ten years of the study but in rest of the years, the DTR was a remarkably higher than the average of the selected samples. In Zenotech Ltd., the mean value of DTR was 9.50 with standard deviation 14.04. In the last seven years, the DTR was above the average of the selected samples. The DTR fluctuated time to time and followed no trend. The DTR of Hiran Orgochem Ltd. was always below the average of the selected samples except 2003-2004 to 2009-2010. In the last four years of the study, the DTR was remarkably low. On an average, the DTR was above the average of the selected samples.

Therefore, CIPLA, Sun Pharmaceuticals, Sequent Scientific Ltd., Zenotech Ltd., Morepen Labs and Hiran Orgochem Ltd. maintained their DTR high in few years and low in rest of the years of the study.

The average value of DTR of Lupin, Divis Labs, Biocon Pharmaceuticals, Kopran, Marksans Pharma Ltd. and Wanbury Ltd. was below the average of the selected samples. In few years, the DTR was above the average of the selected samples but in rest of the years, the DTR was below the average of the selected samples. The DTR of these companies had followed no trend. In Lupin, the DTR was always below the average of the selected samples except 2000-2001, 2004-2005 to 2007-2008 and 2009-2010. The mean value of DTR of Divis Labs was 4.52 with a standard deviation 1.71. In the last five years, the DTR of Divis Labs was below the average DTR of the selected samples. The DTR of Biocon Pharmaceuticals was below the average of the selected samples in most of the years. In the last five years the DTR was in increasing trend. The mean value of DTR of Biocon Pharmaceuticals was 3.16 with its standard deviation 1.00. The DTR of Kopran was below the average of the selected samples in the first nine years but it was above the average of the selected samples in the last six years. In the last five years, the ratio was in marginally increasing trend. In the recent eight years, the DTR of Marksans Pharma was below the average of 4.53. In Wanbury Ltd., the DTR was above the average of the selected samples in most of the years but in few years it was below the average. In the last three years, the ratio followed an increasing trend. The average DTR was 3.96 with standard deviation 1.12.

Therefore, in most of the years, the debtors collection period of Lupin, Divis Labs, Biocon Pharmaceuticals, Kopran, Marksans Pharma Ltd. and Wanbury Ltd. was very long and in few years it was the average of the selected samples.

The DTR of Dr. Reddy's Laboratories, Aurobindo Pharmaceuticals, Strides Archolabs, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises and Parenteral Drugs (India) Ltd. was always below the average of the selected samples during the entire study period. These companies are offering liberal credit policy to their customer. The liquidity position of these companies was very weak. The DTR of Dr. Reddy's Laboratories was in marginally decreasing trend. The average DTR was 3.40 with a

standard deviation 0.57. In the last year, the DTR was very low. The DTR of Aurobindo Pharmaceuticals was below the average of the selected samples except in the first two years of the study. The DTR of Strides Archolabs fluctuated randomly and had followed no trend. In the last year, the DTR was just the average of the selected samples. The mean DTR of Strides Archolabs was 2.58 with a standard deviation 0.75. The DTR of Biofil Chemiocals and Pharmaceuticals Ltd. were always remarkably lower than the average of the selected samples. The mean DTR was 2.06 with standard deviation 1.86. The DTR of Ambalal Sarabhai Enterprises was always below the average of the selected samples. The average DTR was 3.30 with a standard deviation 1.11. In the last four years, the DTR of Parenteral Drugs (India) Ltd was in decreasing trend. The average DTR was 3.12 with a standard deviation 0.80.

The study revealed that the DTR of Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises and Strides Archolabs were remarkably longer. The collection period of these companies was very longer. The collection period of Piramal Enterprises, Cadila Health Care Ltd. and Morepen labs was very shorter. The DTR of rest of the companies was longer in few years and shorter in rest of the years of the study period.

### **5.3.3. Cash Turnover Ratio (CTR):**

This ratio measures how many times per year it replenishes its cash balance with its sales revenue. It measures the efficiency of cash management. High cash turnovers mean that a company is going through its cash cycles quickly. The higher CTR, the higher is the efficiency of cash management and vice-versa. A higher cash turnover ratio is generally better than a lower one. It is difficult to develop any standard ratio in this respect. It can be only judged by a particular firm or industry only from his past experience. There is no 'rule of thumb' which may be used as a norm to examine the cash turnover ratio. Different standards are generally used for different industries in order to examine the cash turnover ratio. The average cash turnover ratio of the selected companies taken as a whole was 60.80 during the period under study.

Table 5.3.3 displayed that the average CTR of Lupin, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd, Divis Lab, Biocon Pharmaceuticals,

Parenteral Drugs (India) Ltd. and Wanbury Ltd. was above the average of the selected samples. The cash management of these companies is very efficient. On an average, the cash cycles of these companies are very short. These companies had followed no trend during the study period. In Lupin, the CTR was above the average of selected samples of 60.80 except 1999-2000 to 2001-2002 and 2004-2005 to 2007-2008. The ratio fluctuated widely. The CTR of CIPLA was always above the average of the selected samples except 2006-2007 to 2007-2008. On an average, the CTR of CIPLA was 114.32 with a standard deviation 66.71. Cash conversion period of CIPLA was very short. The CTR of CIPLA had followed no trend. The CTR of Piramal Enterprises above the average of the selected samples in most of the years but in few years it was below the average of the selected samples. In the first six years, the CTR of Piramal Enterprises was increasing trend. The Mean value of CTR of Aurobindo Pharmaceuticals was 158.30 with a standard deviation 242.91. In the recent year, the CTR was very high. It had followed no trend during the study period. The CTR of Cadila Health Care Ltd. was below the average of the selected samples in most of the years but in few years it was above the average. In the recent four years, the CTR of Cadila Health Care Ltd. was very low. The CTR of Divis Lab was above the average of the selected samples in the recent seven years of the study but in the first five years it was very low. The CTR of Divis Lab fluctuated with a narrow band. In Biocon Pharmaceuticals, CTR was very high during 1999-2000 to 2008-2009 except 2003-2004. In the recent five years, the CTR was very low. The average CTR of Biocon Pharmaceuticals was 102.66 with a standard deviation 45.14. The cash cycle period of Biocon Pharmaceuticals in the recent five years was very slow but in the beginning of the years, it was very prompt. The mean value of CTR of Parenteral Drugs (India) Ltd. was 102.51 and its standard deviation was 111.19. The CTR of Parenteral Drugs (India) Ltd. fluctuated widely and it had followed no trend during the study period. The CTR of Parenteral drugs (India) Ltd. was very low since 2006-2007. But in the first seven years, the CTR of Parenteral drugs (India) Ltd. was above the average of the selected samples. The CTR of Wanbury Ltd. was always below the average of the selected samples except 1999-2000 to 2003-2004 and 2013-2014. The cash conversion cycle of Wanbury Ltd. was very slow during 2004-2005 to 2012-2013. In the recent year, the CTR of Wanbury Ltd. was very high.

Therefore, cash conversion cycle of Lupin, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Biocon Pharmaceuticals, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was very prompt in most of the years but very slow in rest of the years of the study.

The average CTR of Dr. Reddy's Laboratories, Strides Archolabs, Sun Pharmaceuticals, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd., Morepen Labs and Hiran Orgochem Ltd. was below the average of the selected samples. In most of the years, the CTR was very low. It indicated that the cash conversion period of these companies were very long. Cash management of these companies was inefficient in most of the years of the study. In Dr. Reddy's Laboratories, the CTR was always below the average of the selected samples except 2010-2011. The mean CTR of Dr. Reddy's Laboratories was 14.84 with standard deviation 21. The CTR of Strides Archolabs was always below the average of the selected samples. On an average, the CTR of Strides Archolabs was 15.97 with a standard deviation 9.93. The CTR of Strides Archolabs fluctuated widely and followed no trend. The CTR of Sun Pharmaceuticals was remarkably low during the entire study period except 1999-2000. The mean and Standard deviation of CTR of Sun Pharmaceuticals was 18.11 and 28.23 respectively. The average CTR of Kopran was lower than the average of the selected samples in most of the years. In few years, it was above the average of 60.80. In the recent five years of the study, the CTR started increasing and it was just above the average of 60.80. The mean CTR of Biofil Chemicals and Pharmaceuticals Ltd. were 44.02 with a standard deviation 33.24. In the recent seven years, the CTR of Biofil Chemicals and Pharmaceuticals Ltd. was below the average of the selected samples. It had followed no trend during the entire study period. The CTR of Ambalal Sarabhai Enterprises was always below the average of the selected samples of 60.80. The cash conversion period of Ambalal Sarabhai Enterprises was very long. The CTR of Sequent Scientific Ltd. was remarkably low during the entire study period. On an average, the CTR of Sequent Scientific Ltd. was 13.50 and its standard deviation was 11.63. The CTR of Sequent Scientific Ltd. fluctuated marginally during the study period. In Zenotech laboratories Ltd., the CTR was always below the average of the selected samples. The average CTR of Zenotech

Laboratories Ltd. was 2.09 and standard deviation was 2.71. The CTR of Marksans Pharma Ltd. was also below the average of the selected samples except 2012-2013. In most of the years, the CTR of Moirepen Labs was below the average of 60.80 but in few years it was above in few years. In the first eight years of the syudy, the CTR of Morepen Lab was remarkably low. The cash conversion period of Morepen Labs in first eightr years was remarkably longer than that of the rest of the years of the study. The CTR of Hiran Orgochem Ltd. was always below the average of the selected samples of 60.80 except 2012-2013.

Therefore, the cash conversion period of Dr. Reddy's Laboratories, Strides Archolabs, Sun Pharmaceuticals, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd., Morepen Labs and Hiran Orgochem Ltd. was very long. It indicated that the cash was not properly managed in these companies during the entire study period. Moreover, these companies were followed no trend uniformly throughout the study period.

The cash conversion period of Aurobindo Pharmaceuticals, CIPLA, Biocon Pharmaceuticals, Lupin, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was very speedy but the cash conversion period of Zenotech Labopratories Ltd., Sequent Scientific Ltd., Ambalal Sarabhai Enterprises, Dr. Reddy's Laboratories, Strides Archolabs and Sun Pharmaceuticals was very slow. The cash conversion cycle of Piramal Enterprises, Cadila Health Care Ltd., Divis Labs, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Marksans Pharma Ltd., Morepen Labs and Hiran Orgochem Ltd. was neither slow nor fast.

#### **5.3.4. Creditors Turnover Ratio (CRTR):**

**Creditors Turnover Ratio (CRTR)** highlights credit and payment policy pursued by a firm. It is calculated dividing credit purchase by average creditors. An average creditors is the half of opening creditors and closing creditors. The quality of creditors influences the liquidity of a firm. It tests the speed with which cash are being paid to creditors. The liquidity of a firm is directly influenced by this speed. Thus, creditors' velocity indicates

the efficiency of payables management in a company. A high creditors turnover ratio reflects the promptness of creditors' payment i.e. shrinkage of liquidity and also proves inefficiency in credit management and a low creditors turnover ratio indicates longer average payment period i.e. high liquidity. There is no 'rule of thumb' which may be used as a norm to examine the creditors turnover ratio. Different standards are generally used for different industries in order to examine the creditors turnover ratio. The average creditor turnover ratio of the selected companies taken as a whole was 2.795.

Table – 5.3.4 displayed that the average CRTR of Lupin Ltd., Dr. Reddys' Laboratories, CIPLA, Aurobindo Pharmaceuticals Ltd., Cadila Health Care Ltd., Sun Pharmaceuticals Ltd., Biofil Chemicals, Parenteral Drugs (India) Ltd, Wanbury and Morepen Labs was above the average of the selected samples. The creditors payment of these companies were very prompt which indicated inefficient in CRTR during the period under study. These companies were managed their payables inefficiently. In Lupin Ltd, the CRTR was always above the average of the selected companies of 2.795 except in 2001-02 to 2005-06 and 2008-09. The average CRTR of Lupin was 2.93 with SD 0.48 during the study period. In DR. Reddy's Laboratories, the average CRTR was 2.90 with standard deviation 0.93. Since 1999-2000, the CRTR fluctuated marginally and followed no trend. In CIPLA, The CRTR was always above the average of the selected companies in all the years except in 2001-02 to 2005-06. In Aurobindo Pharmaceuticals, the average CRTR was 3.47 with standard deviation 0.97. In 1999-2000 to 2005-06, the CRTR of Aurobindo Pharmaceuticals followed a declining trend. In rest of the study period, it followed no trend. The mean value of CRTR of Aurobindo Pharmaceuticals was 3.47 with standard deviation 0.97. The CRTR of Cadila Health Care Ltd was always above the average of the selected samples except in 2002-03 to 2006-07 and 2011-12. In Sun Pharmaceuticals Ltd. the CRTR was maximum (7.48) in 2000-2001 and followed declining trend and reached to minimum (2.24) in 2007-08. The average CRTR maintained by Sun Pharmaceutical Ltd. was 4.38 with Standard deviation 1.54. The CRTR of Biofil Chemicals Ltd ranged between 14.10 in 2003-2004 (maximum) and 0.16 in 2009-2010 (minimum). Since 2004-05, the CRTR of Biofil Chemicals Ltd was very low which indicated delaying payment to the creditor for credit purchases and signified efficient payables management. In Parenteral Drugs (India) Ltd., the CRTR was above the average



of the selected samples in all the years except in 2011-12 & 2013-14. The mean CRTR and S.D of Parenteral Drugs (India) Ltd. were 3.95 and 1.20 respectively. The average CRTR maintained by Wanbury Ltd was 4.84 with S.D 6.29 which indicated that the ratios were widely fluctuated during the study period. In Morepen Labs, the CRTR was always below the average of the selected samples in all the years except in 1999 -2000, 2000-01, and 2002-03 to 2004-05. The CRTR of Morepen Labs fluctuated marginally and followed no trend during the period under study.

Therefore, CRTR of Lupin Ltd., Dr. Reddys' Laboratories, CIPLA, Aurobindo Pharmaceuticals Ltd., Cadila Health Care Ltd., Sun Pharmaceuticals Ltd., Biofil Chemicals, Parenteral Drugs (India) Ltd, Wanbury and Morepen Labs was not satisfactory during the study period. In most of the years, the creditors payment period of Lupin Ltd., Dr. Reddys' Laboratories, CIPLA, Aurobindo Pharmaceuticals Ltd., Cadila Health Care Ltd., Sun Pharmaceuticals Ltd., Biofil Chemicals and Pharmaceuticals Ltd., Parenteral Drugs (India) Ltd, Wanbury and Morepen Labs was very short and in few years it was below the average of the selected samples.

The average CRTR of Piramal Enterprises, Divis Labs, Strides Archolabs, Biocon Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Laboratories, Marksans Pharma, and Hiran Orgochen Ltd. was always below the average of the selected samples during the study period. It is indicated that these companies were enjoying longer credit facilities from creditors by credit purchase of raw materials. In Piramal Enterprises, the CRTR was always above the average of the selected samples of 2.795 except in 2010-11 to 2013-14. The average CRTR of Piramal enterprises was 2.72 with standard deviation 0.93. The mean value of CRTR of Divis Labs was 2.40 with SD 0.40 during the study period. The CRTR of Divis Labs was always below the average of the selected samples in all the years except in 2012-13 and 2013-14. Strides Archolabs had maintained its CRTR at a level below the average of the selected samples in all the years except in 1999-2000. In Biocon Pharmaceutical, the mean value of CRTR was 2.09 and its SD was 0.65. The CRTR of Biocon Pharmaceuticals fluctuated marginally and it had followed no trend during the study period. The CRTR of Kopran ranged between 4.46 (maximum) in 2000-01 and 1.21

(minimum) in 2007-08. Except 2000-01 and 2013-14, the CRTR of Kopran was always below the average of the selected samples. The average CRTR maintained by Ambalal Sarabhai Enterprises was 0.79 with its SD 0.42 during the period of study. The CRTR of Ambalal Sarabhai Enterprises was always very low as compared to the average of the selected samples. In Sequent Scientific Ltd., the CRTR was always very low as compared to the average of the selected samples in all the years except in 2003-04 to 2006-07 and 2008-09. The CRTR of Sequent Scientific fluctuated widely during the study period. In Zenotech Laboratories, the CRTR was always below the average of 2.795 in all the years except 2001-02, 2002-03 and 2008-09 to 2010-11 and had fluctuated randomly. The CRTR of Zenotech Laboratories had followed no trend during the study period. The mean value and SD of CRTR of Zenotech Laboratories were 2.21 and 2.26 respectively during the study period. the CRTR of Marksans Pharma fluctuated widely with a standard deviation 1.14 and had followed no trend. In the recent years, the CRTR was very low. The average CRTR of Hiran Orgochem Ltd was 2.10 with standard deviation 0.65 during the study period.

Therefore, CRTR of Piramal Enterprises, Divis Labs, Strides Archolabs, Biocon Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Laboratories, Marksans Pharma, and Hiran Orgochem Ltd. was always below the average of the selected samples. The payables management of these companies was comparatively satisfactory.

#### **5.3.5. Operating Cycle Period:**

It is known as cash conversion cycle. Operating cycle is the no. of days a company takes in realizing its inventories in cash. It equals the time taken in selling inventories plus the time taken in recovering cash from trade receivables. It is called Operating Cycle because this process of producing / purchasing inventories, selling them, recovering cash from customers, using that cash to purchase / produce inventories and so on is repeated as long as the company is in operations.

Net Operating Cycle = Days Inventory Outstanding (+) Days Sales Outstanding (-) Days Payables Outstanding.

Operating Cycle is a measure of operating efficiency and working capital management of a company. A short operating cycle is good as it tells that the company's cash is tied up for a shorter period. A longer operating cycle tells that the company's cash is blocked for a long period which is not good for the company. It is difficult to develop any standard ratio in this respect. It can be only judged by a particular firm or industry only from his past experience. There is no 'rule of thumb' which may be used as a norm to examine the cash turnover ratio. Different standards are generally used for different industries in order to examine the cash turnover ratio. The average cash turnover ratio of the selected companies taken as a whole was 153.21 days during the period under study.

From Table – 5.3.5 it was found that the operating cycle period of Dr. Reddy's Laboratories, Kopran, was always above the average of the selected samples. The operating cycle period of Dr. Reddy's Laboratories and Kopran was much longer which indicated that the company's cash is blocked for a long time. It is not good for the company. In Dr. Reddy's Laboratories, the average operating cycle period was 217.83 days with a standard deviation 49.35. The ratio followed an increasing trend since 2009-2010. In Kopran, the operating cycle period was always above the average of the selected samples. The average operating cycle period was 252.67 Days with its standard deviation 85.49. This ratio was inclining trend since 2010-2011.

Therefore, working capital management in respect of operating efficiency of Dr. Reddy's Laboratories and Kopran was inefficient during the entire study period.

The average operating cycle period of Lupin, CIPLA, Aurobindo Pharmaceuticals, Strides Archolabs, Sun Pharmaceuticals, Parenteral Drugs (India) Ltd., Zenotech Laboratories Ltd., Wanbury Ltd., Morepen Labs and Hiran Orgochem Ltd. was above the average of the selected samples. In Lupin, the operating cycle period was above the average of the selected samples except in 2003-2004 to 2004-2005 and 2007-2008 to 2013-2014. The operating cycle period of Lupin was declining trend since 2005-2006. The operating cycle period of CIPLA was below the average of the selected samples of 153.21 days except 2002-2003, 2005-2006 to 2012-2013. The mean operating cycle period of CIPLA was 161.15 days with its standard deviation 28.36. The operating cycle period of CIPLA followed a uniform trend throughout the study period. The average

operating cycle period of Aurobindo Pharmaceuticals was 209.88 days and its standard deviation was 63.91. In the first six years, the operating cycle period of Aurobindo pharmaceuticals was inclining trend and it followed an overall declining trend during the rest of the years of the study. The operating cycle period of Strides Archolabs was declining trend in the recent four years of the study. The operating cycle period of Strides Archolabs widely fluctuated during the study period. In Sun Pharmaceuticals the operating cycle period was above the average of the selected samples except 1999-2000, 2001-2002 to 2003-2004 and 2013-2014. In the recent year, the operating cycle period was negative which indicated that days payable outstanding was more than days inventory outstanding and days sales outstanding. The company can effectively cover its short term payments as they come due. In Parenteral Drugs (India) Ltd., the operating cycle periods was always above the average of the selected samples except 2004-2005 to 2006-2007 and 2010-2011. The ratio was inclining trend since 2009-2010. The average operating cycle period of Zenotech Laboratories Ltd. was above the average of the selected samples. In 1999-2000, 2002-2003, 2003-2004, 2005-2006, 2009-2010, 2010-2011, 2011-2012 and 2013-2014, the operating cycle period was above this average. The operating cycle period of Wanbury Ltd. was negative in the recent year. The mean value of operating cycle period of Wanbury Ltd. was 175.95 with a standard deviation 87.97. The ratio followed no trend entire the study period. In Morepen Labs, the operating cycle period was above the average of the selected samples except 2006-2007 to 2013-2014. The ratio was declining trend since 2004-2005. In the recent six years, it was negative. The average operating cycle period of Hiran Orgochem Ltd. was above the average of the selected samples except 1999-2000 to 2005-2006. The ratio followed an inclining trend since 2008-2009.

Therefore, working capital of Lupin, CIPLA, Aurobindo Pharmaceuticals, Strides Archolabs, Sun Pharmaceuticals, Parenteral Drugs (India) Ltd., Zenotech Laboratories Ltd., Wanbury Ltd., Morepen Labs and Hiran Orgochem Ltd. was not managed efficiently in most of the years. Working capital management was efficiently done in few years, when their operating cycle period was shorter.

The operating cycle period of Piramal Enterprises, Cadila Health Care Ltd., Divis Lab, Biocon Pharmaceutival, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd. and Marksans Pharma was always below the average of the selected samples. In Piramal Enterprises, the ratio was below the average of the selected samples except 2010-2011, 2012-2013 and 2013-2014. In the recent two years, the operating cycle period was the maximum. In Cadila Health Care Ltd., the ratio was always below the average except 1999-2000. The mean operating cycle period was 114.91 with its standard deviation 80.67. In Divis Lab, the operating cycle period was below the average of the selected samples except 2004-2005, 2005-2006 and 2008-2009 to 2013-2014. In Biocon Pharmaceuticals, operating cycle period was above in 2003-2004 and 2008-2009 to 2013-2014. The mean value of operating cycle period of Biofil Chemicals and Pharmaceuticals Ltd. was 39.71 days with its standard deviation 329.47. The ratio had a negative value during 2005-2006 to 2010-2011. The operating cycle period of Ambalal Sarabhai Enterprises was always below the average of the selected samples. It was always negative except 1999-2000 to 2001-2002 and 2003-2004. The operating cycle period of Sequent Scientific was below the average of the selected samples since 2009-2010. On an average, the company maintained its operating cycle period at 111.21 with its standard deviation 53.41. The operating cycle period of Marksans Pharma followed no trend during the entire study period.

Therefore, working capital of Piramal Enterprises, Cadila Health Care Ltd., Divis Lab, Biocon Pharmaceruicals, Biofil Chemicals and pharmaceuticals Ltd, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd. and Marksans Pharma was efficiently managed in respect of operating cycle period, during the period under study.

### **5.3.6. Summary of the Efficiency Analysis**

Inventory Turnover Ratio of Dr. Reddy's Laboratories, Piramal Enterprises, Cadila Health Care Ltd., Strides Archolabs, Biocon Pharmaceuticals Ltd., Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Wanbury Ltd. and Morepen Labs was above the average of the selected samples in most of the years of the study. The average inventory turnover ratio of Lupin, CIPLA, Aurobindo Pharmaceuticals, Divis Labs, Sun Pharmaceuticals, Kopran, Parenteral Drugs (India)

Ltd., Zenotech Laboratories, Marksans Pharma Ltd. and Hiran Orgochem Ltd. was below the average of the selected samples during the period under study. The average inventory turnover ratio was highest in Ambalal Sarabhai Enterprises followed by Biofil Chemicals and Pharmaceuticals Ltd., Wanbury Ltd., Piramal Enterprises, Sequent Scientific Ltd, Morepen Labs, Strides Archolabs, Dr. Reddy's Laboratories, Biocon Pharmaceuticals Ltd., Cadila Health Care Ltd., Sun Pharmaceuticals, Lupin, Hiran Orgochem Ltd., Parenteral Drugs (India) Ltd., Kopran, Aurobindo Pharmaceuticals, Marksans Pharma Ltd., Zenotech Laboratories Ltd., CIPLA, and Divis Labs .

The debtors collections of average DTR of Piramal Enterprises and Cadila Health Care Ltd. were very prompt as the average DTR of the selected companies were above the average of the selected samples. In most of the years, the debtors collection period of Lupin, Divis Labs, Biocon Pharmaceuticals, Kopran, Marksans Pharma Ltd. and Wanbury Ltd. was very long. The DTR of Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises and Strides Archolabs were remarkably longer. The DTR of rest of the companies was longer in few years and shorter in rest of the years of the study period.

Cash conversion cycle of Lupin, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Biocon Pharmaceuticals, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was very prompt in most of the years but very slow in rest of the years of the study. The cash conversion period of Dr. Reddy's Laboratories, Strides Archolabs, Sun Pharmaceuticals, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd., Morepen Labs and Hiran Orgochem Ltd. was very long. It indicated that the cash was not properly managed in these companies during the entire study period. Moreover, these companies were followed no trend uniformly throughout the study period.

The cash conversion period of Aurobindo Pharmaceuticals, CIPLA, Biocon Pharmaceuticals, Lupin, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was very speedy but the cash conversion period of Zenotech Laboratories Ltd., Sequent Scientific Ltd., Ambalal Sarabhai Enterprises, Dr. Reddy's Laboratories, Strides Archolabs and Sun

Pharmaceuticals was very slow. The cash conversion cycle of Piramal Enterprises, Cadila Health Care Ltd., Divis Labs, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Marksans Pharma Ltd., Morepen Labs and Hiran Orgochem Ltd. was neither slow nor fast.

Creditors Management of Lupin Ltd., Dr. Reddys' Laboratories, CIPLA, Aurobindo Pharmaceuticals Ltd., Cadila Health Care Ltd., Sun Pharmaceuticals Ltd., Biofil Chemicals, Parenteral Drugs (India) Ltd, Wanbury and Morepen Labs was not satisfactory during the study period. In most of the years, the creditors payment period of Lupin Ltd., Dr. Reddys' Laboratories, CIPLA, Aurobindo Pharmaceuticals Ltd., Cadila Health Care Ltd., Sun Pharmaceuticals Ltd., Biofil Chemicals and Pharmaceuticals Ltd., Parenteral Drugs (India) Ltd, Wanbury and Morepen Labs was very short and in few years it was below the average of the selected samples. Creditors Management of Piramal Enterprises, Divis Labs, Strides Archolabs, Biocon Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Laboratories, Marksans Pharma, and Hiran Orgochem Ltd. were always below the average of the selected samples. The payables management of these companies was comparatively satisfactory.

Operating capital cycle period of Lupin, CIPLA, Aurobindo Pharmaceuticals, Strides Archolabs, Sun Pharmaceuticals, Parenteral Drugs (India) Ltd., Zenotech Laboratories Ltd., Wanbury Ltd., Morepen Labs and Hiran Orgochem Ltd. was not managed efficiently in most of the years. Working capital cycle period was efficiently done in few years, when their operating cycle period was shorter. Working capital cycle period of Piramal Enterprises, Cadila Health Care Ltd., Divis Lab, Biocon Pharmaceruicals, Biofil Chemicals and pharmaceuticals Ltd, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd. and Marksans Pharma was efficiently managed in respect of operating cycle period, during the period under study.

#### **5.4. Component wise Ratio Analysis**

Companies must measure risk, develop, and then implement strategies for maintaining a positive cash flow. This strategy is called a working capital management strategy. The goal of an efficient working capital management strategy is to balance different

component of working capital so a company may meet its short-term obligations and maintain operating expenses. The major components of a working capital management strategy are inventories, debtors, cash and its equivalent, loans and advances and current liabilities.

#### **5.4.1. Current Assets to Total Assets Ratio (CATA):**

It indicates the extent of total funds invested for the purpose of working capital and throws light on the importance of current assets of a firm. Total assets include fixed assets and current assets as a whole taken together. Fixed assets include net block in fixed assets, capital work in progress and investment. Current assets include inventories, sundry debtors, cash and its equivalent and loans and advances. It should be worthwhile to observe that how much of that portion of total assets is occupied by the current assets, as current assets are essentially involved in forming working capital and also take an active part in increasing liquidity. Thus, this ratio should not be so large to ignore the application of the funds in fixed assets. Also care should be taken that principal investment of the firm should be in the operating items. This key ratio is important from the view point of liquidity. The higher CATA, the higher is liquidity and vice-versa. There is no 'rule of thumb' which may be used as a norm to examine the Current Assets to Total Assets Ratio. Different standards are generally used for different industries in order to examine the Current Assets to Total assets Ratio. The average Current Assets to Total Assets Ratio of the selected companies taken as a whole was 0.48 during the period under study.

From Table -5.4.1 it was reflected that the CATA of LUPIN, Dr. Reddy's Laboratories, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Divis Lab, Kopran, Sequent Scientific Ltd., Marksans Pharma Ltd., Wanbury Ltd. and Hiran Orgochem Ltd. was above the average of the selected samples. The current assets investment of these companies was very high. The liquidity position of these companies was also very high. Principal investment of these companies was in the operating items. In Lupin, average CATA was 0.56 with standard deviation 0.05. The ratio ranged between 0.46 and 0.66. The CATA of Dr. Reddy's Laboratories was inclining trend since 2009-2010. The ratio varied between 0.42 and 0.73. The mean value of CATA of Dr. Reddy's Laboratories



was 0.55 with a standard deviation 0.09. The CATA of CIPLA was declining trend since 2002-2003. The CATA was always above the average of the selected samples except 2012-2013 and 2013-2014. In Piramal enterprises, the CATA ranged between 0.25 and 0.82. The average CATA of Piramal Enterprises was 0.48 with its standard deviation 0.12. The CATA of Piramal Enterprises was declining trend since 2008-2009. In Aurobindo Pharmaceuticals, the CATA was always above the average of the selected samples. On an average, Piramal Enterprises maintained its CATA at 0.60 with its standard deviation 0.05. The CATA of Divis Lab had followed no trend during the period under study. The CATA fluctuated between 0.38 and 0.59. The mean CATA of Divis Lab was 0.48 with its standard deviation 0.04. The CATA of Divis Labs was always above the average of the selected samples except 1999-2000, 2000-2001 and 2009-2010 to 2011-2012. In Kopran, the average CATA was just above the average of the selected samples of 0.48. The CATA was inclining trend since 2004-2005. In Sequent Scientific, the CATA was declining trend throughout the entire study period. During 1999-2000 to 2001-2002, the CATA was nearest to 1 which indicated that current assets of the company occupied major portion out of total assets. The company possessed high liquidity in those years. The CATA of Marksans Pharma Ltd. was always above the average of the selected samples except 2000-2001 to 2003-2004 and 2008-2009. The average CATA of Marksans Pharma Ltd. was 0.49 with its standard deviation 0.12. The ratio varied between 0.34 (minimum) and 0.72 (maximum). The CATA of Wanbury Ltd. was always above the average of the selected samples except 1999-2000 to 2000-2001 and 2008-2009. The CATA of Wanbury Ltd. had followed no trend during the period under study. In Hiran Orgochem Ltd., the CATA was always above the average of the selected samples. The mean value of CATA of Hiran Orgochem was 0.72 with its standard deviation 0.07.

Therefore, the CATA of LUPIN, Dr. Reddy's Laboratories, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Divis Lab, Kopran, Sequent Scientific Ltd. Marksans Pharma Ltd, Wanbury Ltd. and Hiran Orgochem Ltd. was very high. The major portion of total assets of these companies was current assets. The liquidity position of these companies was very high.

The average CATA of Cadila Health Care Ltd., Strides Archo Labs, Sun Pharmaceuticals, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral Drugs(India) Ltd., Zenotech Ltd. and Morepen Labs was below the average of the selected samples. In Cadila Health Care Ltd., the CATA was always below the average of the selected samples of 0.48 except 1999-2000. On an average, Cadila Health Care Ltd. maintained its CATA at 0.41 with its standard deviation 0.07. It had followed no trend during the period under study. The CATA of Strides Archolabs fluctuated widely during the study period. The CATA of Strides Archolabs was always below the average of the selected samples of 0.48 except 2003-2004 and 2010-2011 to 2011-2012. In Sun Pharmaceuticals, the average CATA was 0.46. The CATA of Sun Pharmaceuticals was below the average of the selected samples since 2009-2010. The ratio ranged between 0.26 and 0.62 during the study period. The CATA of Sun Pharmaceuticals followed an overall declining trend during the entire study period. The CATA of Biocon Pharmaceuticals was below the average of the selected samples in 2001-2002 and 2004-2005 to 2008-2009. The mean value of CATA of Biocon Pharmaceuticals was 0.45 with standard deviation 0.11. The ratio followed an inclining trend since 2004-2005. In Biofil Chemicals and Pharmaceuticals Ltd., the CATA was always below the average of the selected samples except 2003-2004 and 2004-2005. The average CATA of Biofil Chemicals and Pharmaceuticals Ltd. was 0.25 with its standard deviation 0.14. The CATA of Biofil Chemicals and Pharmaceuticals Ltd. fluctuated widely during the entire study period. The CATA of Ambalal Sarabhai Enterprises followed a declining trend since 2007-2008. In the recent three years of the study, the CATA of Ambalal Sarabhai Enterprises was 0.25 which was much below the average of the selected samples of 0.48. The CATA of Parenteral Drugs ( India) Ltd. followed an overall declining trend throughout the entire study period. The ratio was very low during the recent four years of the study. In Zenotech ltd., the CATA was always below the average of the selected samples of 0.48 except 1999-2000 to 2003-2004 and 2007-2008. The average CATA of Zenotech Ltd. was 0.35 with standard deviation 0.21. The CATA of Zenotech Ltd. varied between 0.09 and 0.63. The CATA of Morepen Labs was always below the average of the selected samples. The value of CATA of Morepen Labs was 0.24 with a standard deviation 0.13. The ratio followed a declining trend during 1999-

2000 to 2008-2009 and followed an inclining trend during the rest of the years. Thus, it showed a mixed trend during the period under study.

Therefore, the CATA of Cadila Health Care Ltd., Strides Archolabs, Sun Pharmaceuticals, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral Drugs (India) Ltd., Zenotech Ltd. and Morepen Labs were very low as compared to the average of the selected samples during the period under study. Investment in current assets out of total assets of these companies was low. Liquidity position of these companies was lower.

Therefore, Piramal Enterprises, Divis Lab, Sun Pharmaceuticals, Biocon Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises and Parenteral Drugs (India) Ltd. were maintaining CATA at a level of average of the selected samples. LUPIN, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Sequent Scientific, Marksans Pharma Ltd., Wanbury Ltd. and Hiran Orgochem Ltd. were maintaining their CATA at a level above the average of the selected samples. Cadila Health Care Ltd., Strides Archo Labs, Biofil Chemicals and Pharmaceuticals Ltd., Zenotech Ltd and Morepen Labs maintaining their CATA at a level below the average of the selected samples.

#### **5.4.2. Inventory to Current Assets Ratio:**

Inventory to Current Assets Ratio defined as a method to show what portion of a company's inventories is financed from its available cash, is essential to business which hold inventory and survive on cash supplies. It is an indicator of a company's efficiency. In general, the lower the ratio, the higher the liquidity of a company is. A low value of inventory to current assets ratio means that the company is carrying low level of inventory in stock which is the indicator of high liquidity. However, it is indicated insufficient inventories which may affect the production at the time of emergency. A high value of Inventory to Current Assets Ratio means that the company is carrying too much inventory in stock. It is not favorable for management because excessive inventories can place a heavy burden on the cash resources of a company. Effective inventory management is essential. The goal is to have enough Inventories to complete orders. Excessive inventory creates additional costs such as paying for storage space and

inventory spoilage. A key issue for a company to improve its operation efficiency is to identify the optimum inventory levels and thus minimize the cost tied up in inventories. There is no 'rule of thumb' which may be used as a norm to examine the Inventory to Current Assets. Different standards are generally used for different industries in order to examine the Inventory to Current Assets. The average Inventory to Current Assets Ratio of the selected companies taken as a whole was 26.98% during the period under study.

From Table -5.4.2, it was found that the average Inventory to Current Assets ratio of LUPIN, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Marksans Pharma Ltd., Parenteral Drugs (India) Ltd., Morepen Labs and Hiran Orgochem Ltd. was above the average of the selected samples. These companies were carrying too much inventory in stock. Additional cost such as paying for storage space and inventory spoilage are very of these companies. Short term liquidity of these companies is very low. The mean inventory to current assets ratio of Lupin was 28.29% with standard deviation 7.16. The ratio followed an overall increasing trend. In CIPLA, the inventory to current assets ratio was always above the average of the selected samples. On an average, the Inventory to current assets Ratio of CIPLA was 39.56% with a standard deviation 5.98 during the period under study. The ratio followed an increasing trend since 2009-2010. In Aurobindo Pharmaceuticals, the Inventory to current assets ratio was always above the average of the selected samples except 2001-2002, 2002-2003, 2005-2006 and 2006-2007. In the recent five years, Aurobindo Pharmaceuticals maintained a uniform rate of inventory to current assets ratio. The average value of inventory to current assets ratio of Aurobindo Pharmaceuticals was 31 and its standard deviation was 5. In Cadila Health Care Ltd. also, the inventory to current assets ratio was always above the average of the selected samples except 1999-2000 and 2011-2012 to 2013-2014. In the recent three years, Cadila Health Care Ltd. maintained its inventory to current assets ratio at a uniform rate which was just below the average of the selected samples of 26.98%. The mean value of inventory to current assets ratio was 31.36 with a standard deviation 7.62. In Divis Lab, the inventory to current assets ratio was always above the average of the selected samples. On an average, the inventory to current assets ratio of Divis Lab was 50.75% with standard deviation 4.86 during the study period. The ratio fluctuated randomly and it had followed no trend. The mean inventory to current

assets ratio of Parenteral Drugs (India) Ltd. was 30.56 with its standard deviation 3.95. The ratio was always above the average of the selected samples of 26.98% except 2012-2013 to 2013-2014. The Inventory to current assets ratio of Marksans Pharma Ltd. had followed declining trend since 2008-2009. The inventory to current assets ratio of Marksans pharma Ltd. was always above the average of the selected samples of 26.98% except 2005-2006, 2010-2011 and 2013-2014. The Inventory to current assets ratio of Marksans Pharma Ltd. fluctuated widely with a standard deviation 10.91. The average inventory to current assets ratio of Marksans Pharma Ltd. was 35.90%. The inventory to current assets ratio of Morepen Labs was above the average of the selected samples since 2007-2008 but in rest of the years it was below the average of the selected samples of 26.98%. The mean inventory to current assets ratio of Morepen Labs was just above the average of the selected samples. The inventory to current assets ratio of Hiran Orgochem Ltd. was much above the average of the selected samples during 1999-2000 to 2009-2010 and was much below the average of the selected samples in the rest of the study period. On an average, Hiran Orgochem Ltd. maintained its inventory to current assets ratio at 50.57% with a standard deviation 25.10 during the period under study.

Therefore, the inventory to current assets ratio of LUPIN, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Marksans Pharma Ltd., Parenteral Drugs (India) Ltd., Morepen Labs and Hiran Orgochem Ltd. was very high. They were maintaining conservative policy for managing its inventory level. The average inventory to current assets ratio of Lupin, Biocon Pharmaceuticals and Morepen Labs was just equivalent to the average of the selected samples. The average inventory to current assets ratio of Divis Lab and Hiran Orgochem Ltd. was near about 50% which is very high. These two companies followed highly conservative policy for managing their inventory level.

The average inventory to current assets ratio of Dr. Reddy's Laboratories, Piramal Enterprises, Strides Archo Labs, Sun Pharmaceuticals, Biocon Pharmaceuticals, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd, Zenotech Ltd. and Wanbury Ltd. was always below the average of the selected samples of 26.98%. These companies followed aggressive policy in managing

their inventory to current assets level. The liquidity position of these companies was very high as the company carrying low level of inventory in its stock. However, low level of inventory may affect the production at the time of emergency or accepting additional order. The mean inventory to current assets ratio was 20.02 with standard deviation 4.40. The ratio had followed no trend during the study period. In Piramal Enterprises, the inventory turnover ratio was even below the 7% in the recent four years of the study. The average inventory to current assets ratio was 23.69% with a standard deviation 13.87. In Strides Archolabs, the Inventory to current assets ratio was always below the average of the selected samples of 26.98% except 1999-2000 to 2001-2002 and 2004-2005. The average inventory to current assets ratio was 18.36% with a standard deviation 9.27. The average inventory to current assets ratio of Sun Pharmaceuticals was 24.10%. The inventory to current assets ratio of Kopran was above the average of the selected samples in the initial two years but it was below the average of the selected samples in the rest of the years of the study. The average inventory to current assets ratio of Kopran was 22.84%. In Biofil Chemicals and Pharmaceuticals Ltd., average inventory to current assets ratio was 16.33 with a standard deviation 11.27. The ratio was much below the average of the selected samples of 26.98 in the recent five years of the study. In Ambalal Sarabhai Enterprises, inventory to current assets ratio was always below the average of the selected samples. The average inventory to current assets ratio was 10.38 with its standard deviation 6.32. In the recent years, the ratio was still declining. The inventory to current assets ratio of Sequent Scientific Ltd. was overall declining trend. The ratio was above the average of the selected samples since 2007-2008 but in the rest of the years, it was below the average of the selected samples of 26.98%. In the initial eight years of the study, the company followed aggressive policy in managing its inventory to current assets level but in the rest of the years, it was conservative motive. The mean inventory to current assets ratio was 18.09% with a standard deviation 13.78. The average inventory to current assets ratio of Zenotech Ltd. was 10.22% with standard deviation 10.14. The inventory to current assets ratio was always below the average of the selected samples of 26.98% except in the recent two years of the study and followed no trend during the study period. In Wanbury Ltd., the inventory to current assets ratio was always below the average of the selected samples except in 1999-2000 to 2002-2003. The ratio followed an

over declining trend throughout the study period. The mean value of inventory to current assets ratio of Wanbury Ltd. was 22.20 with a standard deviation 15.24.

Therefore, Dr. Reddy's Laboratories, Piramal Enterprises, Strides Archo Labs, Sun Pharmaceuticals, Biocon, Kopran, Biofil Chemicals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Ltd. and Wanbury Ltd. had maintained its inventory to current assets level at a rate below the average of the selected samples of 26.98%. Inventory to current assets ratio of Zenotech Ltd. was highly aggressive followed by Ambalal Sarabhai Enterprises, Biofil Chemicals and Pharmaceuticals Ltd., Sequent Scientific Ltd., Strides Archolabs, Dr. Reddy's Laboratories, Wanbury Ltd., Kopran, Sun Pharmaceuticals, and so on. The inventory to current assets ratio of Divis Lab and Hiran Orgochem Ltd. was highly conservative as compared to the selected samples. Lupin, Biocon Pharmaceuticals, maintained their average inventory to current assets ratio at a level of the average of the selected samples of 26.98%.

#### **5.4.3. Sundry debtors To Current Assets Ratio:**

It indicates sundry debtors as total current assets and throws light on the importance of sundry debtors of a firm. Accounts receivables must be collected in a timely manner. The sooner company received the money owed, the sooner it can be re-invested to earn a profit. It should be worthwhile to observe that how much of that portion of current assets is occupied by the sundry debtors as debtors are essentially involved in forming working capital and also take an active part in increasing liquidity. Funds that are employed in the business carry opportunity cost. Hence, if this ratio is very high, it means that credit policy of the company may not be sound; too much money was locked up in the debtors. If the money were not locked up in debtors, it could have been invested elsewhere to earn a return or may have been repaid to the financier. Higher the ratio, higher is the cost of carrying debtors. It is, therefore, desired that a company need to carry the least percentage of debtors as possible without affecting the sales volume. The lower the ratio, the higher is the liquidity and vice – versa. There is no 'rule of thumb' which may be used as a norm to examine the Sundry Debtors to Current assets ratio. Different standards are generally used for different industries in order to examine the Sundry Debtors to

current assets ratio. The average Sundry debtor to current assets ratio of the selected companies taken as a whole was 0.33 during the period under study.

From Table -5.4.3, it was found that the sundry debtors to current assets ratio of Lupin, Aurobindo Pharmaceuticals, Strides Archolabs, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Parenteral Drugs (India) Ltd., Zenotech Ltd. and Marksans Pharma Ltd. was above the average of the selected samples of 34.05%. These companies offered longer credit period to its customers as compared to the other selected samples. These companies locked up much money in debtors which could be reinvested to earn a return. Moreover, it is indicated that carrying cost of debtors was very high. There is a high possibility of being bad debt. In Lupin, the sundry debtors to current assets ratio was ranged between 25.72% (minimum) and 55.12% (maximum) with mean and standard deviation 40.46% and 7.18% respectively. The sundry debtors to current assets ratio of Lupin was always above the average of the selected samples of 34.05%. The ratio followed an inclining trend since 2005-2006. In the recent year, debtor's balance of Lupin was 45.67% of total current assets. The average sundry debtors to current assets ratio of Aurobindo Pharmaceuticals was 45.41% with its standard deviation 9.44% during the study period. The ratio was always above the average of the selected samples except 2006-2007. Since 2006-2007, the sundry debtors to current assets ratio were increasing trend. Moreover, in the recent year, 63% of the total current assets occupied debtors value. The sundry debtors to current assets ratio of Strides Archolabs was always above the average of the selected samples except 2007-2008, 2009-2010 to 2013-2014. In the recent four years, the ratio was much lower than that of the rest of the years. It indicated that the company had shifted its selling policy from credit to cash. The mean value of sundry debtors to current assets ratio of Strides Archolabs was 38.35% with a standard deviation 16.46%. The ratio fluctuated between 64.26% (maximum) and 11.95% (minimum). In Biocon Pharmaceuticals, the average sundry debtors to current assets ratio were 45.10% with a standard deviation 14.80%. The ratio followed a marginally declining trend during the study period. In Biofil Chemicals and Pharmaceuticals Ltd., the sundry debtors to current assets ratio were very high. The ratio ranged between 9.20% and 82.20%. Sundry debtors took the major part of current assets in 1999-2000 to 2000-2001, 2007-2008 to 2008-2009 and 2010-2011 to 2013-2014. The



average sundry debtors to current assets ratio was 51.83% with standard deviation 22.89%. In Biofil Chemicals and pharmaceuticals Ltd, the sundry debtors to current assets ratio were always above the average of the selected samples of 34.05% except 2003-2004 to 2004-2005 and 2009-2010. The sundry debtors to current assets ratio of Parenteral Drugs (India) Ltd. ranged between 40.60% and 59.98% with mean and standard deviation 48.30% and 6.46% respectively. It fluctuated marginally with no trend. In Zenotech Ltd., the sundry debtors to current assets ratio followed a declining trend. Initially the ratio starts with 99.3% and finally it step down to 36.92% in the ultimate year of the study. It indicated that company's sales had been converted from credit to sales. In the recent seven years, the ratio was very low. The sundry debtors to current assets ratio of Marksans Pharma Ltd. was always above the average of the selected samples except 2006-2007 to 2009-2010 and 2002-2003.

Dr. Reddy's Laboratories, Divis Lab, Wanbury Ltd. followed their sundry debtors to current assets ratio at a rate equivalent to the average of the selected samples of 34.05% during the period under study. The debtors value of these companies was neither high nor low as compared to the average of the selected samples during the study period. The average sundry debtors to current assets ratio of Dr. Reddy's Laboratories, Divis Lab, Wanbury Ltd. were 34.88%, 36.38% and 33.46% respectively.

The average Sundry Debtors to Current Assets ratio of CIPLA, Piramal Enterprises, Cadila Health Care Ltd., Sun Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Morepen Labs and Hiran Orgochem Ltd. was below the average of the selected samples of 34.05%. In CIPLA, the sundry debtors to current assets ratio varied between 17.07% (minimum) and 41.57% (maximum) with mean and standard deviation 31.51% and 6.23% respectively. The ratio fluctuated marginally and followed no trend. It is always below the average of the selected samples during 2003-2004 to 2008-2009. In the recent three years the ratio followed a marginally declining trend. In Piramal Enterprises, the sundry debtors to current assets ratio were always below the average of the selected samples of 34.05%. The ratio followed an overall declining trend since 2003-2004. In the recent three years the ratio was much below the average of the selected samples of 34.05%. Sundry debtors to current assets ratio of Cadila Health Care

Ltd. was always below the average of the selected samples of 34.05% except 2002-2003 to 2003-2004. It followed decreasing trend since 2008-2009. The mean sundry debtors to current assets ratio of Sun Pharmaceuticals was 23.80% with a standard deviation 9.51%. The ratio fluctuated between 8.92% and 40.46%. Kopran maintained its average sundry debtors to current assets ratio at 25.50% with a standard deviation 4.19%. The ratio fluctuated marginally with no trend. In Ambalal Sarabhai Enterprises, the sundry debtors to current assets ratio were always below the average of the selected samples of 34.05% except 2008-2009. The sundry debtors to current assets ratio of Sequent scientific Ltd. was almost zero in the initial years. In the recent six years, sundry debtors to current assets ratio were nearer to the average of the selected samples of 34.05%. On an average, sequent scientific Ltd. maintained their sundry debtors to current assets ratio at 25.14% with standard deviation 17.20%.

#### **5.4.4. Cash and Bank to Current Assets Ratio:**

It indicates cash as total current assets and throws light on the importance of cash of a firm. It measures the liquidity of a company. A high and increasing cash to current assets ratio generally a positive sign, showing the company's most liquid assets represent a larger portion of its current assets. A high volume of cash and cash equivalent means that the cash are idle which involved opportunity income forgone. Low cash to current assets may give better result but it has another affect to liquidity of the company. Therefore, both high and low value of cash to current ratio is not expected. The company should find an optimum level of cash to current assets. There is no 'rule of thumb' which may be used as a norm to examine the cash and bank to Current assets ratio. Different standards are generally used for different industries in order to examine the cash and bank to current assets ratio. The average cash and bank to current assets ratio of the selected companies taken as a whole was 4.32% during the period under study.

From Table – 5.4.4, it was displayed that in Strides Archelabs, Sun Pharmaceutical, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Ltd., Marksans Pharma Ltd., Morepen Labs and Hiran Orgochem Ltd., average cash and bank to current assets was above the average of the selected samples of 4.32% during the study period. it indicated that the liquidity position

of Strides Archelabs, Sun Pharmaceutical, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd, Zenotech Ltd, Marksans Pharma, Morepenlabs and Hiran Orgochem Ltd. was high as compared to the rest of the selected samples. Strides Archolab, the average cash and bank to current assets ratio was 4.69% with a standard deviation 4.82. In the recent year, the ratio was very high which indicated high liquidity position. But the company had a high volume of cash and bank which was remain idle, involved opportunity income forgone. The ratio showed an increasing trend since 2008-2009. In Sun Pharmaceutical, the cash and bank to current assets ratio was always below the average of the selected samples of 4.32% except 2001-2002, 2010-2011 to 2012-2013. The cash and bank to current assets of Sun Pharmaceutical was very low during 1999-2000 to 2009-2010 but very high during 2010-2011 to 2012-2013 which indicated that the company had shifted from aggressive to conservative policy in maintaining its cash and bank balance. The ratio followed a sharply decreasing trend since 2010-2011. In Biofil Chemicals and Pharmaceuticals Ltd., the cash and bank to current assets was always below the average of the selected samples of 4.32% except 2007-2008 to 2011-2012. The ratio followed no trend during the study period. The mean cash and bank to current assets ratio of Biofil Chemicals and Pharmaceuticals Ltd. was 6.37 with a standard deviation 14.11. In Ambalal Sarabhai Enterprises, the average cash and bank to current asset ratio was 4.96 with a standard deviation 3.41. In the recent three years of the study, the cash and bank to current assets ratio of Ambalal Sarabhai Enterprises was inclining. The ratio was below the average of the selected samples of 4.32% except 1999-2000, 2001-2002, 2005-2006, 2008-2009 to 2009-2010 and 2013-2014. In Sequent Scientific Ltd., the cash and bank top current assets ratio was always above the average of the selected samples of 4.32% except 1999-2000 to 2003-2004, 2008-2009 and 2010-2011. The ratio fluctuated widely and followed no trend. The cash and bank to current assets ratio of Zenotech Ltd. was always above the average of the selected samples of 4.32% except 1999-2000 to 2002-2003, 2005-2006 to 2009-20140. In the recent three years, the ratio was much above the average of the selected samples which indicated high liquidity but the company had not managed its cash and bank balance efficiently. In the initial four years of the study the cash and bank to current assets ratio was very low. In the recent three years of the study, the company's cash and

bank balance was highly conservative. The cash and bank to current asset ratio of Marksans Pharma Ltd. was much lower than the average of the selected samples of 4.32%. The company maintained its cash and bank in an aggressive approach. However, in 2007-2008, 2010-2011, 2011-2012 and 2013-2014, the cash and bank to current assets ratio was very high which indicated that the company followed a conservative approach in managing cash and bank. The average cash and bank to current assets ratio of Marksans Pharma Ltd. was 4.83 with a standard deviation of 6.12. In Morepen Labs, the cash and bank to current assets ratio was always above the average of the selected samples except 2007-2008, 2009-2010 and 2010-2011. The ratio followed an inclining trend since 2009-2010. The mean value of Hiran Orgochem Ltd. was 6.97 with a standard deviation of 16.03. In the recent two years, the ratio was very low which indicated a lower liquidity.

Therefore, the study revealed that Lupin, Sun Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Hiran Orgochem Ltd. followed a declining trend in cash and bank to current assets ratio in the recent years of the study but Strides Archolabs, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Ltd. and Morepen Labs followed an inclining trend in the recent years of the study.

The average cash and bank to current assets ratio of Lupin, Dr. Reddy's Laboratories, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Biocon Pharmaceuticals., Kopran, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was always below the average of the selected samples of 4.32% during the study period. These companies maintained a low level of cash and bank to their current assets which affected their short-term liquidity. They followed an aggressive policy in managing their cash and bank out of total current assets. A low level of cash and bank balance indicated that the cash and bank amount was not idle but the companies were not in a position to pay their short-term obligations due to a lack of liquid cash. In Lupin, cash and bank to current assets was always below the average of the selected samples and the mean and standard deviation of cash and bank to current assets was 1.23 and 0.68 respectively. The ratio followed a declining trend since 2009-2010 except 2013-2014. The cash and bank to current assets ratio of Dr. Reddy's Laboratories was always below the average of the selected samples except 2003-2004, 2012-2013 and 2013-2014. The ratio followed an inclining trend since

2009-2010. Lupin followed aggressive policy for maintaining cash and bank during 1999-2000 to 2011-2012 but followed conservative policy in the recent two years of the study. The mean value of cash and bank to current assets ratio was 3.23 with a standard deviation 3.36. In CIPLA, the cash and bank to current assets was always below the average of the selected samples of 4.32% with mean and standard deviation 1.20 and 0.61 respectively. The ratio fluctuated marginally during the study period. In Piramal Enterprises, the cash and bank to current assets ratio was always below the average of the selected samples of 4.32% except 1999-2000 to 2001-2002. The ratio followed an overall decreasing trend during the entire study period. The mean and standard deviation of cash and bank to current assets ratio of Piramal enterprises was 2.68 and 2.99 respectively. In Aurobindo Pharmaceuticals, the cash and bank to current assets ratio was always below the average of the selected samples of 4.32%. On an average, the cash and bank to current assets ratio of Aurobindo Pharmaceuticals was 1.48 with a standard deviation 1.40. In Cadila Health Care Ltd, the mean and standard deviation of cash and bank was 2.82 and 3.62 respectively. The cash and bank to current assets ratio was always below the average of the selected samples of 4.32% except 2000-2001, 2003-200 and 2011-2012. The ratio followed a declining trend in the recent three years. The mean and standard deviation of cash and bank to current assets ratio of Divis Lab was 1.21 and 0.55 respectively. The ratio had followed no trend and it fluctuated marginally during the study period. In Biocon Pharmaceuticals, the cash and bank to current assets ratio followed an overall inclining trend during the study period. The ratio was always below the average of the selected samples except 2009-2010, 2010-2011, 2012-2013 and 2013-2014. On an average, the cash and bank to current assets ratio maintained by Biocon Pharmaceuticals was 3.44 with a standard deviation 5.15. In the initial eleven years of the study, Biocon Pharmaceuticals had followed highly aggressive policy in maintaining cash and bank but in the rest of the years it had followed conservative policy in maintaining cash and bank. The mean value of cash and bank of Kopran was 0.90 with a standard deviation 1.13 against the average of the selected samples of 4.32%. The ratio followed an increasing trend since 2006-2007. In Parenteral Drugs (India) Ltd., the cash and bank to current assets ratio was always below the average of the selected samples of 4.32%. Initially, the ratio followed a declining trend but in the recent three years the ratio

followed an inclining trend. The mean value and standard deviation of cash and bank to current assets of Parenteral Drugs (India) Ltd. was 1.91 and 1.32 respectively. In Wanbury Ltd., the cash and bank to current assets ratio was always below the average of the selected samples of 4.32% except 2005-2006, 2008-2009, 2011-2012 and 2012-2013. In the initial six years of the study, the company had followed aggressive policy but in the recent three years it had followed conservative policy. On an average, the cash and bank to current assets ratio of Wanbury Ltd. was 2.51 with a standard deviation 3.10.

Therefore, cash and bank to current assets ratio of Lupin, Dr, Reddy's Laboratories, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Biocon Phasmaceuticals, Kopran, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was very low as compared to the average of the selected samples of 4.32%. In the recent years, Lupin, Cadila Health Care Ltd. Divis labs and Wanbury Ltd. followed declining trend but Dr. Reddy's Laboratories, Piramal Enterprises, Aurobindo Pharmaceuticals, Biocon Pharmaceuticals Ltd. had followed increasing trend.

#### **5.4.5. Loans and Advances to Current Assets:**

Loans and advances of pharmaceutical companies includes Loans and advances to related parties, Security deposit, Advance payment of Income Tax, Mat Credit Entitlement, Balance with govt. authorities(draw backs, custom duties receivables), loans to employee benefit trust, loan to employee and other loans and advances. It indicates loans and advances as total current assets and throws light on the importance of loans and advances of a firm. It measures the liquidity of a company. A high and increasing loans and advances to current assets ratio generally a positive sign, showing the company's most liquid assets represent a larger portion of its current assets. A high volume of loans and advances means that the loans and advances which involved opportunity income forgone. Low loans and advances to current assets may give better result but it has another affect to liquidity of the company. Therefore, both high and low value of loans and advances to current assets ratio is not expected. The company should find an optimum level of loans and advances to current assets. There is no 'rule of thumb' which may be used as a norm to examine the loans and advances to Current assets ratio. Different standards are generally used for different industries in order to examine the loans and advances to

current assets ratio. The average loans and advances to current assets ratio of the selected companies taken as a whole was 30.31% during the period under study.

From Table -5.4.5, it is found that the average loans and advances to current assets of Piramal Enterprises, Cadila Health Care Ltd., Strides Archolabs, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Wanbury and Hiran Orgochem were above the average of the selected companies. In Piramal Enterprises, it was found to be an increasing trend. The average loans and advances to current assets ratio was 0.50 with a standard deviation 25.26. In Cadila Health Care Ltd. the average loans and advances to current assets ratio was 32.56 with standard deviation 10.80. In Strides Archolabs, the ratio followed a mixed trend. The average loans and advances to current assets ratio of Kopran was 49.48 with a standard deviation 9.15. in Ambalal Sarabhai Enterprises, on an average 60.15% of the total current assets was invested in loans and advances. In Sequent Scientific Ltd. the loans and advances to current assets ratio followed a decreasing trend. The average loans and advances to current assets ratio of Wanbury was 40.68 with a standard deviation 15.46. In Hiran Orgochem, the ratio was 32.88, on an average with a standard deviation 25.70.

The average loans and advances to current assets ratio of Lupin Ltd., Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Divis Labs, Sun Pharma, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Parenteral Drugs (India) Ltd., Zenotech Laboratories, Marksans Pharma and Morepen Laboratories was always below the average of the selected samples. In Lupin Ltd., the average loans and advances to current assets ratio was 25.08 with a standard deviation 7.42. In Dr. Reddy's Laboratories, the average ratio was 24.48 and its standard deviation was 8.736. It had followed no trend during the study period. CIPLA ltd had followed a uniform trend in loans and advances to current assets ratio. The average loans and advances to current assets ratio of CIPLA Ltd. was 27.41 and its standard deviation was 6.56. In Aurobindo Pharmaceuticals Ltd., the loans and advances to current assets ratio fluctuated narrowly. The loans and advances to current assets ratio of Divis Labs was 10.50 with a standard deviation 2.71. in Biocon Pharmaceuticals, the loans and advances to current assets ratio was found to be marginally increasing trend. In Biofil chemicals and Pharmaceuticals

Ltd., the loans and advances to current assets ratio was always below the average of the selected samples. The average loans and advances to current assets ratio of Parenteral Drugs (India) Ltd was 17.56 with a standard deviation 10.69. In case of Zenotech Laboratories, on an average, 22.11% of the total current assets had been invested in loans and advances and its standard deviation was 22.66. The ratio fluctuated widely. Average loans and advances to current assets ratio of Marksans Pharma was 10.83 with a standard deviation 5.14. In Morepen Labs, the mean value of Loans and advances to current assets ratio was 24.71 with a standard deviation 14.05.

Piramal Enterprises, Cadila Health Care, Strides Archolabs, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Wanbury and Hiran Orgochem had invested very high amount of loans and advances and Lupin Ltd., Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Divis Labs, Sun Pharma, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Parenteral Drugs (India) Ltd., Zenotech Laboratories, Marksans Pharma and Morepen Laboratories had invested low amount of loans and advances of the total current assets during the study period.

#### **5.4.6. Summary of the Component wise ratio Analysis**

The CATA of LUPIN, Dr. Reddy's Laboratories, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Divis Lab, Kopran, Sequent Scientific Ltd. Marksans Pharma Ltd, Wanbury Ltd. and Hiran Orgochem Ltd. was very high. The major portion of total assets of these companies was current assets. The liquidity position of these companies was very high as compared to others selected companies.

The CATA of Cadila Health Care Ltd., Strides Archolabs, Sun Pharmaceuticals, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral Drugs (India) Ltd., Zenotech Ltd. and Morepen Labs were very low as compared to the average of the selected samples during the period under study. Investment in current assets out of total assets of these companies was low. Liquidity position in respect of CATA of these companies was lower. Piramal Enterprises, Divis Lab, Sun Pharmaceuticals, Biocon Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises and Parenteral Drugs (India) Ltd. were maintaining CATA at a level of



average of the selected samples. LUPIN, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Sequent Scientific, Marksans Pharma Ltd., Wanbury Ltd. and Hiran Orgochem Ltd. were maintaining their CATA at a level above the average of the selected samples. Cadila Health Care Ltd., Strides Archo Labs, Biofil Chemicals and Pharmaceuticals Ltd., Zenotech Ltd and Morepen Labs maintaining their CATA at a level below the average of the selected samples.

The inventory to current assets ratio of LUPIN, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Marksans Pharma Ltd., Parenteral Drugs (India) Ltd., Morepen Labs and Hiran Orgochem Ltd. was very high. They were maintaining conservative policy for managing its inventory level. The average inventory to current assets ratio of Lupin, Biocon Pharmaceuticals and Morepen Labs was just equivalent to the average of the selected samples. The average inventory to current assets ratio of Divis Lab and Hiran Orgochem Ltd. was near about 50% which is very high. These two companies followed highly conservative policy for managing their inventory level. Dr. Reddy's Laboratories, Piramal Enterprises, Strides Archo Labs, Sun Pharmaceuticals, Biocon, Kopran, Biofil Chemicals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Ltd. and Wanbury Ltd. had maintained its inventory to current assets level at a rate below the average of the selected samples of 26.98%. Inventory to current assets ratio of Zenotech Ltd. was highly aggressive followed by Ambalal Sarabhai Enterprises, Biofil Chemicals and Pharmaceuticals Ltd., Sequent Scientific Ltd., Strides Archolabs, Dr. Reddy's Laboratories, Wanbury Ltd., Kopran, Sun Pharmaceuticals, and so on. The inventory to current assets ratio of Divis Lab and Hiran Orgochem Ltd. was highly conservative as compared to the selected samples. Lupin, Biocon Pharmaceuticals, maintained their average inventory to current assets ratio at a level of the average of the selected samples of 26.98%.

Dr. Reddy's Laboratories, Divis Lab, Wanbury Ltd. followed their sundry debtors to current assets ratio at a rate equivalent to the average of the selected samples of 0.33 during the period under study. The debtors value of these companies was neither high nor low as compared to the average of the selected samples during the study period. The average sundry debtors to current assets ratio of Dr. Reddy's Laboratories, Divis Lab,

Wanbury Ltd. were 0.34, 0.35 and 0.33 respectively. The average Sundry Debtors to Current Assets ratio of CIPLA, Piramal Enterprises, Cadila Health Care Ltd., Sun Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Morepen Labs and Hiran Orgochem Ltd. was below the average of the selected samples of 0.33.

Lupin, Sun Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Hiran Orgochem Ltd. followed declining trend in cash and bank to current assets ratio in the recent years of the study but Strides Archolabs, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Ltd. and Morepen Labs followed an inclining trend in the recent years of the study. Cash and bank to current assets ratio of Dr, Reddy's Laboratories, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Biocon Phasrmaceuticals, Kopran, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was very low as compared to the average of the selected samples of 4.32%. In the recent years, Lupin, Cadila Health Care Ltd. Divis labs and Wanbury Ltd. followed declining trend but Dr. Reddy's Laboratories, Piramal Enterprises, Aurobindo Pharmaceuticals, Biocon Pharmaceuticals Ltd. followed increasing trend.

## **5.5. Financing Strategy Analysis.**

**A financing Strategy** is integral parts to an organization's strategic plan. It sets out how the organization plans to finance its overall operations to meet its objectives now and in the future. A financing strategy summarises targets and the actions to be taken over a three to five year period to achieve the targets. It also clearly states key policies which will guide those actions.

### **5.5.1. Working Capital Leverage (WCL):**

It concerned with the risk associated with the amount of working capital employed in relation to sales. If the working capital is varied relative to sales, the amount of risk that a firm assumes is also varied and the opportunity for gain and loss is increased. There is a positive relationship between risk and the rate of return. The more risk the more return is involved. If the level of working capital increased, the amount of risk is increased and the opportunity for gain or loss is also increased. A more conservative management therefore

employs more working capital for a given volume of sales than one which can and is willing to assume more risk. Rate of return is caused by changes in working capital in industries like Pharmaceuticals, chemicals etc., are much larger than those in the iron and steel, paper etc., industries.

Working capital leverage may be defined as the variability in return on capital employed due to variability in working capital (current assets). The impact of working capital management on return on capital employed may also be explained by working capital leverage. Working capital leverage helps to understand the reason why certain industries are much more responsive to working capital management. The higher the degree of leverage the higher is the risk and the lower the degree of leverage, the lower the risk. But at the same time it increases the possibility of higher rate of return on capital employed

It measures the sensitivity of operating profit due to variability in the level of working capital (gross) with the help of computing the working capital leverage of the company for all years under study. The formula used for calculating the working capital leverage is:

$WCL = WC / (TA + CWC)$ , where WCL= working capital leverage, WC= Working Capital investment, TA= Total Assets Investment and CWC= Change in working Capital Investment. In computing the WCL it has been assumed that the change in working capital investment in the previous year will be maintained in the current year also. The higher the degree of WCL, the greater is the risk and vice versa. But at the same time, it increases the possibility of higher ROI. The average working capital leverage of the selected samples is 0.39 during the study period.

From Table 5.5.1, it was found that the WCL of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran, Wanbury Ltd. and Hiran Orgochem Ltd. was always above the average of the selected samples of 0.39 throughout the study period. The WCL of Lupin varied between 0.56 and 0.37 with mean 0.46 and standard deviation 0.06. No trend was observed from WCL of Lupin during the study period. The average WCL of Dr. Reddy's Laboratories was 0.47 with a standard deviation 0.08. The

WCL of Dr. Reddy's Laboratories followed marginally inclining trend since 2009-2010. In CIPLA, WCL followed decreasing trend since 2009-2010. The mean WCL was 0.55 with standard deviation 0.09. The WCL of CIPLA varied between 0.34 and 0.65. The WCL of Aurobindo Pharmaceuticals followed a marginally declining trend since 2007-2008. The ratio varied between 0.66 and 0.34 with mean and standard deviation 0.50 and 0.07 respectively. In Kopran, the WCL was always above the average of the selected sample of 0.39 except 1999-2000 and 2004-2005 to 2009-2010. The ratio followed an inclining trend since 2005-2006. The mean WCL of Kopran was 0.40 with a standard deviation 0.07. The WCL of Wanbury Ltd. was always above the average of the selected samples of 0.39 except 2008-2009, and 2001-2012 to 2012-2013. The mean WCL of Wanbury Ltd. was 0.42 and its standard deviation was 0.05. The WCL of Wanbury Ltd. varied between 0.33 and 0.50 during the study period. In Hiran Orgochem Ltd., the WCL was always above the average of the selected samples of 0.39 except in the recent year. The mean value and standard deviation of WCL of Hiran Orgochem Ltd. was 1.34 and 2.57 respectively. The WCL of Hiran Orgochem Ltd. fluctuated between 0.36 and 10.63.

Therefore, WCL of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran, Wanbury Ltd. and Hiran Orgochem Ltd. maintained a higher degree of WCL as compared to the other selected samples. It indicated that Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran, Wanbury Ltd. and Hiran Orgochem Ltd. accepting the higher risk for possibility of higher return on investment. These companies are much more responsive to working capital management as compared to others.

The average WCL of Piramal Enterprises, Divis Labs, Strides Archolabs, Sun Pharmaceuticals, Biocon Pharmaceuticals, Parenteral Drugs (India) Ltd, Sequent Scientific Ltd. and Marksans Pharma Ltd. was above the average of the selected samples of 0.39. In Piramal Enterprises, the WCL was always above the average of the selected samples of 0.39 except 1999-2000 to 2001-2002, 2004-2005 to 2007-2008 and 2012-2013. The ratio fluctuated randomly and followed no trend during the study period. The mean and standard deviation of WCL of Piramal Enterprises was 0.47 and 0.30 respectively. It fluctuated between 0.26 and 1.48 during the study period. The WCL of

Divis Lab was always above the average of the selected samples of 0.39 except 1999-2000 to 2003-2004 and 2006-2007 to 2010-2011. The WCL of Divis Lab followed marginally inclining trend since 2006-2007. The mean value of WCL of Divis Lab was 0.36 with a standard deviation 0.07. The ratio followed marginally inclining trend since 2006-2007. The mean value of Strides Archolab was 0.36 with a standard deviation 0.18. The WCL ranged between 0.17 and 0.88 from 2008-2009, the WCL followed an inclining trend. In the recent year, the WCL of Strides Archolab was remarkably low. The average value of WCL of Sun Pharmaceuticals was 0.41 with a standard deviation 0.09. The WCL of Sun Pharmaceuticals varied between 0.26 and 0.55. In the recent five years of the study, the WCL of Sun Pharmaceuticals followed an inclining trend. The WCL of Sun pharmaceuticals was always above the average of the selected samples of 0.39 except 2003-2004 to 2004-2005 and 2009-2010 to 2013-2014. In Biocon Pharmaceuticals, the WCL was always below the average of the selected samples of 0.39 except 2003-2004 and 2010-2011 to 2013-2014. The WCL of Biocon Pharmaceuticals followed an increasing trend since 2007-2008. The mean and standard deviation of WCL of Biocon Pharmaceuticals was 0.31 and 0.10 respectively. The ratio fluctuated between 0.13 and 0.43. The WCL of Parenteral Drugs (India) Ltd. varied between 0.16 and 0.58. The mean value of WCL of Parenteral drugs (India) Ltd. was 0.39 with a standard deviation 0.15. The WCL of Parenteral Drugs (India) Ltd followed marginally declining trend since 2001-2002. The WCL of Parenteral drugs (India) Ltd. was below the average of the selected samples of 0.39 since 2008-2009 and followed a marginally declining trend. In Sequent Scientific Ltd., the WCL was always below the average of the selected samples of 0.39 except 1999-2000 to 2005-2006 and 2008-2009. The WCL of Sequent Scientific Ltd. followed an overall decreasing trend throughout the study period. In the recent five years, the WCL was remarkably low. On an average, Sequent Scientific Ltd. maintained its WCL at a level of 0.52 with a standard deviation 0.32. The mean value of WCL of Marksans Pharma Ltd. was 0.49 with a standard deviation 0.44. The WCL of Marksans Pharma Ltd. fluctuated widely with a no trend during the period under study.

Therefore, Piramal Enterprises, Divis Labs, Strides Archolabs, Sun Pharmaceuticals, Biocon Pharmaceuticals, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd. and Marksans Pharma Ltd. followed mixed strategy for managing their working capital. The

WCL of these companies followed a declining trend since 2008-2009. It indicated that they are avoiding taking high risk. They had shifted high risk with a high return policy in the initial years of the study to low risk with a low return policy since 2008-2009 to the recent year of the study. These companies are moderate responsive to working capital management as compared to others selected samples during the period under study.

The average WCL of Cadila Health Care Ltd., Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories, Morepen Labs was always below the average of the selected samples of 0.39 during the period under study. In Cadila Health Care Ltd., the WCL was always below the average of the selected samples 0.39 except 1999-2000 to 2000-2001. The ratio followed a marginally inclining trend since 2003-2004. The mean value and standard deviation of WCL was 0.31 and 0.14 respectively during the study period. The WCL ranged between 0.16 and 0.65. In Biofil Chemicals and Pharmaceuticals Ltd., WCL varied between -0.41 and 0.53. On an average, the WCL of Biofil Chemicals and Pharmaceuticals Ltd. was 0.05 with a standard deviation 0.25.

### **5.5.2. Trade off between risk and profitability:**

Trade off between risk and profitability can be made by calculating the risk factor. The analysis can be done through which it can be said about the policies adopted while managing the working capital of the company, Risk factor has been calculated. Risk factor can be calculated through the following formula:

$$R_k = \frac{(E_j + L_j) - A_j}{C_j}$$

Where,  $R_k$  = Risk factor,  $E_j$  = Equity + Retained Earnings,  $L_j$  = Long term Loans,  $A_j$  = Fixed Assets,  $C_j$  = Current Assets

The above formula helps to know about the financing of the current assets through long term funds after fixed assets are financed in full. Based on the above formula, following inferences can be drawn:

1. Value of R is zero or less would mean that the firm is using the aggressive policy and normally the profitability would be high.
2. Value of R is 1 or close to 1 would mean that the firm is using a conservative policy and the profitability would be low.

Under aggressive policy the firm opts for a lower level of working capital thereby investing in current assets at lower proportion to total assets. When a firm adopts this policy, the profitability is high but at higher risk of liquidity. In case of conservative policy, the firm adopts a conservative approach of having high proportion of working capital. The profitability is relatively low as the return on current assets is normally less. But ensuring good liquidity as the risk of meeting current obligations is reduced. Following analysis discloses the risk factor that has been ranked and is indicating the policy adopted by the company in various periods. The average risk factor of the selected samples during the study period was 0.46.

From Table 5.5.2, it was displayed that the risk in working capital financing of Dr Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd. was always above the average of the selected samples of 0.46 during the period under study. In Dr. Reddy's Laboratories, risk factor ranged between 0.48 and 0.80. The average risk factor was 0.67 with a standard deviation 0.09. From 2009-2010, the risk factor followed an inclining trend. It indicated that the company approaching to conservative policy from matching policy. In CIPLA, the mean value of risk factor was 0.58 with a standard deviation 0.08. It indicated that CIPLA followed a matching policy, on an average, in financing working capital. It had not followed trend during the period under study. The ratio ranged between 0.48 and 0.71 during the study period. In Aurobindo Pharmaceuticals, working capital had been financed 69% on an average from the long term sources and remaining 31% from short term sources. It indicated that Aurobindo Pharmaceuticals followed conservative policy for working capital financing. In Kopran, the risk factor ranged between 0.47 and 0.84 with mean 0.64 and standard deviation 0.10. The ratio had followed no trend. In Parenteral Drugs (India) Ltd. the ratio followed a declining trend since 2008-2009. It ranged between 0.48 and 0.76. On an

average, the risk factor of Parenteral drugs (India) Ltd. was 0.66 with a standard deviation 0.09.

Therefore, Dr Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd. were always above the average of the selected samples. It indicated that Dr Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd. used, on an average, 60% of long term funds to finance their current assets. These companies approached conservative policy for working capital financing.

The risk for financing working capital of Lupin, Piramal Enterprises, Cadila Health Care Ltd, Divis Lab, Strides Archolab, Sun Pharmaceuticals, Biocon Pharmaceuticals Ltd., Sequent Scientific Ltd., Wanbury Ltd. and Hiran Orgochem Ltd. was above the average risk for financing working capital of the selected samples of 0.46 during the study period. In Lupin, the risk for financing working capital was always above the average of the selected samples of 0.46 except 2003-2004, 2004-2005 and 2008-2009. The mean and standard deviation of risk for financing working capital was 0.60 and 0.10 respectively. The ratio followed a declining trend since 2008-2009. The ratio ranged between 0.41 and 0.76. The risk for financing working capital of Piramal Enterprises was above the average of the selected samples of 0.46 except 2001-2002 and 2003-2004 to 2005-2006. The ratio varied between 0.89 and 0.33 with mean and standard deviation 0.57 and 0.15 respectively. In the initial years, Piramal Enterprises moved conservative policy to aggressive and thereafter it moved to aggressive policy in financing working capital. In the recent year, the company followed matching policy in working capital management. The risk factor of Cadila Health Care Ltd. was always below the average of the selected samples of 0.46 except 1999-2000 to 2001-2002 and 2012-2013 to 2013-2014. On an average, Cadila Health Care Ltd. maintained risk for financing working capital at 0.46 with a standard deviation 0.16. It varied between 0.80 and 0.23 during the study period. In Divis lab, the ratio ranged between 0.43 and 0.67 with mean and standard deviation 0.56 and 0.08 respectively. Strides Archolabs Ltd. maintained its risk for financing working capital at 0.64, on an average. Since 2010-2011, the ratio followed sharply declining trend. The risk for financing working capital ratio of Sun Pharmaceuticals was



always above the average of the selected samples of 0.46 except 2003-2004 and 2013-2014. In the initial year, the ratio was very low (0.21). It followed a declining trend since 2010-2011. Biocon Pharmaceuticals Ltd. had maintained a matching policy during the recent six years of the study. The ratio ranged between 0.12 and 0.73 during the study period. Sequent Scientific Ltd. showed an overall declining trend during the entire study period. In the initial four years, Sequent Scientific Ltd. followed conservative policy. It had financed its entire current assets from the long term source after financing fixed assets in full. But, in the recent years, the ratio was very low which indicated that the company turned up to aggressive policy. Sequent Scientific Ltd. shifted its working capital financing policy from conservative to aggressive over the period of times during the study period. Wanbury Ltd. had also followed a declining trend during the entire study period. In the initial four years, the ratio was closer to 1 which indicated conservative policy adopted in working capital financing. But in the recent year, the ratio was closer to 0 which indicated aggressive policy. The ratio of Wanbury Ltd. varied between 0.01 and 0.89. In Hiran Orgochem Ltd., the ratio was always above the average of the selected samples except 2000-2001, 2001-2002, 2004-2005 and 2013-2014. The ratio fluctuated between 0.39 and 0.72. In the recent three years, the ratio followed a declining trend.

Therefore, Lupin, Piramal Enterprises, Cadila Health Care Ltd., Divis Lab, Strides Archolab Ltd., Sun Pharmaceuticals, Biocon Pharmaceuticals Ltd., Sequent Scientific Ltd., Wanbury Ltd. and Hiran Orgochem Ltd. adopted aggressive policy, conservative policy as well as matching policy in financing working capital in different years of the study.

Risk in Working capital financing of Biofil Chemicals and Pharmaceuticals Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd. and Morepen Labs was following a declining trend during the entire study period. In Biofil Chemicals and Pharmaceuticals Ltd., the ratio followed a declining trend during 1999-2000 to 2010-2011 and an increasing trend was observed in the rest of the years of the study. Initially, the company had followed conservative policy but in the recent years it followed aggressive policy for risk in financing working capital. The average risk in financing working capital of

Zenotech Ltd. (0.52) was above the average risk in financing working capital of the selected companies of 0.46. In the recent four years, the ratio was negative which indicated that the company had adopted highly aggressive policy and profitability in these years was very high. In Marksans Pharma Ltd., the average risk in working capital financing was 0.34 which was lower the average risk of the selected samples of 0.46. The ratio had followed no trend during the study period. In 199-2000 to 2003-2004, the ratio ranged between 0.38 to 0.55 which indicated matching policy in financing working capital but in 2004-2005 to 2009-2010, the ratio ranged between 0.72 and .087 which indicated aggressive policy in working capital financing. In the recent four years, the ratio started inclining trend. In Morepen Labs, the ratio followed an overall declining trend during the study period. in 2007-2008 to 2013-2014, the ratio was negative and it indicated aggressive policy in working capital financing but in 1999-2000 to 2006-2007, the company moved to matching policy from conservative policy in financing working capital.

Therefore, Biofil Chemicals and Pharmaceuticals Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd. and Morepen Labs had shifted their risk in financing working capital from conservative policy to aggressive policy during the study period.

The risk in financing working capital of Ambalal Sarabhai Enterprises was always below the average of the selected samples. The mean risk in working capital financing was -0.40 with a standard deviation 0.63. The ratio ranged between -1.83 to 0.29 which indicated that the company was always in aggressive policy in working capital financing during the study period.

Dr Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd. were always above the average of the selected samples. It indicated that Dr Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd. used, on an average, 60% of long term funds to finance their current assets. These companies approached conservative policy for working capital financing. Lupin, Piramal Enterprises, Cadila Health Care Ltd., Divis Lab, Strides Archolab, Sun Pharmaceuticals, Biocon Pharmaceuticals Ltd., Sequent Scientific Ltd, Wanbury Ltd. and Hiran Orgochem Ltd. adopted aggressive policy, conservative policy

as well as matching policy in financing working capital in different years of the study. Biofil Chemicals and Pharmaceuticals Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd. and Morepen Labs had shifted their risk in financing working capital from conservative policy to aggressive policy during the study period. Ambalal Sarabhai Enterprises was always in aggressive policy in working capital financing during the study period.

### **5.5.3. Summary of the Financing Strategy Analysis**

WCL of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran, Wanbury Ltd. and Hiran Orgochem Ltd. maintained a higher degree of WCL as compared to the other selected samples. It indicated that Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran, Wanbury Ltd. and Hiran Orgochem Ltd. accepting the higher risk for possibility of higher return on investment. These companies are much more responsive to working capital management as compared to others. Piramal Enterprises, Divis Labs, Strides Archolabs, Sun Pharmaceuticals, Biocon Pharmaceuticals, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd. and Marksans Pharma Ltd. followed mixed strategy for managing their working capital. The WCL of these companies followed a declining trend since 2008-2009. It indicated that they are avoiding taking high risk. They had shifted high risk with a high return policy in the initial years of the study to low risk with a low return policy since 2008-2009 to the recent year of the study. These companies are moderate responsive to working capital management as compared to others selected samples during the period under study. The average WCL of Cadila Health Care Ltd., Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories, Morepen Labs was always below the average of the selected samples of 0.39 during the period under study.

Dr Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd. were always above the average of the selected samples. It indicated that Dr Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd. used, on an average, 60% of long term funds to finance their current assets. These companies approached conservative policy for working capital financing. Lupin, Piramal Enterprises, Cadila Health Care Ltd., Divis Lab, Strides

Archolab, Sun Pharmaceuticals, Biocon Pharmaceuticals Ltd., Sequent Scientific Ltd, Wanbury Ltd. and Hiran Orgochem Ltd. adopted aggressive policy, conservative policy as well as matching policy in financing working capital in different years of the study. Biofil Chemicals and Pharmaceuticals Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd. and Morepen Labs had shifted their risk in financing working capital from conservative policy to aggressive policy during the study period. Ambalal Sarabhai Enterprises was always in aggressive policy in working capital financing during the study period.

## **5.6. LIQUIDITY RANKING ANALYSIS BY USING MOTAAL TEST**

The liquidity position of a firm is largely affected by the composition of working capital. Any considerable shifts from the relatively more current assets to the relatively less current assets and vice versa will materially affect a firm's ability to pay its current debts promptly. To determine the liquidity position of the selected companies more precisely, a comprehensive test known as Motaals test has been done. In this test, Inventory to Current Assets ratio, Debtors to Current Assets ratio, Cash and bank to Current Assets ratio and Loans and Advances to Current assets ratio (each expressed as a fraction) are taken into consideration. For Inventory to Current assets ratio, lower the ratio, the more favorable is the liquidity position and vice versa; ranking has been done accordingly. For Debtors to Current Assets ratio, Cash and bank to Current Assets ratio and Loans and Advances to Current Assets ratio, higher the ratio, the more favorable is the position and ranking has been done accordingly. Ultimate ranking has been done on the basis of points; lower the points scored the more favorable are the position and vice versa. All these ranking point have been converted into value on the principle that higher the ranking point scored the more unfavorable and vice versa. All these values have been plotted in the graph and a linear trend line has been drawn to forecast the trend of liquidity of the selected samples.

From Table -5.6.1, it was observed that in case of LUPIN the most sound liquidity position was in the year 1999-2000 and it was followed by 2001-2002, 2002-2003, 2000-2001, 2013-2014, 2009-2010, 2010-2011, 2011-2012, 2004-2005, 2012-2013, 2003-2004, 2005-2006, 2006-2007, 2008-2009 and 2007-2008 respectively. The linear trend

line forecasted a declining trend in liquidity performance (as reflected in Figure-5.6.1) of LUPIN during the study period.

From Table -5.6.2, it was observed that in case of Dr. Reddy's Laboratories registered the most sound liquidity position in the year 2013-2014 and it was followed by 2006-2007, 2012-2013, 2008-2009, 2007-2008, 2010-2011, 1999-2000, 2003-2004, 2000-2001, 2005-2006, 2001-2002, 2004-2005, 2009-2010, 2011-2012 and 2012-2013 respectively. The linear trend line forecasted an inclining trend in liquidity performance (as reflected in Figure-5.6.2) of Dr. Reddy's Laboratories during the study period.

From Table -5.6.3, it was observed that in case of CIPLA registered the most sound liquidity position in the year 2007-2008 and it was followed by 2006-2007, 2008-2009, 2009-2010, 2010-2011, 2005-2006, 2011-2012, 2001-2002, 2003-2004, 2000-2001, 2004-2005, 1999-2000, 2012-2013, 2013-2014 and 2002-2003 respectively. The linear trend line forecasted an inclining trend in liquidity performance (as reflected in Figure-5.6.3) of CIPLA during the study period

From Table -5.6.4, it was observed that Piramal Enterprises registered the most sound liquidity position in the year 2006-2007 and it was followed by 2002-2003, 2007-2008, 2009-2010, 1999-2000, 2010-2011, 2013-2014, 2008-2009, 2001-2002, 2009-2010, 2011-2012, 1999-2000, 2003-2004, 2005-2006 and 2004-2005 respectively. The linear trend line forecasted a declining trend in liquidity performance (as reflected in Figure-5.6.4) of Piramal Enterprises during the study period.

From Table -5.6.5, it was observed that in case of Aurobindo Pharmaceuticals registered the most sound liquidity position in the year 2008-2009 and it was followed by 2002-2003, 2003-2004, 2001-2002, 2005-2006, 2006-2007, 1999-2000, 2004-2005, 2012-2013, 2013-2014, 2007-2008, 2009-2010, 2011-2012, 2010-2011 and 2000-2001 respectively. The linear trend line forecasted a declining trend in liquidity performance (as reflected in Figure-5.6.5) of Aurobindo Pharmaceuticals during the study period.

From Table -5.6.6, it was observed that in case of Cadila Health Care Ltd. registered the most sound liquidity position in the year 2011-2012 and it was followed by 2012-2013, 2013-2014, 2010-2011, 2009-2010, 2007-2008, 2001-2002, 2000-2001, 2008-2009,

2003-2004, 2006-2007, 1999-2000, 2005-2006, 2002-2003 and 2004-2005 respectively. The linear trend line forecasted an inclining trend in liquidity performance (as reflected in Figure-5.6.6) of Cadila Health Care Ltd. during the study period.

From Table -5.6.7, it was observed that Divis Labs. registered the most sound liquidity position in the year 2013-2014 and it was followed by 2007-2008, 2001-2002, 2006-2007, 2002-2003, 2011-2012, 2012-2013, 2008-2009, 2010-2011, 2004-2005, 2003-2004, 2005-2006, 1999-2000, 2000-2001 and 2009-2010 respectively. The linear trend line forecasted an inclining trend in liquidity performance (as reflected in Figure-5.6.7) of Divis Labs during the study period.

From Table -5.6.8, it was observed that Strides Archolabs registered the most sound liquidity position in the year 2007-2008 and it was followed by 2010-2011, 2011-2012, 2013-2014, 2009-2010, 2002-2003, 2012-2013, 2003-2004, 2004-2005, 2001-2002, 2006-2007, 1999-2000, 2005-2006, 2008-2009 and 2000-2001 respectively. The linear trend line forecasted an inclining trend in liquidity performance (as reflected in Figure-5.6.8) of Strides Archolabs during the study period.

From Table -5.6.9, it was observed that Sun Pharmaceuticals registered the most sound liquidity position in the year 2012-2013 and it was followed by 1999-2000, 2011-2012, 2013-2014, 2007-2008, 2001-2002, 2010-2011, 2000-2001, 2009-2010, 2004-2005, 2002-2003, 2003-2004, 2006-2007, 2005-2006 and 2008-2009 respectively. The linear trend line forecasted an inclining trend in liquidity performance (as reflected in Figure-5.6.9) of Sun Pharmaceuticals during the study period.

From Table -5.6.10, it was observed that Biocon Pharmaceuticals registered the most sound liquidity position in the year 2013-2014 and it was followed by 2009-2010, 2010-2011, 2011-2012, 2004-2005, 2012-2013, 2008-2009, 2001-2002, 2007-2008, 2006-2007, 2005-2006, 1999-2000, 2000-2001, 2003-2004 and 2002-2003 respectively. The linear trend line forecasted an inclining trend in liquidity performance (as reflected in Figure-5.6.10) of Biocon Pharmaceuticals during the study period.

From Table-5.6.11, it was observed that Kopran registered the most sound liquidity position in the year 2003-2004 and it was followed by 2012-2013, 2008-2009, 2006-

2007, 2011-2012, 2007-2008, 2009-2010, 2013-2014, 2002-2003, 2005-2006, 2000-2001, 2004-2005, 2010-2011, 2001-2002 and 1999-2000 respectively. The linear trend line forecasted an increasing trend in liquidity performance (as reflected in Figure 5.6.11) of Kopran during the study period.

From Table -5.6.12, it was observed that Biofil Chemicals and Pharmaceuticals Ltd. registered the most sound liquidity position in the year 2010-2011 and it was followed by 2009-2010, 2011-2012, 2007-2008, 2012-2013, 2013-2014, 2008-2009, 2006-2007, 2005-2006, 2003-2004, 2001-2002, 1999-2000, 2002-2003, 2004-2005, and 2000-2001 respectively. The linear trend line forecasted an inclining trend in liquidity performance (as reflected in Figure-5.6.12) of Biofil Chemicals and Pharmaceuticals Ltd. during the study period.

From Table -5.6.13, it was observed that Ambalal Sarabhai Enterprises registered the most sound liquidity position in the year 2013-2014 and it was followed by 2010-2011, 2007-2008, 2008-2009, 2009-2010, 2005-2006, 2011-2012, 2012-2013, 2006-2007, 2001-2002, 2002-2003, 2004-2005, 1999-2000, 2003-2004, and 2000-2001 respectively. The linear trend line forecasted an increasing trend in liquidity performance (as reflected in Figure-5.6.13) of Ambalal Sarabhai Enterprises during the study period.

From Table -5.6.14, it was observed that Parenteral Drugs (India) Ltd. registered the most sound liquidity position in the year 2012-2013 and it was followed by 2001-2002, 2011-2012, 1999-2000, 2000-2001, 2009-2010, 2010-2011, 2007-2008, 2005-2006, 2013-2014, 2006-2007, 2008-2009, 2004-2005, 2002-2003, 2003-2004, and 2012-2013 respectively. The linear trend line forecasted a fluctuating trend in liquidity performance (as reflected in Figure-5.6.14) of Parenteral Drugs (India) Ltd. during the study period. In the initial three years of the study, the liquidity position was high. It started declining during 2002-2003 to 2004-2005. However, it followed an increasing trend during 2009-2010 to 2012-2013, in the recent year, it started declining.

From Table -5.6.15, it was observed that Sequent Scientific Ltd. registered the most sound liquidity position in the year 2004-2005 and it was followed by 2003-2004, 2011-2012, 2006-2007, 2005-2006, 1999-2000, 2000-2001, 2001-2002, 2002-2003, 2007-

2008, 2009-2010, 2008-2009, 2012-2013 and 2013-2014 respectively. The linear trend line forecasted a decreasing trend in liquidity performance (as reflected in Figure-5.6.15) of Sequent Scientific Ltd. during the study period.

From Table -5.6.16, it was observed that Zenotech Laboratories registered the most sound liquidity position in the year 2011-2012 and it was followed by 2010-2011, 2002-2003, 2001-2002, 2003-2004, 1999-2000, 2006-2007, 2000-2001, 2004-2005, 2012-2013, 2005-2006, 2013-2014, 2009-2010, 2008-2009 and 2007-2008 respectively. The linear trend line forecasted a decreasing trend in liquidity performance (as reflected in Figure-5.6.16) of Zenotech Laboratories during the study period.

From Table -5.6.17, it was observed that Marksans Pharma Ltd. registered the most sound liquidity position in the year 2013-2014 and it was followed by 2010-2011, 2000-2001, 2011-2012, 2012-2013, 2007-2008, 2009-2010, 2001-2002, 2004-2005, 2003-2004, 2005-2006, 1999-2000, 2008-2009, 2006-2007 and 2002-2003 respectively. The linear trend line forecasted an increasing trend in liquidity performance (as reflected in Figure-5.6.17) of Marksans Pharma Ltd. during the study period.

From Table -5.6.18, it was observed that Wanbury Ltd. registered the most sound liquidity position in the year 2005-2006 and it was followed by 2012-2013, 2013-2014, 2008-2009, 2011-2012, 2009-2010, 2007-2008, 2010-2011, 2004-2005, 2001-2002, 2003-2004, 1999-2000, 2002-2003, 2000-2001 and 2000-2001 respectively. The linear trend line forecasted an increasing trend in liquidity performance (as reflected in Figure-5.6.18) of Wanbury Ltd. during the study period.

From Table -5.6.19, it was observed that Morepen Labs registered the most sound liquidity position in the year 2003-2004 and it was followed by 2004-2005, 2002-2003, 2005-2006, 2001-2002, 1999-2000, 2000-2001, 2006-2007, 2013-2014, 2012-2013, 2011-2012, 2010-2011, 2007-2008 and 2009-2010 respectively. The linear trend line forecasted a mixed trend in liquidity performance (as reflected in Figure-5.6.19) of Morepen Labs. during the study period.

From Table -5.6.20, it was observed that Hiran Orgochem Ltd. registered the most sound liquidity position in the year 2010-2011 and it was followed by 2011-2012, 2009-2010,



2007-2008, 2004-2005, 2003-2004, 2002-2003, 2006-2007, 2005-2006, 2000-2001, 2008-2009, 2001-2002, 2013-2014 and 1999-2000 respectively. The linear trend line forecasted a mixed trend in liquidity performance (as reflected in Figure-5.6.20) of Hiran Orgochem Ltd. during the study period.

The study revealed that the liquidity in most of the selected companies had been increased during the study period.

## **5.7. FACTOR ANALYSAIS OF LIQUIDITY, PROFITABILITY AND EFFICIENCY POSITION OF THE SELECTED PHARMACEUTICAL COMPANIES**

In the above section the pharmaceutical companies' liquidity, profitability and efficiency position have been analysed by using the relevant ratios for each of these positions and the performance of the selected pharmaceutical companies was assessed on the basis of these positions. But it can be safely said that not all these three factors with their constituent ratios were not equally important in determining performance of the selected pharmaceutical companies. Someone 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 efficiency ratio through factor analysis.

### **5.7.1 LUPIN**

#### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 93.37% of the total sampling variations of the three related ratios and its Eigen value is 1.605. As the Eigen value of the first factor is only greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 43.225, which found to be significant at 1% probability level; this implies

that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first principal component the contributions of the first basic two ratios are more than 46.9%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.605	93.37	.533 (Current Ratio)
2	.102	5.94	.469 (Absolute liquid ratio)
3	.0118	.69	.010 (Liquid ratio)

Bartlett's test of sphericity is estimated to be 43.225\*

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, cash turnover ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 44.358% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 15.984, which is found to be significant at 1% probability level, implying that the principal component analysis is required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.218	44.358	-.598 (Inventory Turnover ratio)
2	1.097	21.942	.344 (Debtor Turnover ratio)
3	.874	17.487	.721 (Cash Turnover Ratio)
4	.623	12.452	-.665 (Creditor Turnover ratio)
5	.188	3.761	.924 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 15.984\*

In the constructed principal component for efficiency factor, the contribution of the basic variables is more than 34% (being positive or negative according to their nature).

**Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett’s test of sphericity is estimated to be 17.606, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.173	72.425	.720 (Gross profit Ratio)
2	.664	22.142	.875 (Net profit ratio)
3	.163	5.143	.943 (Return on capital employed)

Bartlett’s test of sphericity is estimated to be 17.606\*

On the basis of Kaiser’s criterion (Eigen value > 1) first principle component has been selected and it explains 72.425% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and in this principal component contributions of the basic variables are not less than 72% (see the last column of the table).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .198^{***} \\ [F=2.732]$$

$$GP = 19.720^{**} + 2.79^{***}F_1 - 1.733F_2 \\ (9.058) \quad (1.38) \quad (1.783)$$

$$DW = 1.329$$

## 5.7.2 Dr Reddy's Laboratories

### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 87.558% of the total sampling variations of the three related ratios and its Eigen value is 2.627. As the Eigen value of the first factor is only greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 60.248, which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first principal component the contributions of the basic three ratios are not less than 86%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.627	87.558	.949 (Current Ratio)
2	.366	12.197	.988 (Absolute liquid ratio)
3	.007	.245	.866 (Liquid ratio)

Bartlett's test of sphericity is estimated to be 60.248\*

### Efficiency Factor:

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, cash turnover ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 38.739% of the sample variations of the related basic five variables (see the

following table). Further, Bartlett's test of sphericity is estimated to be 11.753, which is found to be not significant up to 10% probability level, implying that the principal component analysis is here not required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.937	38.739	-.359 (Inventory Turnover ratio)
2	1.298	25.953	-.229 (Debtor Turnover ratio)
3	.966	19.320	.422 (Cash Turnover Ratio)
4	.507	10.143	.067 (Creditor Turnover ratio)
5	.292	5.845	.390 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 11.753<sup>a</sup>

In the constructed principal component for efficiency factor, the contributions of three basic variables are more than 42% (Being positive or negative in their nature).

#### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 50.161, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.783	92.783	.986 (Gross profit Ratio)
2	.185	6.169	.933 (Net profit ratio)
3	.031	1.048	.965 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 50.161\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 98.6% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and this principal component contribution of the basic variables are more than 93% (see the last column of the table).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .110 \\ [F=1.861]$$

$$\text{GP} = 17.340 + 4.02F_1 - 2.21F_2 \\ (17.538) \quad (2.375) \quad (5.152)$$

$$\text{DW} = 1.658$$

### 5.7.3 CIPLA

#### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 68.348% of the total sampling variations of the three related ratios and its Eigen value is 2.050. As the Eigen value of only first factor is greater than one, so according to Kaiser's criterion 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 23.015, which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic three ratios are more than 50%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.050	68.348	.929 (Current Ratio)
2	.864	28.816	.966 (Liquid ratio)
3	.085	2.836	.507 (Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 23.015\*

### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 8.460, which is found to be significant at 5% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.949	64.954	.764 (Gross profit Ratio)
2	.668	22.275	.876 (Net profit ratio)
3	.383	12.771	.773 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 8.460\*\*

On the basis of Kaiser's criterion (Eigen value > 1), the first two basic variables but the Eigen values of the first basic variables are the highest. Therefore, first principal component has been selected and it explains 46.558% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and this principal component contribution of the basic variables are more than 76% (see the last column of the table).

### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, cash turnover ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion

(Eigen value >1), first principal component has been selected as efficiency factor which represents 45.189% of the sample variations of the related basic four variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 40.888, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.259	45.189	.831 (Inventory Turnover ratio)
2	1.734	34.684	.312 (Debtor Turnover ratio)
3	.759	15.188	-.256 (cash turnover ratio)
4	.199	3.973	.905 ( Creditors Turnover ratio)
5	.04	.967	-.249 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 40.888\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are less than 24%.

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .64^{**}$$

$$[F = .972]$$

$$\text{GP} = 22.658^* + 1.183F_1 - 1.587F_2$$

$$(3.938) \quad (.877) \quad (1.631)$$

$$\text{DW} = 2.394$$



#### 5.7.4 Piramal Enterprises

##### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 68.154% of the total sampling variations of the three related ratios and its Eigen value is 2.045. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 24.839 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic two ratios are more than 65% (being negative according to its nature)

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.045	68.154	.980 (Current Ratio)
2	.884	29.450	-.653 (Liquid Ratio)
3	.071	2.396	.810 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 24.839\*

##### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 23.643, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.053	68.424	.921 (Gross profit Ratio)
2	.867	28.892	-.513 (Net profit ratio)
3	.080	2.684	.970 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 23.643\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 68.424% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 51.3%, being positive or negative according to their nature. (See the last column of the table).

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, cash turnover ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 52.618% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 22.780, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.631	52.618	.550 (Inventory Turnover ratio)
2	1.148	22.967	.846 (Debtor Turnover ratio)
3	.677	13.549	.813 (cash turnover ratio)
4	.352	7.033	.713 ( Creditors Turnover ratio)
5	.192	3.834	.806 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 22.780\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 55%

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity ( $F_1$ ) and efficiency ( $F_2$ ). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .443^{**} \\ [F= 6.561]$$

$$\text{GP} = -2.475 - 3.091 * F_1 + 4.783^{***} F_2 \\ (12.558) \quad (.886) \quad (2.395)$$

$$\text{DW} = 1.608$$

### 5.7.5 Aurobindo Pharmaceuticals

#### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 91.635% of the total sampling variations of the three related ratios and its Eigen value is 2.749. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 45.986 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic three ratios are more than 92%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.749	91.635	.969 (Current Ratio)
2	.212	7.058	.977 (Liquid Ratio)
3	.039	1.307	.925 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 45.986\*

### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 5.981, which is found not to be significant up to 10% probability level and so principal component analysis may not be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.645	54.845	.893 (Gross profit Ratio)
2	.972	32.411	-.273 (Net profit ratio)
3	.382	12.743	.880 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 5.981<sup>a</sup>

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 54.845% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 27% , being positive or negative according to their nature. (See the last column of the table).

### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, cash turnover ratio, creditor turnover ratio

and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 64.786% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 54.705, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	3.239	64.786	.818 (Inventory Turnover ratio)
2	1.037	20.749	.864 (Debtor Turnover ratio)
3	.116	11.368	.148 (Cash Turnover ratio)
4	3.239	2.322	.962 ( Creditors Turnover ratio)
5	1.037	.775	.936 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 54.705\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are not more than 96%

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .48^* \\ [F=2 \ .942]$$

$$\text{GP} = 14.225 + 1.848^* F_1 - 1.341 F_2 \\ (12.949) \quad (2.685) \quad (1.433)$$

$$\text{DW} = 1.532$$

### 5.7.6 Cadila Healthcare Ltd

#### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 95.038% of the total sampling variations of the three related ratios and its Eigen value is 2.852. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 76.490 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic three ratios are more than 95%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.851	95.038	.982 (Current Ratio)
2	.144	4.812	.992 (Liquid Ratio)
3	.004	.151	.950 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 76.490\*

#### Profitability Factor:

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 21.532, which is found to be significant at 5% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.204	73.465	.932 (Gross profit Ratio)
2	.683	22.762	-.678 (Net profit ratio)
3	.113	3.774	.935 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 21.532\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 73.465% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 67%, being positive or negative according to their nature (See the last column of the table).

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, cash turnover ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value > 1), first principal component has been selected as efficiency factor which represents 34.943% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 12.510, which is found to be not significant up to 10% probability level, implying that the principal component analysis is here not required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.747	34.943	.404 (Inventory Turnover ratio)
2	1.289	25.783	.816 (Debtor Turnover ratio)
3	.916	18.326	-.527 (Cash Turnover ratio)
4	.857	17.337	.903 (Creditors Turnover ratio)
5	.191	3.811	-.698 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 12.510<sup>a</sup>

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 40%, being positive or negative according to their nature.

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity ( $F_1$ ) and efficiency ( $F_2$ ). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .167^* \\ [F=2 \ .942]$$

$$\text{GP} = 15.663 + .017 F_1 - .032 F_2 \\ (15.660) \quad (1.550) \quad (3.491)$$

$$\text{DW} = 1.417$$

### 5.7.7 Divis Lab

#### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 69.096% of the total sampling variations of the three related ratios and its Eigen value is 2.073. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 34.524 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic three ratios are more than 43%, being positive or negative according to their nature .



Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.073	69.096	.976 (Current Ratio)
2	.896	29.858	.966 (Liquid Ratio)
3	.003	1.046	-.431 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 34.524\*

### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 28.462, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.970	65.66	.985 (Gross profit Ratio)
2	.980	32.669	.979 (Net profit ratio)
3	.049	1.664	.207 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 28.462\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 65.66% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 20% (See the last column of the table).

### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's

criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 59.949% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 50.016, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.997	59.949	.925 (Inventory Turnover ratio)
2	1.233	24.668	.875 (Debtor Turnover ratio)
3	.456	9.123	-.650 (Cash Turnover ratio)
4	.286	5.725	.933 ( Creditors Turnover ratio)
5	.026	.535	.974 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 50.016\*

In the constructed principal component for efficiency factor, the contributions of the basic variables except creditor turnover ratio are more than 65% (being positive or negative according to their nature).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .694^* \\ [F=17.111]$$

$$\text{GP} = 22.778^{**} + 4.58^{**} F_1 - 3.05 F_2 \\ (9.476) \quad (1.828) \quad (2.305)$$

$$\text{DW} = .903$$

### 5.7.8 Strides Archolabs

#### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 69.383% of the total sampling variations of the three related ratios and its Eigen value is 2.080. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 40.806 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic three ratios are more than 42%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.080	69.383	.980 (Current Ratio)
2	.900	29.995	.971 (Liquid Ratio)
3	.018	.622	.423 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 40.806\*

#### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 13.222, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.815	60.502	.952 (Gross profit Ratio)
2	.999	33.296	-.434 (Net profit ratio)
3	.186	6.202	.849 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 13.222\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 60.502% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 43% , being positive or negative according to their nature, (See the last column of the table).

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 48.205% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 17.093, which is found to be significant at 10% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.410	48.205	.807 (Inventory Turnover ratio)
2	1.286	25.726	.653 (Debtor Turnover ratio)
3	.595	11.905	.747 (Cash Turnover ratio)
4	.407	8.142	.878 ( Creditors Turnover ratio)
5	.301	6.021	.855 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 17.093\*\*\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 65%.

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .415^* \\ [F=5.965]$$

$$\text{GP} = 31.506^* + .809 F_1 - 1.899^* F_2 \\ (3.841) \quad (.579) \quad (.554)$$

$$\text{DW} = 1.669$$

### 5.7.9 Sun Pharmaceuticals

#### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 90.125% of the total sampling variations of the three related ratios and its Eigen value is 2.704. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 49.726 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios except liquid ratio are more than 90%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.704	90.125	.952 (Current Ratio)
2	.274	9.118	.988 (Liquid Ratio)
3	.022	.757	.906 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 49.726\*

### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 14.797, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.013	67.107	.934 (Gross profit Ratio)
2	.804	26.787	.587 (Net profit ratio)
3	.183	6.106	.893 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 14.797\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 67.107% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 58% (See the last column of the table).

### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's

criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 47.493% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 15.713, which is found to be significant at 10% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.375	47.493	.796 (Inventory Turnover ratio)
2	1.044	20.884	.732 (Debtor Turnover ratio)
3	.845	16.893	.780 (Cash Turnover ratio)
4	.486	9.720	.908 ( Creditors Turnover ratio)
5	.251	5.011	.528 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 15.713\*\*\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 52%.

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .227^{***}$$

$$[F=3.057]$$

$$\text{GP} = 58.801^{**} + 1.915 F_1 - 7.645^{**} F_2$$

$$(17.711) \quad (2.143) \quad (3.265)$$

$$\text{DW} = 1.378$$

### 5.7.10 Biocon Pharmaceuticals

#### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 87.982% of the total sampling variations of the three related ratios and its Eigen value is 2.639. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 64.828 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 86%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.639	87.982	.963 (Current Ratio)
2	.355	11.846	.982 (Liquid Ratio)
3	.005	.172	.865 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 64.828\*

#### Profitability Factor:

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 3.350, which is found to be not significant up to 10% probability level and so principal component analysis may not be statistically accepted here.



Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.424	47.454	.963 (Gross profit Ratio)
2	1.085	36.155	-.852 (Net profit ratio)
3	.492	16.391	.834 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 3.350<sup>a</sup>

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 47.454% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 83%, being positive or negative according to their nature (See the last column of the table).

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 52.280% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 42.579, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.614	52.280	.939 (Inventory Turnover ratio)
2	1.172	23.436	.937 (Debtor Turnover ratio)
3	1.033	20.655	.007 (Cash Turnover ratio)
4	.112	2.233	.865 (Creditors Turnover ratio)
5	.069	1.397	.320 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 42.579\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are not more than 93%.

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity ( $F_1$ ) and efficiency ( $F_2$ ). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .769^* \\ [F=24.311]$$

$$\text{GP} = 1840.084^* - 151.716^{***} F_1 - 326.05^* F_2 \\ (370.211) \quad (93.021) \quad (48.135)$$

$$\text{DW} = 1.496$$

### 5.7.11 Kopran

#### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 71.366% of the total sampling variations of the three related ratios and its Eigen value is 2.141. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 34.801 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 54%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.141	71.366	.976 (Current Ratio)
2	.827	27.556	.946 (Liquid Ratio)
3	.032	1.078	.542 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 34.770\*

### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 17.947, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.050	68.349	.904 (Gross profit Ratio)
2	.812	27.072	.577 (Net profit ratio)
3	.137	4.579	.949 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 17.947\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 68.349% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 57% (See the last column of the table).

### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency

factor which represents 59.208% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 49.711, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.960	59.208	.838 (Inventory Turnover ratio)
2	1.365	27.306	.965 (Debtor Turnover ratio)
3	.392	7.844	.617 (Cash Turnover ratio)
4	.248	4.969	.637 ( Creditors Turnover ratio)
5	.033	.674	.798 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 49.711\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 63%.

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .429^* \\ [F=.813]$$

$$\text{GP} = 4.261 - 3.126 F_1 - 1.047 F_2 \\ (13.016) \quad (2.453) \quad (1.828)$$

$$\text{DW} = 1.521$$

### 5.7.12 Biofil Chemicals and Pharmaceuticals Ltd.

#### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 77.293% of the total sampling variations of the three related ratios and its Eigen value is 2.319. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 61.662 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 67%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.319	77.293	.971 (Current Ratio)
2	.677	22.574	.958 (Liquid Ratio)
3	.003	.133	.676 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 61.662\*

#### Profitability Factor:

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 89.505, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.008	66.922	.998 (Gross profit Ratio)
2	.992	33.067	.126 (Net profit ratio)
3	.003	.01	.998 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 89.505\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 66.922% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are not more than 99% (See the last column of the table).

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 38.846% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 19.084, which is found to be significant up to 5% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.942	38.846	.869 (Inventory Turnover ratio)
2	1.309	26.181	-.519 (Debtor Turnover ratio)
3	1.066	21.322	-.884 (Cash Turnover ratio)
4	.556	11.129	.951 (Creditors Turnover ratio)
5	.126	2.523	.848 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 19.084\*\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 51% (being positive or negative in their nature).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity ( $F_1$ ) and efficiency ( $F_2$ ). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .988^* \\ [F=594.474]$$

$$\text{GP} = 290.845^* - 10.340 F_1 - 141.458^* F_2 \\ (36.681) \quad (8.472) \quad (4.103)$$

$$\text{DW} = 1.775$$

### 5.7.13 Ambalal Sarabhai Enterprises

#### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 76.083% of the total sampling variations of the three related ratios and its Eigen value is 2.282. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 31.534 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 68%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.282	76.083	.959 (Current Ratio)
2	.668	22.281	.945 (Liquid Ratio)
3	.049	1.636	.686 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 31.534\*

### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 31.808, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.878	62.597	.975 (Gross profit Ratio)
2	1.086	36.207	.063 (Net profit ratio)
3	.035	1.196	.961 (Return on capital employed)

Bartlett's test of sphericity is estimated to 31.808\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 62.597% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are not more than 97% (See the last column of the table).

### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency



factor which represents 32.743% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 11.627, which is found not to be significant up to 10% probability level, implying that the principal component analysis is not here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.637	32.743	-.851 (Inventory Turnover ratio)
2	1.510	30.200	.557 (Debtor Turnover ratio)
3	.929	18.576	-.118 (Cash Turnover ratio)
4	.697	13.931	-.676 (Creditors Turnover ratio)
5	.227	4.550	-.361 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 11.627<sup>a</sup>

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 11% (being positive or negative in their nature).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .456^* \\ [F=6.874]$$

$$\text{GP} = -163.907^* + 113.002^* F_1 + .159 F_2 \\ (39.876) \quad (34.331) \quad (.321)$$

$$\text{DW} = 1.382$$

#### 5.7.14 Parenteral Drugs (India) Ltd.

##### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 73.188% of the total sampling variations of the three related ratios and its Eigen value is 2.196. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 45.851 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 57%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.196	73.188	.957 (Current Ratio)
2	.791	26.371	.974 (Liquid Ratio)
3	.013	.441	.574 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 45.851\*

##### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 38.934, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.753	91.770	.962 (Gross profit Ratio)
2	.144	4.810	.950 (Net profit ratio)
3	.103	3.420	.962 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 38.934\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 91.770% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 95% (See the last column of the table).

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 43.617% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 19.314, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.181	43.617	.541 (Inventory Turnover ratio)
2	1.185	23.705	.897 (Debtor Turnover ratio)
3	.812	16.247	.873 (Cash Turnover ratio)
4	.694	13.870	.520 ( Creditors Turnover ratio)
5	.128	2.561	.890 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 19.314\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 52%.

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .294^{**}$$

$$[F=3.914]$$

$$\text{GP} = .263 + 5.170^{***} F_1 - 2.338 F_2$$

$$(19.476) \quad (2.606) \quad (2.959)$$

$$\text{DW} = .652$$

#### **5.7.15 Sequent Scientific Ltd.**

##### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 70.635% of the total sampling variations of the three related ratios and its Eigen value is 2.119. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 147.305 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 45% (being positive or negative in their nature).

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.119	70.635	.979 (Current Ratio)
2	.881	29.365	.979 (Liquid Ratio)
3	.00001	.00003	-.451 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 147.305\*

### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 59.445, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.109	70.300	.99 (Gross profit Ratio)
2	.887	29.565	.442 (Net profit ratio)
3	.004	.135	.977 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 59.445\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 70.300% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 44% (See the last column of the table).

### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's

criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 56.846% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 41.202, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.842	56.846	.786 (Inventory Turnover ratio)
2	1.316	28.325	.935 (Debtor Turnover ratio)
3	.576	11.522	.692 (Cash Turnover ratio)
4	.201	4.025	.992 ( Creditors Turnover ratio)
5	.064	1.282	.093 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 41.202\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 9%.

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .378$$

$$[F=.528]$$

$$\text{GP} = 23.056^{***} - .041 F_1 - .805 F_2$$

$$(11.638) \quad (.040) \quad (1.802)$$

$$\text{DW} = .813$$

### 5.7.16 Zenotech Laboratories Ltd.

#### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 67.957% of the total sampling variations of the three related ratios and its Eigen value is 2.039. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 144.064 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 27%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.039	67.957	.991 (Current Ratio)
2	.961	32.043	.991 (Liquid Ratio)
3	.000003	.0001	.271 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 144.064\*

#### Profitability Factor:

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 56.698, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.870	95.671	.985 (Gross profit Ratio)
2	.095	3.175	.968 (Net profit ratio)
3	.034	1.154	.982 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 56.698\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 95.671% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 96% (See the last column of the table).

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 34.297% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 13.935, which is found not to be significant up to 10% probability level, implying that the principal component analysis is not here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.715	34.297	.754 (Inventory Turnover ratio)
2	1.648	32.962	-.491 (Debtor Turnover ratio)
3	.963	19.257	.595 (Cash Turnover ratio)
4	.402	8.045	-.177 (Creditors Turnover ratio)
5	.272	5.439	-.721 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 13.935<sup>a</sup>



In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 17% (being positive or negative in their nature).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity ( $F_1$ ) and efficiency ( $F_2$ ). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .541 \\ [F=1.297]$$

$$\text{GP} = -108.269 + .529 F_1 - 9.451 F_2 \\ (87.575) \quad (.852) \quad (8.075)$$

$$\text{DW} = .785$$

#### **5.7.17 Marksans Pharma Ltd.**

##### **Liquidity Factor:**

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 95.932% of the total sampling variations of the three related ratios and its Eigen value is 2.878. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 68.114 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 96%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.878	95.932	.976 (Current Ratio)
2	.111	3.679	.996 (Liquid Ratio)
3	.011	.389	.967 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 68.114\*

### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 49.125, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.995	66.487	.967 (Gross profit Ratio)
2	.997	33.217	.998 (Net profit ratio)
3	.008	.296	.251 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 49.125\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 66.487% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 25% (See the last column of the table).

### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's

criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 44.720% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 20.240, which is found to be significant at 5% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.236	44.720	-.535 (Inventory Turnover ratio)
2	1.268	25.362	.924 (Debtor Turnover ratio)
3	.996	19.920	-.373 (Cash Turnover ratio)
4	.289	5.787	.916 (Creditors Turnover ratio)
5	.211	4.211	.344 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 20.240\*\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 34% (being positive or negative in their nature).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .399^{***}$$

$$[F=2.737]$$

$$\text{GP} = 32.559 + 1.102 F_1 - 8.312 F_2$$

$$(28.296) \quad (3.926) \quad (4.993)$$

$$\text{DW} = 1.068$$

### 5.7.18 Wanbury Ltd.

#### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 90.117% of the total sampling variations of the three related ratios and its Eigen value is 2.704. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 58.113 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 89%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.704	90.117	.966 (Current Ratio)
2	.286	9.520	.984 (Liquid Ratio)
3	.010	.363	.896 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 58.113\*

#### Profitability Factor:

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 5.834, which is found not to be significant up to 10% probability level and so principal component analysis may not be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	1.633	54.439	.896 (Gross profit Ratio)
2	.980	32.668	.581 (Net profit ratio)
3	.387	12.894	.702 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 5.834<sup>a</sup>

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 54.439% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 58% (See the last column of the table).

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 48.375% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 32.289, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.419	48.375	.952 (Inventory Turnover ratio)
2	1.139	22.786	.809 (Debtor Turnover ratio)
3	.987	19.730	-.400 (Cash Turnover ratio)
4	.400	7.998	.373 (Creditors Turnover ratio)
5	.05	1.110	-.830 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 32.289\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 37% (being positive or negative according to their nature).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .301^{**}$$

$$[F=4.014]$$

$$\text{GP} = 18.444^* + .192 F_1 - .966^{**} F_2$$

$$(28.296) \quad (3.926) \quad (4.993)$$

$$\text{DW} = 1.15$$

### 5.7.19 Morepen Labs.

#### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 95.456% of the total sampling variations of the three related ratios and its Eigen value is 2.864. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 113.198 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 95%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.864	95.456	.990 (Current Ratio)
2	.136	4.536	.988 (Liquid Ratio)
3	.0002	.007	.952 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 113.198\*

### **Profitability Factor:**

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 35.765, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.378	79.271	.960 (Gross profit Ratio)
2	.584	19.459	.743 (Net profit ratio)
3	.038	1.270	.951 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 35.765\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 79.271% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 74% (See the last column of the table).

### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's

criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 48.056% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 35.765, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.403	48.056	.736 (Inventory Turnover ratio)
2	1.328	26.563	.867 (Debtor Turnover ratio)
3	.636	12.727	.690 (Cash Turnover ratio)
4	.596	11.917	-.301 (Creditors Turnover ratio)
5	.036	.737	-.737 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 35.765\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 30% (being positive or negative according to their nature).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity (F<sub>1</sub>) and efficiency (F<sub>2</sub>). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .337^{**}$$

$$[F=4.551]$$

$$\text{GP} = 38.041^* + .749 F_1 - 4.548^{**} F_2$$

$$(10.670) \quad (.519) \quad (1.508)$$

$$\text{DW} = 1.445$$



### 5.7.20 Hiran Orgochem Ltd

#### Liquidity Factor:

To construct liquidity factor, three ratios namely, current ratio, absolute liquid ratio and liquid ratio have been clubbed through factor analysis and it is observed from table below that the principal component (or factor) represents 68.404% of the total sampling variations of the three related ratios and its Eigen value is 2.052. As the Eigen value of the first factor is greater than one, so according to Kaiser's 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 those principal components will be chosen whose Eigen values are greater than one. Further Bartlett's test sphericity is estimated to be 22.934 which found to be significant at 1% probability level; this implies that here principal component analysis is a fruitful exercise in clubbing the basic ratios (e.g. Current ratio, Absolute Liquid ratio and Liquid ratio). From the values of the last column of the table (related to factor matrix in factor 1) it is also observed that in the constructed first components the contributions of the basic ratios are more than 49%.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.052	68.404	.496 (Current Ratio)
2	.862	28.735	.939 (Liquid Ratio)
3	.085	2.861	.962 ( Absolute Liquid ratio)

Bartlett's test of sphericity is estimated to be 22.934\*

#### Profitability Factor:

Similarly, through factor analysis, the principal component for profitability factor has been constructed and the results are presented in the following table. Here Bartlett's test of sphericity is estimated to be 47.986, which is found to be significant at 1% probability level and so principal component analysis may be statistically accepted here.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.555	85.173	.975 (Gross profit Ratio)
2	.427	14.235	.956 (Net profit ratio)
3	.017	.592	.831 (Return on capital employed)

Bartlett's test of sphericity is estimated to be 47.986\*

On the basis of Kaiser's criterion (Eigen value > 1), first principal component has been selected and it explains 85.173% of the total sampling variation of the basic variables. The constructed principal component signifies the combined effect of the profitability ratios and the principal component contribution of the basic variables are more than 83% (See the last column of the table).

#### **Efficiency Factor:**

To construct principal component for efficiency factor, five basic variables, namely, inventory turnover ratio, debtor turnover ratio, Cash Turnover Ratio, creditor turnover ratio and working capital turnover ratio have been clubbed and applying Kaiser's criterion (Eigen value >1), first principal component has been selected as efficiency factor which represents 41.249% of the sample variations of the related basic five variables (see the following table). Further, Bartlett's test of sphericity is estimated to be 34.863, which is found to be significant at 1% probability level, implying that the principal component analysis is here required to club the variables of efficiency ratio.

Factor (F)	Eigen Value	Percent of Variation	Factor Matrix in Factor 1
1	2.062	41.249	.985 (Inventory Turnover ratio)
2	1.842	36.845	-.278 (Debtor Turnover ratio)
3	.694	13.880	.948 (Cash Turnover ratio)
4	.349	6.977	.289 (Creditors Turnover ratio)
5	.052	1.049	-.183 (Working Capital Turnover ratio)

Bartlett's test of sphericity is estimated to be 34.863\*

In the constructed principal component for efficiency factor, the contributions of the basic variables are more than 18% (being positive or negative according to their nature).

After the construction of the principal components, Regression of GP (dependent variables) has been estimated on the principal component of liquidity ( $F_1$ ) and efficiency ( $F_2$ ). The estimated regression results are presented below:

$$\text{Adjusted } R^2 = .530^* \\ [F=8.883]$$

$$\text{GP} = 63.102^* - 21.533 F_1 - 3.081^* F_2 \\ (47.279) \quad (15.059) \quad (.863)$$

$$\text{DW} = 1.014$$

## 5.8. SUMMARY OF THE CHAPTER

### **Liquidity:**

Among of the selected pharmaceutical companies Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Sun Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd were always holding higher amount of current assets to meet its current obligations. In other words, there number of operating cycle was low and holding higher amount of current assets. They were taken no risk to meet their current obligations. They had adopted conservative strategy in working capital management.

Cadila Health Care Ltd, Divis Labs, Strides Archolabs, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Sequent Scientific Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd., Wanbury Ltd. and Morepen Labs, the amount of working capital had fluctuated time to time. In Divis Labs and Biocon Pharmaceuticals at the initial stage of the study period, they were holding lower amount of current assets to meet their obligations but latter they were holding more Current Assets than their current obligations. In other words, they had changed from aggressive policy to conservative policy. In Strides Archolabs, Biofil Chemicals and Pharmaceuticals Ltd., Sequent Scientific Ltd., Zenotech Laboratories Ltd., Wanbury Ltd. and Morepen Labs at the

initial years of the study period, they were holding higher amount of current assets to meet their current obligations but latter they were holding lower amount of current assets than their current liabilities they had changed their current assets financing from conservative to aggressive policy.

Piramal Enterprises, Ambalal Sarabhai Enterprises and Hiran Orgochem Ltd were always holding lower amount of current assets to meet their current obligations. Their operating cycle was higher and holding lower amount of current assets. They were taken high risk to meet their current obligations. They had adopted aggressive strategy in working capital management.

Lupin, Piramal Enterprises, Strides Archolabs, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral drugs (India) Ltd., Sequent Scientific Ltd., Zenotech Laboratories Ltd, Morepen Labs, Quick Ratio was always in declining trend. These companies were holding larger amount of stock in their current assets. Their operating cycle was low and they were following conservative strategy in financing current assets.

Dr. Reddy's Laboratories, quick ratio was declining trend but later part of the study period it was in increasing trend. In Aurobindo Pharmaceuticals, quick ratio was increasing trend but later part of the study it was in declining trend. In CIPLA, Sun Pharmaceuticals, Kopran, Marksans Pharma Ltd., Wanbury Ltd. and Hiran Orgochem Ltd. There were no discernable trend in quick ratio; it was fluctuated time to time.

However, the average current ratio as well as quick ratio maintained by the selected pharmaceutical companies during the study period was highest in Sequent Scientific Ltd. followed by Zenotech Laboratories Ltd., Wanbury Ltd., Sun Pharmaceuticals, Dr. Reddy's Laboratories, Aurobindo Pharmaceuticals, Cipla, Strides Archolabs, Parenteral Drugs (India) Ltd., Kopran, Lupin, Divis Labs, Marksans Pharma Ltd., Morepen Labs, Biofil Chemicals and Pharmaceuticals Ltd., Cadila Health Care Ltd., Hiran Orgochem Ltd., Biocon Pharmaceuticals Ltd., Piramal Enterprises and Ambalal Sarabhai Enterprises.

The spot payment capacity of Lupin, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Labs, Strides Archolabs, Biocon Pharmaceuticals, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd., Marksans Pharma Ltd., Wanbury Ltd., Morepen Labs and Hiran Orgochem Ltd. of the selected companies were very poor and much dependent on collection from debtors for paying its short term debt. These companies were followed aggressive policy for short term debt paying capacity.

However, the spot payment capacity of Dr. Reddy's Laboratories, Zenotech Laboratories Ltd., Marksans Pharma Ltd. and Morepen Labs was fluctuated time to time as their absolute liquid ratio was fluctuated.

The average absolute liquid ratio was highest in Zenotech Laboratories Ltd. followed by Sun Pharmaceuticals, Dr. Reddy's Laboratories, Marksans Pharma Ltd., Morepen Labs, Cadila Health Care Ltd., Biocon Pharmaceuticals Ltd., Strides Archolabs, Sequent Scientific Ltd., Piramal Enterprises, Aurobindo Pharmaceuticals, Lupin, Wanbury Ltd., Hiran Orgochem Ltd., Parenteral Drugs (India) Ltd., Cipla, Divis Labs, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., and Ambalal Sarabhai Enterprises.

### **Profitability:**

From the profitability analysis , it was observed that the gross profit ratio of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Divis Labs and Biocon Pharmaceuticals maintaining their gross profit ratio at a level above the average gross profit percentage of the selected pharmaceutical companies in all the years of the study period. Operating expenses of these companies was below the sales volume in all the years of the study. The Gross Profit Ratio of Piramal Enterprises, Cadila Health Care Ltd., Strides Archolabs, Sun Pharmaceuticals, Kopran, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd., Marksans Pharma Ltd., Wanbury Ltd. and Morpen Labs had followed no trend during the period under study. Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories Ltd. and Hiran Orgochem Ltd. were unable to earn gross profit during the study period. It indicated that the

operating expenses of these companies were very high. The average gross profit percentage of the selected pharmaceutical companies was highest in Divis Labs followed by Dr. Reddy's Laboratories, Sun Pharmaceuticals, Cipla, Biocon Pharmaceuticals Ltd., Lupin, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Strides Archolabs, Piramal Enterprises, Wanbury Ltd., Parenteral Drugs (India) Ltd., Kopran, Marksans Pharma Ltd., Morepen Labs, Hiran Orgochem Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories Ltd. Biofil Chemicals and Pharmaceuticals Ltd. and Sequent Scientific Ltd.

The Net Profit Ratio of Dr. Reddy's Laboratories, CIPLA, Cadila Health Care Ltd, Divis Labs and Biocon Pharmaceuticals were very high. These companies were controlling their non-operating cost more effectively. The management and operation of these companies are very well against its competitors. The non operating costs of these companies are comparatively low.

The net profit ratio of Lupin, Aurobindo Pharmaceuticals, Piramal Enterprises, Strides Archolabs, Sun Pharmaceuticals, Kopran, Sequent Scientific Ltd, Marksans Pharma, Wanbury Ltd. and Morpen Labs were fluctuating from time to time. In most of the years, net profit ratios were below the average net profit percentage of the selected pharmaceutical companies and these companies had incurred net loss instead of net profit in most of the years. Non-operating expenses of these companies were very high and it exceeds its gross profit. The net profit ratio of Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral Drugs (India) Ltd, Zenotech Laboratories Ltd. and Hiran Orgochem Ltd. were always below the average net profit percentage of the selected samples and negative during the entire study period. The average net profit percentage was highest in Piramal Enterprises followed by Strides Archolabs, Divis Labs, Sun Pharmaceuticals, Biocon Pharmaceuticals Ltd., Dr. Reddy's Laboratories, Cipla, Cadila Health Care Ltd., Lupin, Aurobindo Pharmaceuticals, Wanbury Ltd., Parenteral Drugs (India) Ltd., Kopran, Marksans Pharma Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories Ltd. Morepen Labs, Hiran Orgochem Ltd., Biofil Chemicals and Pharmaceuticals Ltd. and Sequent Scientific Ltd.

ROCE of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care ltd., Divis Labs and Biocon Pharmaceuticals was much higher than that of

average ROCE of selected pharmaceutical companies. ROCE of Piramal Enterprises, Strides Archolabs, Sun Pharmaceuticals, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd., Marksans Pharma, Wanbury Ltd. and Hiran Orgochem Ltd. fluctuated time to time. ROCE of Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories Ltd. and Morepen Labs was always below the average ROCE of the selected pharmaceutical Companies (7.39%) during the study period. Moreover, the average ROCE of the selected pharmaceutical companies was highest in Divis Labs followed by CIPLA, Lupin, Biocon Pharmaceuticals Ltd., Cadila Health Care Ltd., Dr. Reddy's Laboratories, Piramal Enterprises, Aurobindo Pharmaceuticals, Sun Pharmaceuticals, Sequent Scientific Ltd, Wanbury Ltd., Strides Archolabs, Marksans Pharma Ltd., Parenteral Drugs (India) Ltd., Kopran, Morepen Labs, Hiran Orgochem Ltd., Zenotech Laboratories Ltd., Ambalal Sarabhai Enterprises and Biofil Chemicals and Pharmaceuticals Ltd.

**Efficiency:**

Inventory Turnover Ratio of Dr. Reddy's Laboratories, Piramal Enterprises, Cadila Health Care Ltd., Strides Archolabs, Biocon Pharmaceuticals Ltd., Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Wanbury Ltd. and Morepen Labs was above the average of the selected samples in most of the years of the study. The average inventory turnover ratio of Lupin, CIPLA, Aurobindo Pharmaceuticals, Divis Labs, Sun Pharmaceuticals, Kopran, Parenteral Drugs (India) Ltd., Zenotech Laboratories, Marksans Pharma Ltd. and Hiran Orgochem Ltd. was below the average of the selected samples during the period under study. The average inventory turnover ratio was highest in Ambalal Sarabhai Enterprises followed by Biofil Chemicals and Pharmaceuticals Ltd., Wanbury Ltd., Piramal Enterprises, Sequent Scientific Ltd, Morepen Labs, Strides Archolabs, Dr. Reddy's Laboratories, Biocon Pharmaceuticals Ltd., Cadila Health Care Ltd., Sun Pharmaceuticals, Lupin, Hiran Orgochem Ltd., Parenteral Drugs (India) Ltd., Kopran, Aurobindo Pharmaceuticals, Marksans Pharma Ltd., Zenotech Laboratories Ltd., CIPLA, and Divis Labs .

The debtors collections of average DTR of Piramal Enterprises and Cadila Health Care Ltd. were very prompt as the average DTR of the selected companies were above the

average of the selected samples. In most of the years, the debtors collection period of Lupin, Divis Labs, Biocon Pharmaceuticals, Kopran , Marksans Pharma Ltd. and Wanbury Ltd. was very long. The DTR of Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises and Strides Archolabs were remarkably longer. The DTR of rest of the companies was longer in few years and shorter in rest of the years of the study period.

Cash conversion cycle of Lupin, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Biocon Pharmaceuticals, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was very prompt in most of the years but very slow in rest of the years of the study. The cash conversion period of Dr. Reddy's Laboratories, Strides Archolabs, Sun Pharmaceuticals, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd., Morepen Labs and Hiran Orgochem Ltd. was very long. It indicated that the cash was not properly managed in these companies during the entire study period. Moreover, these companies were followed no trend uniformly throughout the study period.

The cash conversion period of Aurobindo Pharmaceuticals, CIPLA, Biocon Pharmaceuticals, Lupin, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was very speedy but the cash conversion period of Zenotech Laboratories Ltd., Sequent Scientific Ltd., Ambalal Sarabhai Enterprises, Dr. Reddy's Laboratories, Strides Archolabs and Sun Pharmaceuticals was very slow. The cash conversion cycle of Piramal Enterprises, Cadila Health Care Ltd., Divis Labs, Kopran, Biofil Chemicals and Pharmaceuticals Ltd., Marksans Pharma Ltd., Morepen Labs and Hiran Orgochem Ltd. was neither slow nor fast.

Creditors Management of Lupin Ltd., Dr. Reddys' Laboratories, CIPLA, Aurobindo Pharmaceuticals Ltd., Cadila Health Care Ltd., Sun Pharmaceuticals Ltd., Biofil Chemicals, Parenteral Drugs (India) Ltd, Wanbury and Morepen Labs was not satisfactory during the study period. In most of the years, the creditors payment period of Lupin Ltd., Dr. Reddys' Laboratories, CIPLA, Aurobindo Pharmaceuticals Ltd., Cadila Health Care Ltd., Sun Pharmaceuticals Ltd., Biofil Chemicals and Pharmaceuticals Ltd., Parenteral Drugs (India) Ltd, Wanbury and Morepen Labs was very short and in few



years it was below the average of the selected samples. Creditors Management of Piramal Enterprises, Divis Labs, Strides Archolabs, Biocon Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Laboratories, Marksans Pharma, and Hiran Orgochen Ltd. were always below the average of the selected samples. The payables management of these companies was comparatively satisfactory.

Working capital cycle period of Lupin, CIPLA, Aurobindo Pharmaceuticals, Strides Archolabs, Sun Pharmaceuticals, Parenteral Drugs (India) Ltd., Zenotech Laboratories Ltd., Wanbury Ltd., Morepen Labs and Hiran Orgochem Ltd. was not managed efficiently in most of the years. Working capital cycle period was efficiently done in few years, when their operating cycle period was shorter. Working capital cycle period of Piramal Enterprises, Cadila Health Care Ltd., Divis Lab, Biocon Pharmaceruicals, Biofil Chemicals and pharmaceuticals Ltd, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd. and Marksans Pharma was efficiently managed in respect of operating cycle period, during the period under study.

The current assets to total assets of LUPIN, Dr. Reddy's Laboratories, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Divis Lab, Kopran, Sequent Scientific Ltd. Marksans Pharma Ltd, Wanbury Ltd. and Hiran Orgochem Ltd. was very high. The major portion of total assets of these companies was current assets. The liquidity position of these companies was very high as compared to others selected companies.

The current assets to total assets of Cadila Health Care Ltd., Strides Archolabs, Sun Pharmaceuticals, Biocon Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Parenteral Drugs (India) Ltd., Zenotech Ltd. and Morepen Labs were very low as compared to the average of the selected samples during the period under study. Investment in current assets out of total assets of these companies was low. Liquidity position in respect of current assets to total assets of these companies was lower. Piramal Enterprises, Divis Lab, Sun Pharmaceuticals, Biocon Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises and Parenteral Drugs (India) Ltd. were maintaining current assets to total assets at a level of average of the selected samples. LUPIN, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Sequent

Scientific, Marksans Pharma Ltd., Wanbury Ltd. and Hiran Orgochem Ltd. were maintaining their current assets to total assets at a level above the average of the selected samples. Cadila Health Care Ltd., Strides Archo Labs, Biofil Chemicals and Pharmaceuticals Ltd., Zenotech Ltd and Morepen Labs maintaining their current assets to total assets at a level below the average of the selected samples.

The inventory to current assets ratio of LUPIN, CIPLA, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Marksans Pharma Ltd., Parenteral Drugs (India) Ltd., Morepen Labs and Hiran Orgochem Ltd. was very high. They were maintaining conservative policy for managing its inventory level. The average inventory to current assets ratio of Lupin, Biocon Pharmaceuticals and Morepen Labs was just equivalent to the average of the selected samples. The average inventory to current assets ratio of Divis Lab and Hiran Orgochem Ltd. was near about 50% which is very high. These two companies followed highly conservative policy for managing their inventory level. Dr. Reddy's Laboratories, Piramal Enterprises, Strides Archo Labs, Sun Pharmaceuticals, Biocon, Kopran, Biofil Chemicals Ltd., Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Ltd. and Wanbury Ltd. had maintained its inventory to current assets level at a rate below the average of the selected samples of 26.98%. Inventory to current assets ratio of Zenotech Ltd. was highly aggressive followed by Ambalal Sarabhai Enterprises, Biofil Chemicals and Pharmaceuticals Ltd., Sequent Scientific Ltd., Strides Archolabs, Dr. Reddy's Laboratories, Wanbury Ltd., Kopran, Sun Pharmaceuticals, and so on. The inventory to current assets ratio of Divis Lab and Hiran Orgochem Ltd. was highly conservative as compared to the selected samples. Lupin, Biocon Pharmaceuticals, maintained their average inventory to current assets ratio at a level of the average of the selected samples of 26.98%.

Dr. Reddy's Laboratories, Divis Lab, Wanbury Ltd. followed their sundry debtors to current assets ratio at a rate equivalent to the average of the selected samples of 0.33 during the period under study. The debtors value of these companies was neither high nor low as compared to the average of the selected samples during the study period. The average sundry debtors to current assets ratio of Dr. Reddy's Laboratories, Divis Lab, Wanbury Ltd. were 0.34, 0.35 and 0.33 respectively. The average Sundry Debtors to

Current Assets ratio of CIPLA, Piramal Enterprises, Cadila Health Care Ltd., Sun Pharmaceuticals, Kopran, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Morepen Labs and Hiran Orgochem Ltd. was below the average of the selected samples of 0.33.

Lupin, Sun Pharmaceuticals, Biofil Chemicals and Pharmaceuticals Ltd., Hiran Orgochem Ltd. followed declining trend in cash and bank to current assets ratio in the recent years of the study but Strides Archolabs, Ambalal Sarabhai Enterprises, Sequent Scientific Ltd., Zenotech Ltd. and Morepen Labs followed an inclining trend in the recent years of the study. Cash and bank to current assets ratio of Dr, Reddy's Laboratories, CIPLA, Piramal Enterprises, Aurobindo Pharmaceuticals, Cadila Health Care Ltd., Divis Lab, Biocon Phasrmaceuticals, Kopran, Parenteral Drugs (India) Ltd. and Wanbury Ltd. was very low as compared to the average of the selected samples of 4.32%. In the recent years, Lupin, Cadila Health Care Ltd. Divis labs and Wanbury Ltd. followed declining trend but Dr. Reddy's Laboratories, Piramal Enterprises, Aurobindo Pharmaceuticals, Biocon Pharmaceuticals Ltd. followed increasing trend.

#### **Working Capital Financing Strategy:**

Working capital leverage of Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran, Wanbury Ltd. and Hiran Orgochem Ltd. maintained a higher degree of Working capital leverage as compared to the other selected samples. It indicated that Lupin, Dr. Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran, Wanbury Ltd. and Hiran Orgochem Ltd. accepting the higher risk for possibility of higher return on investment. These companies are much more responsive to working capital management as compared to others. Piramal Enterprises, Divis Labs, Strides Archolabs, Sun Pharmaceuticals, Biocon Pharmaceuticals, Parenteral Drugs (India) Ltd., Sequent Scientific Ltd. and Marksans Pharma Ltd. followed mixed strategy for managing their working capital. The Working capital leverage of these companies followed a declining trend since 2008-2009. It indicated that they are avoiding taking high risk. They had shifted high risk with a high return policy in the initial years of the study to low risk with a low return policy since 2008-2009 to the recent year of the study. These companies are moderate responsive to working capital management as compared to

others selected samples during the period under study. The average Working capital leverage of Cadila Health Care Ltd., Biofil Chemicals and Pharmaceuticals Ltd., Ambalal Sarabhai Enterprises, Zenotech Laboratories, Morepen Labs was always below the average of the selected samples of 0.39 during the period under study.

Dr Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd. were always above the average of the selected samples. It indicated that Dr Reddy's Laboratories, CIPLA, Aurobindo Pharmaceuticals, Kopran and Parenteral Drugs (India) Ltd. used, on an average, 60% of long term funds to finance their current assets. These companies approached conservative policy for working capital financing. Lupin, Piramal Enterprises, Cadila Health Care Ltd., Divis Lab, Strides Archolab, Sun Pharmaceuticals, Biocon Phasrmaceuticals Ltd., Sequent Scientific Ltd, Wanbury Ltd. and Hiran Orgochem Ltd. adopted aggressive policy, conservative policy as well as matching policy in financing working capital in different years of the study. Biofil Chemicals and Pharmaceuticals Ltd., Zenotech Laboratories Ltd., Marksans Pharma Ltd. and Morepen Labs had shifted their risk in financing working capital from conservative policy to aggressive policy during the study period. Ambalal Sarabhai Enterprises was always in aggressive policy in working capital financing during the study period.

**Results of regression** analysis of gross profit on current ratio shows that out of total 14 companies under study, 10 companies earned profit and 4 incurred loss almost during the entire period. Loss making companies are found to maintain, on an average, relatively lower current ratio than the profit –making companies, though, excepting only one company, namely Ambalal Sarabhai enterprises with current ratio of 1.0, the three other companies maintained, on an average, more than 2.0, a standard current ratio. normally construed as a safe liquidity ratio. For the profit-making companies, on the other hand, the average current ratio ranged between 3.0 and 5.23. (The sequent Scientific is a glaring exception, with an average C.R. of 76.36, minimum current ratio of 0 and maximum of 558).

Thus, maintaining a very high current ratio, might have been an important factor in helping her ailing husband.

So far as the relation between the gross profit and inventory turn-over ratio is concerned, some baffling results come out. Each of three out of 4 loss-making companies has much higher inventory turn-over ratio than any of the profit-making companies. Therefore, we can conclude that, in addition to the inventory management problem, there might be some other factors in the group of the liquidity measures that might have outweighed the gain accruing from high inventory turnover ratio.

TABLE – 5.1.1

Current Ratio

Year	Lupin	Dr. Reddy's Lab	Cipla	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parental Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Organic hem
1999-2000	5.45	5.19	4.45	2.74	3.89	6.08	1.62	3.86	4.07	1.87	3.87	6.43	1.42	3.47	558.00	0.00	2.19	4.16	5.93	2.17
2000-2001	4.72	5.08	3.80	2.83	3.47	3.46	1.78	3.92	5.83	1.88	6.83	7.43	1.50	4.76	558.00	0.00	1.88	8.95	4.77	1.69
2001-2002	3.17	5.74	3.40	2.14	3.49	3.26	2.05	1.90	3.93	1.83	3.06	10.41	1.27	5.12	0.00	214.00	2.30	6.06	2.92	1.68
2002-2003	2.91	5.39	3.11	2.71	3.09	1.56	2.02	2.72	3.97	1.76	4.32	2.96	1.08	4.82	0.00	214.00	1.63	6.62	6.97	2.37
2003-2004	2.19	3.78	3.25	2.27	4.26	1.53	2.78	3.85	2.53	4.11	3.60	2.16	1.15	3.78	3.74	22.77	1.72	2.32	6.66	2.82
2004-2005	2.03	4.43	3.00	1.88	3.73	1.60	2.93	3.58	7.81	1.29	1.95	1.60	1.08	2.72	4.85	3.23	2.88	1.91	29.56	4.64
2005-2006	3.37	3.84	3.12	2.08	3.87	1.91	2.47	3.92	8.27	1.59	2.18	1.06	1.09	2.74	2.33	1.12	8.38	3.64	2.90	4.58
2006-2007	3.19	5.50	4.40	2.29	5.47	1.62	2.80	2.78	6.35	2.22	2.18	0.71	1.11	2.63	3.59	2.33	6.51	4.30	1.89	4.52
2007-2008	3.06	4.26	3.82	2.70	4.49	2.35	2.90	3.29	3.44	2.55	3.10	0.42	1.05	4.66	2.31	11.12	5.07	2.67	0.70	2.79
2008-2009	1.97	3.33	3.75	3.44	4.41	2.28	3.75	2.48	3.94	2.95	2.67	0.28	0.64	4.66	4.10	10.25	3.62	2.54	0.73	2.74
2009-2010	2.97	2.36	4.66	3.03	3.74	2.27	3.84	3.15	4.36	2.61	2.85	0.52	1.14	3.82	2.35	8.03	4.20	28.38	0.78	1.62
2010-2011	3.11	2.92	4.05	11.53	3.76	2.32	3.56	8.13	6.81	3.67	2.81	0.80	1.06	2.79	1.92	1.07	0.45	2.86	0.82	2.81
2011-2012	2.85	3.53	3.87	5.41	2.88	2.26	3.65	7.00	5.79	3.17	2.50	1.06	0.50	2.02	1.15	0.44	0.43	1.68	0.80	3.86
2012-2013	3.08	3.14	3.71	6.15	3.80	2.96	4.20	2.55	5.11	3.16	2.66	1.39	0.48	2.57	1.49	0.38	1.58	1.98	0.81	1.96
2013-2014	3.79	4.19	3.32	5.15	2.87	2.86	4.59	1.81	6.28	3.16	3.38	1.49	0.39	2.20	1.58	0.82	2.09	1.05	1.01	1.68
Average	3.19	4.18	3.72	3.76	3.81	2.55	3.00	3.66	5.23	2.52	3.20	2.58	1.00	3.52	76.36	32.64	3.00	5.27	4.48	2.80
S.D	0.92	1.03	0.52	2.52	0.67	1.15	0.91	1.74	1.67	0.83	1.20	3.04	0.34	1.07	195.55	73.89	2.22	6.74	7.31	1.10

TABLE-5.1.2

Quick Ratio

Year	Lupin	Dr. Reddy's Lab	CIPLA	Piramal Enterprise	Aurobindo Pharmaceuticals	Cadilla Health care Ltd	Divis Lab	Strides Archolabs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parental Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgohem
1999-2000	4.49	3.94	2.45	1.09	2.67	5.32	0.62	2.48	2.88	1.25	2.2	4.6	1.16	2.31	558	undefine	1.06	2.25	4.64	0.9
2000-2001	3.72	3.64	2.15	1.04	2.11	2.31	0.78	2.78	3.35	1.26	4.72	5.09	1.19	3.5	556	undefine	1.36	5.35	3.71	0.73
2001-2002	2.55	4.87	2.01	0.67	2.72	2.38	1.2	1.34	2.34	1.38	2.28	8.27	1.04	3.46	undefine	214	1.6	4.27	2.17	0.63
2002-2003	2.39	4.51	1.69	0.92	2.26	0.88	1.06	2.43	2.70	1.16	3.34	2	0.93	3.2	undefine	214	0.74	2.65	5.71	0.66
2003-2004	1.45	3.05	1.96	0.77	3.04	0.97	1.37	3.38	1.68	3.47	2.98	1.64	0.96	2.5	3.27	22.24	1.07	1.72	5.44	0.58
2004-2005	1.28	3.75	1.72	0.48	2.53	0.95	1.42	2.43	6.98	0.96	1.46	1.14	0.93	1.83	4.34	2.7	1.79	1.6	25.95	0.5
2005-2006	2.59	3.13	1.81	0.63	2.85	1.26	1.19	3.04	7.30	1.09	1.71	0.82	0.98	1.88	2.02	0.85	6.54	3.23	2.54	0.66
2006-2007	2.32	4.83	2.88	0.74	4.13	0.97	1.44	2.2	5.38	1.52	1.76	0.62	1.03	1.85	2.87	1.85	4.26	3.94	1.58	0.53
2007-2008	1.95	3.44	2.67	0.82	3.2	1.56	1.54	2.91	2.98	1.73	2.57	0.38	0.98	3.39	1.63	10.36	2.94	2.21	0.39	0.54
2008-2009	1.19	2.69	2.56	0.85	3.17	1.5	1.87	2.06	3.24	2.21	2.31	0.22	0.55	3.06	2.92	9.65	1.66	2.14	0.46	0.27
2009-2010	2.06	1.78	3.37	0.58	2.43	1.55	1.62	2.71	2.89	2.03	2.29	0.51	1.05	2.63	1.64	7.38	2.5	25.03	0.41	0.46
2010-2011	2.15	2.23	2.44	0.33	2.37	1.61	1.74	7.54	5.41	2.9	2.16	0.77	1.05	1.79	1.32	0.95	0.33	2.5	0.46	1.02
2011-2012	1.91	2.66	2.34	0.24	1.82	1.69	1.87	6.58	4.72	2.38	1.95	1.01	0.48	1.37	0.84	0.41	0.31	1.46	0.45	1.64
2012-2013	2.08	2.43	2.01	0.28	2.41	2.2	2.05	2.15	3.81	2.4	2.11	1.28	0.46	2	1.01	0.27	1.11	1.77	0.48	0.31
2013-2014	2.79	3.38	1.78	0.33	1.82	2.13	2.45	1.55	5.14	2.48	2.56	1.41	0.38	1.67	0.97	0.59	1.61	0.87	0.68	0.38
Average	2.32	3.35	2.25	0.65	2.63	1.81	1.48	3.03	4.07	1.88	2.42	1.98	0.87	2.42	75.78	32.35	1.92	4.06	3.67	0.65
S.D	0.86	0.92	0.48	0.27	0.59	1.09	0.48	1.72	1.68	0.74	0.79	2.25	0.26	0.73	195.37	73.99	1.63	5.92	6.45	0.33

**TABLE-5.1.3**

**Absolute Liquid Ratio**

Year	Lupin	Dr. Reddy's Lab	CIPLA	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parental Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Organchem
1999-2000	0.18	0.39	0.04	0.5	0.17	4.04	0.09	0.3	0.07	0.01	0.09	0.2	0.1	0.06	0	0	0.13	0.02	1.55	0.16
2000-2001	0.1	0.18	0.03	0.29	0.03	0.54	0.09	0.19	0.17	0.01	0.08	0.24	0.05	0.09	0	0	0.08	0.04	1.19	0.09
2001-2002	0.08	2.23	0.05	0.11	0.06	0.04	0.08	0.23	0.18	0.01	0.04	0.06	0.08	0.08	0	6	0.1	0.02	0.37	0.06
2002-2003	0.05	2.5	0.03	0.08	0.13	0.03	0.08	0.12	0.64	0.01	0.07	0.02	0.03	0.01	0	2	0.09	0.03	1.19	0.05
2003-2004	0.05	1.15	0.01	0.06	0.17	0.12	0.09	0.2	0.39	2.38	0.04	0.02	0.06	0.01	0.26	18.304	0.11	0.02	1.24	0.08
2004-2005	0.06	1.98	0.03	0.02	0.05	0.08	0.05	0.32	3.95	0.02	0.04	0.01	0.05	0.01	0.85	1.33	0.21	0.08	3.14	0.12
2005-2006	1.13	1.04	0.06	0.04	0.37	0.01	0.07	0.72	4.5	0.01	0.05	0.01	0.11	0.05	0.33	0.18	4.85	0.7	0.31	0.09
2006-2007	0.76	1.99	0.2	0.07	1.22	0.02	0.11	0.11	3.48	0.01	0.04	0.01	0.04	0.2	0.9	0.16	2.88	0.06	1.21	0.12
2007-2008	0.38	0.68	0.08	0.09	0.47	0.05	0.06	0.52	1.26	0.01	0.05	0.03	0.06	0.65	0.17	8.57	0.74	0.11	0.02	0.08
2008-2009	0.01	0.33	0.45	0.04	0.15	0.06	0.06	0.08	1.82	0.02	0.04	0.02	0.11	0.24	0.21	6.75	0.25	0.27	0.05	0.1
2009-2010	0.04	0.24	0.05	0.03	0.01	0.05	0.06	0.14	0.48	0.2	0.09	0.2	0.17	0.17	0.18	4.53	0.66	1.07	0.009	0.09
2010-2011	0.04	0.04	0.07	1.76	0.13	0.06	0.04	0.36	2.83	0.58	0.06	0.03	0.07	0.06	0.06	0.23	0.07	0.07	0.025	0.47
2011-2012	0.02	0.55	0.04	0.01	0.01	0.13	0.06	0.26	2.22	0.09	0.1	0.05	0.01	0.08	0.07	0.11	0.05	0.08	0.03	0.96
2012-2013	0.02	0.42	0.07	0.03	0.11	0.12	0.09	0.11	0.64	0.38	0.05	0.04	0.01	0.08	0.17	0.07	0.003	0.09	0.04	0.003
2013-2014	0.1	0.93	0.03	0.04	0.01	0.1	0.09	0.32	0.17	0.38	0.07	0.04	0.03	0.06	0.11	0.38	0.287	0.03	0.08	0.006
Average	0.20	0.97	0.08	0.21	0.20	0.36	0.07	0.26	1.52	0.27	0.06	0.06	0.06	0.12	0.22	3.24	0.70	0.17	0.69	0.16
S.D	0.32	0.81	0.11	0.44	0.30	1.02	0.019	0.17	1.52	0.60	0.02	0.07	0.04	0.16	0.28	5.06	1.35	0.30	0.88	0.24



**TABLE-5.2.1**

**Gross Profit Ratio(%)**

Year	Lupin	Dr. Reddy's Lab	CIPLA	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archoleabs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Organic
1999-2000	30.85	23.98	23.50	16.09	16.99	15.65	20.79	22.97	24.29	25.52	20.31	4.78	-15.93	15.46	0.00	-3.57	15.87	9.43	22.74	11.64
2000-2001	18.07	28.40	23.75	17.98	14.17	16.15	24.13	23.44	28.78	25.52	19.97	-9.75	-23.56	15.76	0.00	-3.57	13.46	23.39	22.22	7.95
2001-2002	21.12	38.32	23.77	13.05	12.69	17.00	29.10	26.28	29.17	21.74	24.15	-90.68	-16.67	9.60	0.00	-40.00	16.92	21.93	27.88	5.92
2002-2003	18.10	30.03	21.87	16.70	17.17	18.75	31.28	23.65	33.33	24.65	-1.37	-57.73	-18.91	12.42	0.00	36.36	4.52	18.13	29.75	11.16
2003-2004	23.23	20.88	21.96	17.66	18.60	16.21	36.72	18.51	23.93	30.75	13.17	-3457.35	-18.98	8.00	21.35	28.89	20.82	10.41	-29.86	13.84
2004-2005	11.96	10.54	22.41	11.90	11.43	17.23	31.89	25.09	11.92	29.18	-6.27	-66.38	-6.04	9.52	18.81	-43.84	17.67	15.80	6.51	42.41
2005-2006	18.35	15.83	23.27	16.38	13.02	18.62	31.88	24.73	1.17	26.11	1.32	-10.45	-17.35	7.76	18.28	9.21	15.42	15.00	10.56	6.79
2006-2007	16.80	35.08	23.07	17.09	14.86	17.91	34.81	18.11	-3.29	22.73	19.69	-6.40	-25.06	9.77	20.24	-27.63	6.95	14.08	-6.08	10.73
2007-2008	21.02	17.43	20.27	20.88	14.21	16.20	42.17	25.29	8.38	21.14	-7.44	3.41	-70.93	18.00	10.59	-92.77	12.65	16.91	-4.16	-5.76
2008-2009	19.43	18.95	23.78	21.86	34.28	14.35	44.18	13.58	2.91	23.15	3.43	2.14	-184.38	15.26	15.67	-314.08	13.56	17.96	1.61	6.90
2009-2010	22.79	24.76	24.63	22.32	19.12	6.09	45.22	16.26	13.63	23.33	12.52	65.91	-28.48	16.42	24.39	-123.18	12.18	12.68	7.17	-33.82
2010-2011	21.32	23.50	20.86	3.57	23.43	-1.53	38.23	15.78	42.61	23.92	10.77	-52.09	-28.42	11.81	17.33	-174.82	-51.94	3.01	3.43	-45.78
2011-2012	19.12	27.84	22.67	-11.79	17.67	21.52	37.84	18.23	43.80	21.44	10.90	-8.29	-66.35	3.85	103.92	-222.02	-76.19	2.82	6.59	-31.83
2012-2013	26.45	23.54	25.84	-8.99	9.53	19.22	38.60	13.44	21.08	20.93	13.70	16.97	-100.72	-11.89	-2.07	-681.25	23.03	3.86	9.55	-244.81
2013-2014	32.58	28.39	21.21	3.47	7.29	19.96	40.53	13.95	0.60	21.49	14.11	13.53	-93.04	-21.55	-1.28	-615.58	26.61	6.16	13.64	-243.02
Average	21.41	24.50	22.86	11.88	16.30	15.55	35.16	19.95	18.82	19.35	9.93	-243.49	-47.65	8.01	16.48	-151.19	4.77	12.77	8.10	-32.51
S.D	5.32	7.28	1.48	10.64	6.41	5.87	7.04	4.71	15.20	5.14	9.87	889.94	48.22	10.92	26.10	225.04	28.86	6.65	15.06	88.63

**TABLE-5.2.2**

**Net Profit Ratio(%)**

Year	Lupin	Dr. Reddy's Lab	CIPLA	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Pareenteral Drugs(India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Organchem
1999-2000	3.46	13.62	18.31	12.1	10.72	8.77	14.28	12.46	20.41	11.72	5.97	-4.03	3.2	5.62	0	-24.45	5.28	-8.52	12.25	3.28
2000-2001	7.15	15.6	17.92	13.64	7.18	13.1	13.33	16.23	23.85	11.74	6.45	-29.1	7.28	5.72	-1306812	-12.26	4.69	0.18	15.31	2.85
2001-2002	8.05	29.67	17.95	5.22	6.96	12.28	16.8	8.4	24.39	12.31	3.52	-140.32	-4.28	0.41	0	-26.73	0.48	2.44	14.94	1.69
2002-2003	7.08	24.81	16.81	10.63	9.19	7.91	21.18	6.99	28.98	13.96	-17.97	-95.73	-18.27	0.49	-1580400	-0.32	-12.64	4.09	10.67	-0.05
2003-2004	12.34	16.47	15.76	13.35	10.05	12.3	22.97	2.29	25.29	24.5	0.44	-3540.44	3.44	1.25	14.63	-4.87	6.09	4.09	-16.7	2.3
2004-2005	7.19	8.31	18.02	12.41	3.19	11.49	18.12	9.4	24.78	26.2	-35.16	-471.29	-8.18	1.37	11.81	-78.15	8.46	9.42	-36.2	2.35
2005-2006	10.98	9.85	20.12	11.62	4.89	12.43	17.99	13.63	25.85	19.12	-3.57	-10.08	-5.87	1.03	12.28	-5.92	7.91	9.37	-30.01	11.51
2006-2007	14.89	29.77	18.41	11.26	11.74	13.42	25.94	7.82	26.69	18.3	-39.54	-45.62	-13.62	2.79	20.71	16.44	2.88	13.74	-122.53	0.96
2007-2008	16.3	13.57	16.43	15.14	12.41	13.17	33.77	-28.19	31.01	46.7	11.04	-75.89	-11.61	9	2.99	-142.83	6.14	7.41	-38.59	3.21
2008-2009	14.09	13.2	14.58	11.08	4.54	13.31	34.97	0.98	31.43	11.31	-11.03	-18.7	16.6	4.75	3.25	-201.5	0.23	-18.22	-22.43	-9.11
2009-2010	17.52	18.48	18.97	15.83	16.09	20.39	35.99	13.44	33.99	20.2	6.05	28.87	3.58	8.1	8.32	-142.94	0.14	8.17	-0.88	3.63
2010-2011	17.95	16.84	14.95	649.81	14.33	20.57	32.48	13.24	41.91	28.38	2.76	22.45	-2.63	2.29	5.63	-187.93	-	-7.06	-19.85	-54.61
2011-2012	14.92	13.51	15.77	9.69	-0.99	19.41	29	15.39	38.94	15.74	3.01	2.38	-24.26	-21.45	0.42	-442.72	139.26	-4.54	-8.93	-19.39
2012-2013	17.63	14.75	17.87	-13.01	9.09	13.37	28.08	6.73	19.35	13.85	4.78	8.93	-48.47	-45.47	-17.21	-793.59	20.14	-6.08	-7.4	-235.52
2013-2014	24.84	19.56	14.37	16.22	16.31	20.76	30.47	296.5	-94.65	14.57	5.61	7.14	-99.78	-24.09	-33.05	-444.44	17.45	-40.46	-1.82	-202.35
Average	12.95	17.20	17.08	52.99	9.04	14.17	25.02	26.35	20.14	19.24	-3.84	-290.76	-13.52	-3.21	-192478.8	-166.14	-12.51	-1.73	-16.81	-32.61
S.D	5.66	6.41	1.71	165.25	4.87	4.14	7.75	75.50	32.37	9.37	15.47	907.43	28.40	15.12	510580.93	228.95	47.47	13.70	34.34	77.50

**TABLE-5.2.3**  
**Return on Capital Employed(%)**

Year	Lupin	Dr. Reddy's Lab	Cipla	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon Pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgchem
1999-2000	12.35	17.22	28.32	14.63	32.57	9.51	28.21	13.51	25.89	33.13	8.66	1.13	-17.09	15.66	0.00	-0.60	15.63	6.76	9.93	19.53
2000-2001	15.47	28.15	31.63	17.88	26.69	12.93	33.54	11.32	32.22	33.13	10.32	-1.47	-22.08	18.86	0.00	-0.60	14.98	11.87	10.42	15.29
2001-2002	19.53	38.90	33.55	18.38	17.77	10.93	42.00	10.93	37.08	22.96	16.11	-6.45	-14.25	11.78	0.00	-0.60	16.69	15.80	13.57	10.29
2002-2003	19.22	25.09	27.67	26.63	18.01	19.39	38.11	12.74	37.98	32.59	-0.47	-3.62	-15.89	7.88	-0.18	1.19	4.54	15.24	14.71	15.83
2003-2004	33.14	16.47	28.84	31.05	16.54	18.72	38.97	11.29	17.24	25.52	4.99	-653.06	-17.45	9.29	22.22	0.47	26.13	15.14	-14.16	18.35
2004-2005	14.77	6.95	29.06	17.59	7.51	19.05	32.50	11.60	4.11	24.63	-1.95	-12.69	-6.55	12.12	22.32	-6.92	22.80	24.35	0.72	67.49
2005-2006	19.49	9.95	28.40	20.05	8.60	20.32	25.03	11.21	0.47	19.91	0.50	-3.98	-15.74	10.53	27.85	1.76	10.39	13.39	1.04	9.80
2006-2007	19.03	28.22	24.53	18.94	9.60	19.53	36.66	6.21	-1.55	17.91	9.31	-3.12	-17.81	12.67	20.80	-3.88	3.58	9.00	-1.03	8.98
2007-2008	23.71	11.05	19.69	26.34	10.67	15.19	45.48	6.72	4.61	11.98	-1.51	0.42	-51.83	17.38	9.06	-5.01	6.74	16.37	-0.81	-4.77
2008-2009	24.74	12.85	23.57	23.43	27.89	12.18	40.11	3.98	1.56	13.61	1.98	0.49	-185.51	8.47	15.27	-15.07	5.66	7.72	0.44	10.57
2009-2010	24.47	16.80	23.37	27.41	16.11	5.18	26.75	5.79	4.38	14.98	9.66	19.97	-25.23	10.89	23.79	-7.42	4.56	10.02	2.51	-51.62
2010-2011	23.19	16.34	18.72	0.47	19.80	-1.25	27.05	3.01	19.67	15.00	10.12	-14.02	-15.70	7.76	15.97	-18.85	-131.29	2.06	1.43	-49.10
2011-2012	21.78	22.56	20.92	-1.10	15.34	18.57	31.34	4.74	22.21	14.87	10.24	-4.83	-20.97	1.53	120.35	-9.01	123.07	2.12	3.78	-10.19
2012-2013	34.87	21.19	21.55	-0.84	9.05	15.50	31.78	4.91	6.55	17.46	15.45	10.05	-29.64	-3.94	-1.82	-52.74	23.04	3.26	6.82	-95.71
2013-2014	40.91	23.03	18.14	1.73	7.59	16.01	31.33	8.13	0.17	18.74	16.35	9.05	-36.86	-7.24	-1.14	-36.08	35.24	21.77	11.45	-12.60
Average	23.11	19.65	25.20	16.17	16.25	14.12	33.92	8.41	14.17	21.09	7.32	-44.14	-32.84	8.91	18.30	-10.22	12.12	11.66	4.05	-3.19
S.D	7.86	8.36	4.82	10.99	7.87	6.10	6.08	3.54	14.13	7.27	6.36	168.67	43.61	7.26	30.24	15.42	49.38	6.73	7.39	38.29

**TABLE-5.3.1**

**Inventory Turnover Ratio(Times)**

Year	Lupin	Dr. Reddy's Lab	CIPLA	Piramal Enterprise	Aurobindo Pharmaceuticals	Cadilla Health care Ltd	Divis Lab	Strides Archolabs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgohem
1999-2000	2.99	4.77	2.54	4.22	5.75	5.35	3.33	2.57	4.61	4.19	1.56	1.86	7.57	3.68	0.00	0.00	2.47	2.66	4.59	3.14
2000-2001	4.69	4.18	2.72	4.22	4.70	4.78	2.96	2.32	2.70	4.19	2.41	1.53	6.21	5.30	0.00	0.00	6.94	1.95	4.28	3.46
2001-2002	4.92	4.85	2.48	5.02	6.81	4.15	3.49	2.54	3.76	5.37	3.08	2.08	5.99	4.79	0.00	0.00	4.65	3.22	3.27	2.52
2002-2003	5.95	4.47	1.94	5.18	4.53	4.33	2.64	7.13	3.40	4.12	2.91	1.87	6.50	2.33	0.00	0.00	3.67	2.07	5.13	1.99
2003-2004	4.20	5.09	2.64	5.78	3.93	5.70	1.84	6.62	3.98	4.14	3.17	26.15	5.12	4.41	9.32	0.89	4.16	5.37	9.88	2.07
2004-2005	4.12	4.56	2.35	4.26	2.97	4.65	1.75	2.72	4.75	6.46	2.69	1.93	6.23	4.71	12.19	5.01	4.06	7.79	1.53	1.65
2005-2006	4.35	3.81	2.39	5.54	3.16	4.88	1.43	2.96	4.85	4.85	3.49	2.13	6.27	5.23	13.13	4.78	3.23	7.23	1.23	2.49
2006-2007	4.11	5.04	2.80	5.89	2.92	3.62	2.27	4.43	5.15	4.23	4.19	2.37	8.59	5.52	6.40	3.24	1.73	8.02	7.93	1.57
2007-2008	3.25	4.31	2.99	6.01	2.94	4.26	2.17	3.29	5.57	3.92	2.55	1.10	9.41	4.02	3.92	2.98	1.67	7.53	7.21	1.85
2008-2009	3.33	4.41	2.85	6.30	2.50	4.28	1.68	6.06	5.53	3.57	7.35	3.34	21.47	3.07	4.09	8.82	1.76	3.89	7.56	3.38
2009-2010	3.99	3.69	2.79	7.22	2.78	4.65	1.06	6.75	2.80	3.53	5.49	2.86	10.48	4.19	3.99	6.35	2.09	9.64	5.97	3.91
2010-2011	4.20	3.73	2.66	6.66	2.51	4.76	1.49	3.29	2.88	3.67	5.41	2.18	56.89	4.84	3.74	24.15	5.87	8.39	6.22	16.68
2011-2012	3.88	3.64	2.96	4.83	2.89	4.94	1.76	4.57	3.53	3.59	5.04	1.43	21.85	3.99	2.10	23.40	6.77	7.58	6.57	13.65
2012-2013	3.94	4.22	2.60	5.84	3.43	5.06	1.62	5.91	2.21	1.08	5.88	1.49	18.21	5.78	3.88	10.80	2.88	10.75	7.47	77.24
2013-2014	4.39	4.38	2.94	4.46	3.85	4.88	1.67	6.69	3.06	4.84	4.89	1.51	144.05	5.07	3.41	5.13	4.16	17.66	8.82	8.50
Average	4.15	4.34	2.64	5.43	3.71	4.69	2.08	4.52	3.92	4.12	4.01	3.59	22.32	4.46	4.41	6.37	3.74	6.92	5.84	9.61
S.D	0.72	0.48	0.28	0.93	1.26	0.51	0.72	1.82	1.10	1.15	1.61	6.27	36.19	0.94	4.23	7.80	1.75	4.09	2.52	19.27

**TABLE-5.3.2**

**Debtors Turnover Ratio(Times)**

Year	Lupin	Dr. Reddy's Lab	CIPLA	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadilla Health care Ltd	Divis Lab	Strides Archoleabs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgohem
1999-2000	1.64	3.42	8.71	5.16	4.85	7.58	8.66	1.89	6.21	3.12	3.28	1.95	4.23	2.95	0.00	0.26	4.52	4.07	4.29	3.83
2000-2001	2.79	3.23	6.57	5.70	4.70	9.26	8.48	2.31	5.97	3.12	3.16	1.39	3.71	2.76	0.00	0.26	3.80	3.09	4.26	3.41
2001-2002	2.75	3.36	5.06	7.29	2.66	7.90	4.21	1.72	6.46	2.57	3.48	1.09	3.31	3.43	0.00	0.02	2.91	2.91	3.52	4.19
2002-2003	3.04	4.47	4.11	6.17	2.73	6.84	4.54	1.55	4.02	3.47	2.12	1.19	2.43	1.75	0.00	0.05	6.50	3.88	4.38	4.05
2003-2004	5.45	3.74	3.86	7.95	2.74	6.58	3.61	2.26	6.58	4.33	2.08	0.74	2.30	3.09	4.34	0.18	3.96	5.32	4.54	5.22
2004-2005	4.94	3.71	3.84	9.44	2.46	10.02	3.49	2.53	4.29	3.76	2.46	1.16	2.36	3.51	4.59	1.54	4.19	3.09	0.91	6.23
2005-2006	4.74	3.45	3.40	8.15	2.45	6.90	3.59	1.98	5.04	3.36	2.59	1.93	3.29	3.67	3.73	2.52	6.13	2.94	0.83	5.86
2006-2007	4.14	3.58	3.46	7.00	3.00	6.08	4.46	2.53	5.36	3.00	3.66	2.23	2.86	3.83	4.78	1.32	4.30	3.31	13.66	6.20
2007-2008	4.07	3.72	3.02	6.33	2.80	5.95	4.83	1.89	2.24	3.70	2.27	1.14	1.70	3.26	3.16	3.78	4.48	4.10	11.43	4.10
2008-2009	4.17	2.82	2.85	6.42	2.53	4.57	4.21	2.89	4.08	2.92	5.71	3.41	2.76	3.04	5.33	10.47	3.93	2.05	8.86	10.65
2009-2010	4.03	4.14	3.61	9.72	2.82	4.70	3.97	3.71	3.33	2.94	5.86	8.38	3.26	3.30	5.42	3.82	2.94	4.09	9.52	4.89
2010-2011	3.64	2.93	4.23	7.35	2.79	4.59	3.32	3.16	5.73	3.17	5.84	1.43	2.41	4.84	4.32	13.02	2.14	4.80	7.80	4.97
2011-2012	3.61	3.44	4.59	4.75	3.00	5.42	3.45	2.76	5.63	3.50	5.30	1.32	5.91	3.27	4.03	31.14	2.08	4.32	8.07	1.96
2012-2013	3.80	2.85	4.99	5.77	3.13	5.38	3.81	3.69	3.30	0.05	5.04	1.80	4.37	2.41	4.48	43.43	2.10	4.95	8.29	3.08
2013-2014	3.13	2.13	5.43	7.19	2.39	5.60	3.18	3.89	6.25	4.45	5.53	1.75	4.66	1.63	4.28	30.67	2.80	6.41	8.38	0.32
Average	3.73	3.40	4.52	6.96	3.00	6.49	4.52	2.58	4.97	3.16	3.89	2.06	3.30	3.12	3.23	9.50	3.79	3.96	6.58	4.60
S.D	0.97	0.57	1.52	1.44	0.75	1.64	1.71	0.75	1.34	1.00	1.49	1.86	1.11	0.80	2.09	14.04	1.34	1.12	3.70	2.30

**TABLE-5.3.3**

**Cash Turnover Ratio (Times)**

Year	Lupin	Dr. Reddy's Lab	CIPLA	Piramal Enterprise	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgohem
1999-2000	23.17	19.96	164.54	8.77	49.36	1.18	45.84	15.23	101.25	12.23	34.46	34.65	16.67	81.96	0	0	25.34	267.75	4.88	20.86
2000-2001	54.72	47.34	169.45	15.15	207.55	11.41	45.2	18.33	53.12	12.23	77.29	126.5	24.96	80.04	0	0	50.34	208.6	4.86	26.05
2001-2002	45.57	3.05	82.79	37.96	87.89	94.83	47.53	8.33	47.11	77.83	70.25	59	13.7	107.81	0	0.83	38.46	331	3.94	40.01
2002-2003	69.63	2.22	111.3	66.13	33.56	103.9	46.89	22.98	10.08	250.62	39.72	63.4	25.5	235.5	0	5.5	35.83	296.5	7.69	50.29
2003-2004	78.26	4.07	307.68	88.77	33.51	29.33	43.56	18.62	11.14	1.58	45.51	22.66	12.69	337.39	19.71	0.03	28.64	137.48	7.36	33.52
2004-2005	51.01	1.73	146.58	177.52	78.59	41.28	79.37	13.1	1.13	19.01	29.06	29	16.32	343.46	8.95	1.37	25.19	32.33	1.88	24.41
2005-2006	3.62	3.07	67.02	130.38	9.8	555.04	37.98	4.75	1.04	34.40	31.52	50.25	5.38	80.26	14.66	7.5	1.44	4.87	1.63	38.5
2006-2007	5.62	2.59	27.08	73	3.75	116.95	42.56	28.98	1.38	10.81	46.15	101.25	13.03	23.22	6.3	7.38	1.44	48.33	1.89	24.07
2007-2008	11.97	6.22	53.01	56.28	9.33	88.51	82.17	3.12	2.2	10.27	23.79	12.57	5.76	9.49	16.76	0.13	5.48	35.15	82.88	26.78
2008-2009	243.58	10.4	98.76	132.9	32.14	68.1	92.72	36.21	2.19	14.94	57.59	28	5.5	23.94	26.66	0.19	15.36	6.79	38.16	25.94
2009-2010	98.61	11.94	92.13	169.72	713.17	66.86	72.38	24.52	9.85	14.63	35.17	1.36	4.24	34.67	19.75	0.4	6.08	34.26	235.93	22.72
2010-2011	119.99	78.37	75.38	0.95	33.76	51.39	102.92	6.22	2.48	6.31	57.1	23.88	5.42	81.55	40.78	4.44	5.89	41.45	92.44	5.88
2011-2012	280.45	7.87	126.72	87.06	303.22	26.64	84.54	8.94	3.02	38.88	28.13	21.72	32.73	30.4	21.08	1.26	8.79	20.25	67.55	1.39
2012-2013	354	9.17	78.06	57.88	47.35	40.12	61.38	24.27	5.64	0.11	68.93	46.23	19.86	35.25	10.1	1.93	469.02	24.72	64.26	239.7
2013-2014	61.11	14.62	114.32	57.87	731.55	45.21	70.28	6.08	20.03	10.79	66.51	39.83	4.43	32.72	17.82	0.43	9.43	101.2	41.63	18.92
Average	100.08	14.84	114.32	77.35	158.30	89.38	63.68	15.97	18.11	19.27	47.41	44.02	13.74	102.51	13.50	2.09	48.44	106.04	43.79	39.93
S.D	106.99	21.00	66.71	54.77	242.91	133.18	21.11	9.93	28.23	102.60	17.60	33.24	8.97	111.19	11.63	2.71	117.31	113.93	62.31	56.60

**TABLE-5.3.4**

**Creditors Turnover Ratio (Times)**

Year	Lupin	Dr. Reddy's Lab	Cipla	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Organchem
1999-2000	2.81	4.89	3.93	3.02	5.82	3.34	2.64	3.00	5.75	2.22	2.28	5.79	1.56	3.68	0.00	0.00	2.41	4.67	4.85	2.52
2000-2001	4.05	5.05	3.54	2.88	5.29	4.35	2.47	2.34	7.48	2.19	4.46	5.63	1.48	5.72	0.00	0.00	3.02	6.97	3.66	1.87
2001-2002	2.63	3.26	2.73	2.92	4.31	2.88	2.43	1.32	6.70	2.03	2.19	6.82	1.02	6.76	0.00	4.27	2.85	5.53	2.11	2.03
2002-2003	2.64	3.03	2.18	3.48	3.09	2.35	2.04	1.90	5.16	2.11	2.69	2.13	0.75	3.25	0.00	8.13	2.94	7.42	5.71	2.08
2003-2004	2.57	2.86	2.71	3.76	3.91	2.44	2.07	2.78	3.52	2.18	1.65	14.10	0.81	4.68	3.25	0.31	2.39	2.68	10.72	2.23
2004-2005	2.50	2.37	2.39	3.08	2.90	2.32	2.07	2.72	3.57	1.73	1.24	1.88	0.73	3.51	4.89	2.05	3.73	1.97	4.49	2.26
2005-2006	2.73	2.09	2.47	3.22	2.64	2.47	1.47	2.18	3.77	2.04	1.23	0.61	0.64	3.69	3.15	1.02	4.86	2.35	0.37	2.39
2006-2007	2.85	2.54	3.35	3.15	3.13	1.81	2.50	2.10	3.85	2.58	2.19	0.87	0.59	3.58	3.79	0.81	3.13	2.35	2.03	2.36
2007-2008	2.95	2.97	2.84	3.30	3.15	2.81	2.53	1.32	2.24	2.82	1.21	0.33	0.50	4.17	2.23	2.14	2.96	2.79	2.34	1.89
2008-2009	2.12	2.36	2.81	3.41	3.17	2.79	2.70	2.11	3.18	2.32	2.27	0.54	1.49	4.02	4.01	4.73	2.91	1.27	2.05	2.34
2009-2010	2.98	1.83	2.98	3.50	2.88	2.80	2.08	2.42	3.79	1.77	2.63	0.16	0.77	4.10	2.39	4.00	3.00	26.48	2.18	1.67
2010-2011	3.31	2.16	3.58	1.38	2.88	2.82	2.31	1.59	5.61	2.08	2.97	1.16	0.44	4.73	1.91	2.94	0.58	2.47	2.19	3.29
2011-2012	2.92	2.67	3.81	1.04	2.63	2.33	2.65	1.55	5.35	2.44	2.34	1.03	0.36	2.19	1.26	0.58	0.69	1.38	2.17	1.49
2012-2013	3.23	2.50	3.70	1.37	3.58	3.16	2.96	1.95	2.87	0.03	2.71	1.34	0.48	2.84	1.60	1.02	1.17	1.87	2.35	2.73
2013-2014	3.62	2.94	3.77	1.33	2.63	2.97	3.05	1.43	2.78	2.80	3.36	1.41	0.29	2.31	1.77	1.10	1.65	2.48	2.70	0.38
Average	2.93	2.90	3.12	2.72	3.47	2.78	2.40	2.05	4.38	2.09	2.36	2.92	0.79	3.95	2.02	2.21	2.55	4.84	3.33	2.10
S.D	0.48	0.93	0.58	0.93	0.97	0.58	0.40	0.54	1.54	0.65	0.87	3.77	0.42	1.20	1.59	2.26	1.14	6.29	2.45	0.65

**TABLE-5.3.5**  
**Operating Cycle Period (in Days)**

Year	Lupin	Dr. Reddy's Lab	Cipla	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Organchem
1999-2000	233.03	183.65	121.68	138.53	116.88	367.45	70.66	225.43	147.37	92.1	229.46	265.87	89.58	176.77	150.45	402.24	124.4	202.88	224.74	122.62
2000-2001	227.36	165.99	123.93	131	116.89	117.29	70.66	316.99	168.9	92.3	327.04	394.62	87.43	165.25	146.84	137.50	72.24	312.33	225.8	99.61
2001-2002	199.3	243.85	134.24	84.28	146.46	170.25	89.48	256.48	113.47	84.56	233.63	559.32	47.18	159.83	0	153.08	118.48	246.53	194.7	117.51
2002-2003	162.54	270.31	157.36	100.18	160.11	44.27	84.22	216.1	141.53	80.01	423.03	278.52	-12.61	205.46	121.25	69.63	64.76	195.36	351.29	149.8
2003-2004	86.2	201.5	129.3	59.31	194.17	34.01	141.63	375.38	93.67	286.18	415.36	428.82	1.24	158.14	172.84	118.31	73.64	117.24	351.29	116.48
2004-2005	93.87	317.56	141.4	50.36	242.25	40.69	168.79	253.78	514.43	18.66	268.05	184.36	-26.29	132.54	149.55	406.4	122.56	97.77	1777.93	82.32
2005-2006	191.54	287.52	155.3	58.93	277.08	67.54	182.58	277.85	519.57	44.14	254.58	-17.24	-20.36	127.98	80.66	-8.14	373.58	256.51	1309.08	151.51
2006-2007	172.36	263.93	179.98	91.69	346.8	60.47	135.56	183.65	398.19	97.58	283.99	-138.64	-138.12	112.88	127.08	389.27	473.77	329.5	134.09	322.25
2007-2008	147.9	211.04	201.02	100.7	279.42	100.54	119.59	476.79	274.06	108.23	294.73	-557.46	-246.11	197.74	150.78	310.38	358.49	202.08	-59.49	316.26
2008-2009	91.92	217.13	196.07	150.53	257.48	97.61	160.75	140.78	221.25	175.29	217.4	-411.2	-276.42	214.73	188.46	236.70	236.38	97.32	-54.55	157.25
2009-2010	134.74	144.48	190.01	114.53	214.21	99.81	200.8	142.24	187.91	192.28	184.42	-441.81	-268.98	152.53	91.29	135.15	310.21	170.29	-39.97	160.02
2010-2011	139.32	190.22	201.12	196.83	226.88	134.69	183.49	1023.27	261.56	205.79	152.64	-82.78	-459.57	125.56	107.6	-16.583	-416.1	136.36	-37.63	228.66
2011-2012	138.55	174.4	175.71	138.83	179.8	117.27	163.7	641.67	211.92	200.35	166.66	15.38	-986.41	163.01	20.48	146.20	-432.71	136.4	-40.73	623.24
2012-2013	126.07	178.52	166.55	272.62	188.34	139.03	178.85	155.93	319.48	156.04	157.5	51.39	-1142.82	229.95	71.8	242.49	104.21	144.47	-37.19	193.82
2013-2014	143.92	217.36	143.66	290.69	201.55	132.79	188.3	120.67	-160.49	168.08	181.62	66.5	-1474.42	235.68	89.13	-126.17	121.95	-5.77	-11.83	923.3
Average	152.57	217.83	161.15	131.93	209.88	114.91	142.60	320.46	227.52	133.43	252.67	39.71	-321.77	170.53	111.21	173.10	113.72	175.95	285.83	250.97
S.D	45.73	49.35	28.36	72.24	63.91	80.67	45.26	239.73	170.94	71.55	85.49	329.47	489.79	38.73	53.41	159.75	252.99	87.97	538.92	230.62



**TABLE-5.4.1**

**Current Assets to Total Assets Ratio**

Year	Lupin	Dr. Reddy's Lab	CIPLA	Piramal Enterprise	Aurobindo Pharmaceuticals	Cadilla Health care Ltd	Divis Lab	Strides Archoleabs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parental Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgohem
1999-2000	0.46	0.42	0.57	0.46	0.7	0.67	0.38	0.42	0.51	0.51	0.44	0.2	0.55	0.58	0.99	0.63	0.49	0.47	0.31	0.6
2000-2001	0.6	0.52	0.61	0.5	0.69	0.36	0.46	0.47	0.59	0.51	0.51	0.19	0.54	0.61	0.98	0.63	0.39	0.47	0.35	0.6
2001-2002	0.61	0.73	0.69	0.52	0.65	0.4	0.52	0.33	0.49	0.45	0.53	0.19	0.51	0.61	0.97	0.63	0.46	0.53	0.36	0.63
2002-2003	0.61	0.68	0.71	0.59	0.57	0.34	0.48	0.44	0.55	0.5	0.47	0.12	0.51	0.6	0.4	0.63	0.36	0.5	0.35	0.63
2003-2004	0.54	0.53	0.64	0.49	0.55	0.34	0.55	0.51	0.33	0.72	0.52	0.59	0.56	0.59	0.59	0.55	0.46	0.64	0.32	0.54
2004-2005	0.51	0.67	0.67	0.44	0.52	0.35	0.59	0.33	0.54	0.27	0.39	0.5	0.56	0.58	0.59	0.25	0.55	0.64	0.46	0.51
2005-2006	0.66	0.6	0.66	0.39	0.58	0.4	0.54	0.41	0.62	0.28	0.4	0.35	0.6	0.59	0.52	0.13	0.72	0.72	0.46	0.53
2006-2007	0.64	0.67	0.64	0.42	0.67	0.43	0.5	0.25	0.56	0.36	0.39	0.25	0.52	0.54	0.5	0.24	0.71	0.66	0.13	0.46
2007-2008	0.58	0.5	0.65	0.51	0.64	0.42	0.48	0.45	0.53	0.3	0.43	0.1	0.58	0.6	0.5	0.49	0.58	0.5	0.06	0.48
2008-2009	0.53	0.52	0.64	0.56	0.64	0.39	0.5	0.22	0.44	0.41	0.46	0.07	0.35	0.4	0.58	0.35	0.34	0.43	0.09	0.36
2009-2010	0.53	0.43	0.65	0.53	0.58	0.41	0.44	0.27	0.26	0.49	0.51	0.22	0.45	0.37	0.45	0.25	0.35	0.49	0.1	0.49
2010-2011	0.52	0.49	0.56	0.82	0.58	0.43	0.46	0.59	0.39	0.5	0.54	0.18	0.45	0.29	0.46	0.09	0.37	0.5	0.12	0.35
2011-2012	0.55	0.51	0.51	0.41	0.54	0.41	0.47	0.69	0.37	0.48	0.57	0.35	0.25	0.25	0.47	0.09	0.59	0.5	0.14	0.33
2012-2013	0.58	0.56	0.44	0.35	0.57	0.41	0.49	0.21	0.37	0.49	0.61	0.32	0.25	0.25	0.47	0.12	0.54	0.51	0.16	0.1
2013-2014	0.5	0.56	0.42	0.25	0.54	0.41	0.48	0.38	0.36	0.52	0.66	0.26	0.25	0.28	0.47	0.19	0.49	0.53	0.24	0.47
Average	0.56	0.55	0.60	0.48	0.60	0.41	0.48	0.39	0.46	0.45	0.49	0.25	0.46	0.47	0.59	0.35	0.49	0.53	0.24	0.472
S.D	0.05	0.09	0.08	0.12	0.05	0.07	0.04	0.13	0.10	0.11	0.08	0.14	0.12	0.14	0.20	0.21	0.12	0.08	0.13	0.14

**TABLE-5.4.2**

**Inventory to Current Assets Ratio (%)**

Year	Lupin	Dr. Reddy's Lab	Cipla	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Organchem
1999-2000	17.59	23.96	44.80	32.25	31.30	12.38	61.54	35.47	29.16	32.74	42.84	28.31	18.08	33.29	0	0	51.58	45.78	21.65	51.10
2000-2001	21.07	28.21	43.43	29.72	38.95	33.19	56.12	28.94	42.42	32.51	30.79	31.42	19.83	26.32	0	0	27.26	40.19	22.15	47.24
2001-2002	19.34	15.07	40.92	33.39	21.83	26.62	41.26	29.18	40.21	24.39	25.14	20.53	17.55	32.30	0	0	30.16	29.52	25.53	60.81
2002-2003	17.81	16.20	45.63	31.13	26.75	42.95	47.45	10.66	31.93	34.05	22.49	32.26	14.31	33.59	0	0	54.66	59.88	17.98	64.38
2003-2004	33.26	19.20	39.61	35.71	28.53	36.16	50.69	12.12	33.32	15.37	16.91	23.83	16.65	33.77	11.88	2.29	37.48	25.88	18.13	67.71
2004-2005	36.69	15.18	42.54	48.32	31.94	40.14	51.18	31.91	10.62	24.95	25.17	28.53	13.42	32.58	10.48	16.32	37.87	15.98	12.19	67.72
2005-2006	22.90	18.47	41.74	35.09	26.16	33.86	51.84	22.27	11.65	31.47	21.21	22.63	10.53	31.00	13.02	23.15	21.86	11.04	13.06	67.66
2006-2007	27.12	12.10	34.52	29.37	24.42	39.63	48.60	20.41	15.20	31.39	19.12	12.12	7.49	29.75	19.89	20.37	34.50	8.26	16.25	76.70
2007-2008	36.10	19.14	29.92	24.27	28.63	33.45	47.46	11.29	13.38	31.94	16.92	7.36	6.19	27.13	29.52	6.79	41.92	16.83	43.00	69.70
2008-2009	39.32	18.99	31.63	18.78	28.02	33.86	49.91	16.67	17.74	24.90	13.18	18.03	13.41	34.12	28.54	5.86	54.17	15.65	36.52	73.97
2009-2010	30.58	24.60	27.58	19.15	35.06	31.58	57.57	13.75	33.65	21.99	19.54	0	7.75	31.07	29.84	8.02	40.39	11.78	47.24	62.02
2010-2011	30.76	23.29	39.59	2.11	36.73	30.57	51.04	7.16	20.50	20.88	22.66	3.17	0.88	35.52	30.87	11.12	25.94	12.48	44.16	19.06
2011-2012	32.98	24.52	39.55	4.66	36.53	25.05	48.74	5.89	18.46	24.87	21.84	4.4	4.02	31.95	27.03	4.75	27.61	13.13	43.52	7.28
2012-2013	32.42	22.44	45.74	4.52	36.35	25.42	51.22	15.63	25.21	24.06	20.51	7.40	5.03	22.06	31.94	27.09	30.22	10.54	41.39	11.94
2013-2014	26.44	19.00	46.19	6.84	36.48	25.61	46.69	14.02	18.10	21.35	24.25	4.98	0.61	24.02	38.37	27.61	22.97	16.13	32.75	11.22
Average	28.29	20.02	39.56	23.69	31	31.36	50.75	18.36	24.10	26.46	22.84	16.33	10.38	30.56	18.09	10.22	35.90	22.20	29.04	50.57
S.D	7.16	4.40	5.98	13.87	5	7.62	4.86	9.27	10.39	5.54	6.93	11.27	6.32	3.95	13.78	10.14	10.91	15.24	12.66	25.10

TABLE-5.4.3

Sundry Debtors to Current Assets Ratio

Year	Lupin	Dr. Reddy's Lab	Cipla	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Organic
1999-2000	46.58	43.97	17.07	43.58	44.72	6.95	29.87	62.53	28.56	58.95	25.58	57.13	27.93	49.08	0.00	99.53	33.50	33.08	29.97	40.14
2000-2001	43.15	51.02	23.58	40.22	45.34	7.44	25.79	37.98	26.95	58.52	29.33	54.72	26.86	59.98	0.00	96.73	57.58	33.04	28.59	42.73
2001-2002	43.98	35.34	26.31	40.75	63.97	6.91	48.29	58.59	33.07	65.07	29.40	33.20	27.27	49.84	0.00	96.73	58.06	41.83	32.90	37.68
2002-2003	42.55	23.16	27.52	47.92	53.58	11.42	40.05	64.26	40.46	53.77	30.47	40.64	32.17	51.01	0.00	16.10	32.37	39.03	29.97	27.64
2003-2004	33.34	33.05	34.69	45.02	50.21	12.91	40.87	43.66	26.50	21.23	29.71	30.83	31.19	52.47	32.27	36.90	49.72	29.15	30.40	19.87
2004-2005	34.82	20.87	33.51	33.30	43.58	8.09	37.61	45.77	13.37	60.51	25.94	22.47	33.39	48.41	34.30	48.47	44.65	47.89	21.87	10.42
2005-2006	25.72	24.23	38.21	43.64	38.83	11.88	30.30	44.20	11.35	61.58	28.99	35.14	17.12	47.98	56.13	39.23	13.64	31.94	21.52	13.71
2006-2007	32.34	26.21	36.29	48.05	27.87	12.45	38.06	43.72	14.14	57.27	27.28	55.15	18.03	47.55	33.39	2.78	14.91	23.34	8.90	10.96
2007-2008	36.47	26.81	37.23	53.20	35.13	12.22	36.89	26.38	36.25	42.98	17.69	81.05	20.07	40.76	40.95	1.19	17.91	37.21	26.03	19.09
2008-2009	38.95	36.68	41.57	54.23	42.13	14.63	35.75	40.52	24.79	39.71	17.57	67.21	36.77	40.61	26.00	5.98	28.00	36.24	31.67	9.60
2009-2010	39.28	29.08	28.32	47.56	42.73	13.82	28.14	29.89	32.66	34.47	20.95	9.20	19.40	47.20	29.08	7.51	32.68	31.77	31.90	27.70
2010-2011	45.14	38.80	31.47	39.28	43.14	13.62	37.12	8.85	18.00	31.78	23.54	79.37	16.28	40.22	32.30	1.11	46.80	22.47	36.44	19.82
2011-2012	43.76	35.92	32.94	46.42	42.74	12.20	40.02	11.95	20.58	32.52	23.31	82.20	8.94	40.60	35.33	0.86	50.90	23.68	37.94	17.69
2012-2013	45.67	43.59	32.12	45.94	43.94	12.31	35.52	28.92	21.41	28.63	27.71	77.31	10.45	47.23	27.11	0.65	53.85	23.81	41.21	15.88
2013-2014	55.12	54.45	31.79	44.94	63.31	11.56	41.38	28.01	8.92	29.54	24.99	51.83	9.78	61.55	30.19	36.92	38.18	47.37	29.24	22.35
Average	40.46	34.88	31.51	44.94	45.41	11.23	36.38	38.35	23.80	45.10	25.50	51.83	22.38	48.30	25.14	32.71	38.18	33.46	29.24	22.35
S.D	7.18	10.16	6.23	5.30	9.44	2.58	5.85	16.46	9.51	14.80	4.19	22.89	9.09	6.46	17.20	37.36	15.05	8.28	7.74	10.76

**TABLE-5.4.4**

**Cash and Bank to Current Assets Ratio (%)**

Year	Lupin	Dr. Reddy's Lab	Cipla	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parental Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgchem
1999-2000	2.08	1.78	0.81	8.46	0.93	0.88	1.37	1.98	1.61	0.01	0.60	0.90	4.96	1.15	0	0	2.44	0.50	24.29	1.51
2000-2001	0.99	3.24	0.84	10.08	0.47	13.93	1.23	2.39	2.76	0.01	0.58	0.60	2.72	1.61	0	0	0.66	0.19	22.70	0.68
2001-2002	1.75	0.87	0.72	5.08	1.62	1.18	1.48	4.40	4.50	0.03	0.38	0.61	4.62	1.35	0	2.80	0.40	0.14	10.80	0.32
2002-2003	1.00	1.32	0.31	2.92	3.87	2.00	1.04	1.70	1.74	0.01	0.46	0.76	1.78	0.03	0	0.93	0.42	0.31	16.34	0.10
2003-2004	0.74	4.42	0.34	2.82	3.84	6.00	0.78	3.04	1.17	0.27	0.19	1	3.32	0.13	3.53	6.30	3.03	0.83	17.99	1.15
2004-2005	1.97	2.05	0.87	1.31	1.07	0.41	0.72	6.12	0.22	0.69	0.73	0.89	2.29	0.11	14.31	16.55	1.42	0.41	10.58	1.11
2005-2006	0.85	1.06	1.93	1.78	2.79	0.28	0.47	2.11	0.49	0.11	0.39	1.35	8.68	1.71	6.23	3.54	0.99	8.98	10.92	1.43
2006-2007	1.19	3.68	1.98	2.85	0.66	0.98	2.37	1.78	1.62	0.96	0.26	1.21	2.31	1.56	23.22	2.98	0.74	1.01	64.19	2.15
2007-2008	0.66	2.00	2.11	1.34	0.15	0.77	1.04	14.09	0.79	0.93	0.33	7.36	4.24	3.11	5.85	0.15	14.56	1.32	2.81	0.55
2008-2009	0.51	2.17	1.19	1.13	3.01	0.96	0.90	1.11	0.73	0.67	0.22	8.19	11.37	3.34	3.43	0.16	0.30	9.24	6.05	0.81
2009-2010	1.56	1.31	1.10	1.04	0.14	0.63	1.21	2.79	1.54	6.92	0.41	56.57	10.25	2.67	5.66	0.24	4.43	1.24	0.83	0.92
2010-2011	1.37	1.45	1.76	0.09	0.12	0.92	0.93	3.61	41.48	14.07	0.41	4.76	3.76	1.27	0.47	5.00	17.01	0.58	1.16	37.05
2011-2012	0.56	1.72	1.19	0.23	0.41	5.91	0.64	2.87	38.29	2.76	4.39	5	1.61	4.36	6.75	27.25	12.06	5.05	4.53	54.22
2012-2013	0.49	13.51	2.05	0.41	2.90	3.96	2.20	4.39	12.51	12.01	2.02	3.00	2.29	3.23	12.00	19.33	0.24	4.77	5.31	1.11
2013-2014	2.81	7.93	0.84	0.72	0.20	3.45	1.86	17.93	2.78	12.19	2.07	3.32	10.27	3.05	7.25	45.91	13.78	3.00	8.03	1.46
Average	1.23	3.23	1.20	2.68	1.48	2.82	1.21	4.69	7.48	3.44	0.90	6.37	4.96	1.91	5.91	8.74	4.83	2.51	13.77	6.97
S.D	0.68	3.36	0.61	2.99	1.40	3.62	0.55	4.82	13.50	5.15	1.13	14.11	3.41	1.32	6.49	13.21	6.12	3.10	15.76	16.03

**TABLE-5.4.5**  
**Loans and Advances to Current Assets Ratio (%)**

Year	Lupin	Dr. Reddy's Lab	Cipla	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archo Labs	Sun Pharmaceutical	Biocon Pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parenteral Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgchem
1999-2000	32.53	24.55	37.22	17.78	19.58	10.91	9.73	34.72	40.52	10.92	29.14	11.34	46.90	15.85	100	0.46	8.95	20.62	16.24	6.24
2000-2001	33.56	17.27	32.06	33.41	14.67	29.74	13.31	24.28	27.60	8.94	38.67	11.54	49.30	11.62	100	0.46	10.81	26.27	15.79	13.46
2001-2002	34.01	10.79	31.15	35.06	12.26	55.12	5.94	26.60	22.18	10.43	43.99	12.76	48.59	16.26	100	0.46	7.38	28.27	19.78	12.98
2002-2003	37.78	14.19	25.82	34.59	15.30	21.37	9.32	28.29	11.45	11.43	45.40	17.65	50.44	15.02	100	2.33	7.09	26.08	28.67	10.89
2003-2004	31.07	17.38	25.26	29.89	17.14	18.02	5.05	34.99	24.54	5.26	52.01	18.5	46.51	13.27	49.15	2.35	5.92	26.46	36.76	5.27
2004-2005	25.85	19.37	23.07	25.57	23.11	31.86	9.55	37.68	25.35	13.33	46.68	24.71	48.34	18.51	37.63	5.51	10.06	31.55	55.30	2.70
2005-2006	17.71	30.16	18.097	34.55	25.30	36.31	14.99	34.15	22.53	6.33	47.41	40.87	61.90	18.81	16.56	12.11	6.50	37.76	54.45	15.81
2006-2007	16.72	25.53	24.54	37.95	25.38	30.10	9.34	40.20	15.77	9.74	51.42	31.51	70.53	14.86	21.41	33.38	6.31	66.79	10.56	36.19
2007-2008	15.02	37.99	30.72	43.32	25.71	36.07	13.46	52.15	13.53	23.53	63.69	4.21	67.81	18.10	21.80	13.30	25.52	41.61	27.37	39.82
2008-2009	21.05	34.39	25.59	56.47	26.53	26.59	12.71	38.53	11.35	34.61	67.49	6.55	31.42	20.11	40.26	27.01	10.67	37.18	24.45	40.96
2009-2010	28.53	36.22	42.98	61.46	22.03	32.83	12.74	51.82	22.62	36.60	56.02	34.21	57.93	17.23	33.09	29.52	11.12	52.66	19.56	43.33
2010-2011	22.72	36.45	27.16	79.79	16.56	35.36	10.62	79.50	20.01	31.35	51.38	12.69	75.60	21.87	33.40	59.38	10.24	62.42	16.32	54.82
2011-2012	22.69	23.86	26.31	90.86	20.29	39.97	9.60	78.47	22.667	39.68	50.45	8.4	85.43	23.08	30.88	66.87	9.42	58.12	14.00	54.04
2012-2013	21.41	20.44	20.08	90.84	16.79	41.02	11.04	51.05	40.86	35.29	49.74	12.26	82.21	27.47	28.93	52.70	15.68	60.87	12.07	81.76
2013-2014	15.61	18.60	21.16	86.58	18.53	43.06	10.06	40.03	70.18	36.90	48.68	16.05	79.32	11.36	24.18	25.82	16.79	33.49	19.31	74.91
Average	25.08	24.48	27.41	50.54	19.95	32.56	10.50	43.50	26.08	20.96	49.48	17.55	60.15	17.56	49.15	22.11	10.83	40.68	24.71	32.88
S.D	7.42	8.736	6.56	25.26	4.54	10.80	2.71	16.74	15.02	13.21	9.15	10.69	15.98	4.36	32.73	22.66	5.14	15.46	14.05	25.70

**TABLE-5.5.1**

**Working Capital Leverage**

Year	Lupin	Dr. Reddy's Lab	Cipla	Piramal Enterprise	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archoleabs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambalal Sarabhai Enterprises	Parental Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgohem
1999-2000	0.43	0.39	0.63	0.36	0.66	0.65	0.20	0.37	0.45	0.33	0.38	0.18	0.27	0.50	0.99	0.63	0.35	0.40	0.28	0.59
2000-2001	0.37	0.39	0.56	0.39	0.54	0.60	0.26	0.37	0.48	0.33	0.41	0.17	0.30	0.51	0.99	0.64	0.25	0.38	0.28	0.51
2001-2002	0.55	0.50	0.61	0.37	0.52	0.30	0.33	0.22	0.48	0.26	0.50	0.18	0.23	0.58	0.99	0.64	0.29	0.45	0.28	0.48
2002-2003	0.53	0.60	0.65	0.45	0.44	0.19	0.31	0.30	0.45	0.28	0.41	0.09	0.10	0.56	1.01	0.64	0.22	0.44	0.30	0.58
2003-2004	0.54	0.52	0.63	0.41	0.44	0.16	0.38	0.40	0.27	0.43	0.43	0.53	0.16	0.52	0.43	0.37	0.24	0.46	0.30	0.64
2004-2005	0.37	0.53	0.61	0.31	0.44	0.18	0.46	0.30	0.37	0.15	0.33	0.37	0.11	0.50	0.54	0.27	0.33	0.46	0.43	0.83
2005-2006	0.44	0.52	0.55	0.26	0.44	0.23	0.40	0.34	0.54	0.13	0.26	0.04	0.13	0.45	0.54	0.02	0.47	0.46	0.44	0.91
2006-2007	0.56	0.53	0.55	0.28	0.50	0.24	0.36	0.20	0.55	0.22	0.27	-0.20	0.13	0.40	0.38	0.14	0.68	0.50	0.13	0.86
2007-2008	0.48	0.56	0.56	0.38	0.61	0.28	0.36	0.31	0.46	0.21	0.34	-0.20	0.11	0.44	0.32	0.34	0.63	0.39	-0.03	0.85
2008-2009	0.44	0.45	0.56	0.42	0.55	0.28	0.38	0.17	0.40	0.30	0.37	-0.27	-1.82	0.34	0.42	0.43	0.35	0.37	-0.04	0.82
2009-2010	0.38	0.36	0.62	0.48	0.52	0.29	0.38	0.20	0.26	0.36	0.38	-0.41	0.10	0.30	0.32	0.28	0.28	0.46	-0.03	0.79
2010-2011	0.42	0.36	0.57	0.48	0.46	0.30	0.38	0.42	0.32	0.40	0.43	-0.05	0.09	0.23	0.31	0.01	0.66	0.49	-0.03	0.55
2011-2012	0.44	0.42	0.46	0.66	0.47	0.29	0.40	0.61	0.35	0.42	0.44	0.03	-1.98	0.16	0.14	-0.18	1.96	0.34	-0.05	0.77
2012-2013	0.46	0.46	0.37	0.32	0.45	0.31	0.43	0.88	0.36	0.42	0.47	0.11	-0.68	0.17	0.21	-0.38	0.14	0.33	-0.05	10.63
2013-2014	0.47	0.46	0.34	1.48	0.44	0.32	0.42	0.23	0.38	0.43	0.51	0.16	-2.22	0.18	0.25	-0.05	0.42	0.43	0.00	0.36
Average	0.46	0.47	0.55	0.47	0.50	0.31	0.36	0.36	0.41	0.31	0.40	0.05	-0.33	0.39	0.52	0.25	0.49	0.42	0.15	1.34
S.D	0.06	0.08	0.09	0.30	0.07	0.14	0.07	0.18	0.09	0.10	0.07	0.25	0.90	0.15	0.32	0.32	0.44	0.05	0.19	2.57

**TABLE-5.5.2**

**Risk Analysis (Working Capital financing)**

Year	Lupin	Dr. Reddy's Lab	CIPLA	Piramal Enterprises	Aurobindo Pharmaceuticals	Cadila Health care Ltd	Divis Lab	Strides Archoleabs	Sun Pharmaceutical	Biocon pharmaceuticals Ltd	Kopran	Biofil Chemicals & pharmaceuticals	Ambal Sarabhai Enterprises	Parental Drugs (India) Ltd	Sequent Scientific	Zenotech	Markans Pharma	Wanbury	Morepen Labs	Hiran Orgchem
1999-2000	0.75	0.95	0.50	0.62	0.70	0.82	0.50	0.78	0.72	0.46	0.75	2.19	0.29	0.71	1.00	1.32	0.53	0.77	0.81	1.06
2000-2001	0.76	0.92	0.53	0.55	0.69	0.62	0.50	0.78	0.75	0.46	0.87	2.57	0.24	0.76	1.00	1.32	0.44	0.89	0.81	0.91
2001-2002	0.66	0.80	0.49	0.52	0.69	0.63	0.50	0.62	0.67	0.39	0.71	1.08	0.11	0.76	1.00	1.31	0.55	0.83	0.76	0.92
2002-2003	0.58	0.77	0.49	0.53	0.65	0.33	0.42	0.63	0.64	0.41	0.85	0.80	-0.02	0.76	1.00	1.31	0.38	0.82	0.64	0.79
2003-2004	0.43	0.69	0.48	0.41	0.74	0.26	0.58	0.72	0.45	0.73	0.79	0.71	0.005	0.71	0.67	1.48	0.40	0.50	0.87	1.74
2004-2005	0.44	0.68	0.50	0.32	0.45	0.27	0.61	1.04	0.82	0.11	0.47	0.63	-0.05	0.62	0.65	1.60	0.65	0.40	0.66	1.66
2005-2006	0.64	0.66	0.56	0.38	0.73	0.38	0.55	0.82	0.82	0.25	0.53	0.5	-0.03	0.62	0.46	0.45	0.87	0.66	0.65	0.99
2006-2007	0.64	0.68	0.62	0.53	0.80	0.29	0.63	0.23	0.83	0.46	0.52	0.29	-0.19	0.57	0.56	0.77	0.84	0.70	0.46	0.66
2007-2008	0.61	0.58	0.62	0.51	0.76	0.47	0.59	0.80	0.61	0.47	0.65	-0.42	-0.23	0.73	0.54	0.95	0.80	0.57	-0.45	-0.79
2008-2009	0.41	0.62	0.64	0.63	0.76	0.48	0.67	0.86	0.62	0.56	0.60	-1.60	-0.77	0.73	0.72	0.87	0.72	0.40	-0.40	-1
2009-2010	0.59	0.48	0.53	0.56	0.66	0.43	0.62	0.43	0.56	0.54	0.62	-0.80	-0.46	0.66	0.39	0.90	0.76	0.61	-0.31	-0.51
2010-2011	0.60	0.60	0.70	0.89	0.71	0.45	0.56	0.79	0.70	0.64	0.62	-0.25	-0.49	0.62	0.34	-0.04	-1.24	0.60	-0.25	-0.42
2011-2012	0.57	0.59	0.68	0.74	0.61	0.44	0.56	0.75	0.65	0.57	0.57	0.044	-1.27	0.48	0.10	-1.33	-1.34	0.38	-0.32	-0.85
2012-2013	0.59	0.61	0.59	0.77	0.71	0.56	0.61	0.47	0.58	0.53	0.60	0.22	-1.35	0.58	0.29	-2.41	0.31	0.46	-0.31	-0.67
2013-2014	0.67	0.69	0.57	0.54	0.68	0.53	0.61	0.36	0.20	0.58	0.68	0.28	-1.83	0.50	0.32	-0.65	0.42	0.003	-0.07	-21.71
Average	0.60	0.69	0.57	0.57	0.69	0.46	0.57	0.67	0.64	0.48	0.66	0.41	-0.40	0.65	0.60	0.52	0.34	0.57	0.23	-1.15
S.D	0.10	0.12	0.07	0.14	0.08	0.15	0.06	0.21	0.16	0.15	0.11	1.05	0.63	0.09	0.29	1.16	0.68	0.22	0.54	1.06

## Liquidity Ranking by Using Motaal Comprehensive Test

**Table -5.6.1**

### LUPIN

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.18	1.50	0.46	2	0.33	4.00	0.02	3.50	11.00	1.00
2000-01	0.21	4.00	0.43	6	0.34	2.50	0.01	10.00	22.50	4.00
2001-02	0.19	3.00	0.43	6	0.34	2.50	0.02	3.50	15.00	2.00
2002-03	0.18	1.50	0.42	8	0.38	1.00	0.01	10.00	20.50	3.00
2003-04	0.33	11.50	0.33	13	0.31	5.00	0.01	10.00	39.50	10.00
2004-05	0.37	14.00	0.34	12	0.26	7.00	0.02	3.50	36.50	8.00
2005-06	0.23	5.00	0.25	15	0.18	12.00	0.01	10.00	42.00	11.00
2006-07	0.27	7.00	0.32	14	0.17	13.00	0.01	10.00	44.00	12.00
2007-08	0.36	13.00	0.36	11	0.15	15.00	0.01	10.00	49.00	14.00
2008-09	0.39	15.00	0.38	10	0.21	10.50	0.01	10.00	45.50	13.00
2009-10	0.31	8.00	0.39	9	0.29	9.00	0.02	3.50	29.50	5.00
2010-11	0.31	9.00	0.45	3.5	0.23	8.50	0.01	10.00	31.00	6.00
2011-12	0.33	11.50	0.43	6	0.23	8.50	0.01	10.00	36.00	7.00
2012-13	0.32	10.00	0.45	3.5	0.21	10.50	0.00	15.00	39.00	9.00
2013-14	0.26	6.00	0.65	1	0.16	14.00	0.03	1.00	22.00	4.00

Source: Computed from MS office

**Table -5.6.2**

### Dr. Reddy's Laboratories

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.24	12.00	0.43	3.5	0.02	8.00	0.25	7.00	30.50	7
2000-01	0.28	15.00	0.51	2	0.03	5.00	0.17	12.50	34.50	9
2001-02	0.15	2.50	0.35	7.5	0.01	11.00	0.11	15.00	36.00	10
2002-03	0.16	4.00	0.23	14	0.01	11.00	0.14	14.00	43.00	12
2003-04	0.19	7.50	0.33	9	0.04	3.50	0.17	12.50	32.50	8
2004-05	0.15	2.50	0.2	15	0.02	8.00	0.19	10.50	36.00	10
2005-06	0.18	5.00	0.24	13	0.01	11.00	0.30	5.00	34.00	9
2006-07	0.12	1.00	0.26	11.5	0.04	3.50	0.26	6.00	22.00	2
2007-08	0.19	7.50	0.26	11.5	0.02	8.00	0.38	1.00	28.00	5
2008-09	0.19	7.50	0.36	6	0.02	8.00	0.34	4.00	25.50	4
2009-10	0.25	13.50	0.29	10	0.01	11.00	0.36	2.50	37.00	11
2010-11	0.23	11.00	0.38	5	0.01	11.00	0.36	2.50	29.50	6
2011-12	0.25	13.50	0.35	7.5	0.02	8.00	0.24	8.00	37.00	11
2012-13	0.22	10.00	0.43	3.5	0.14	1.00	0.20	9.00	23.50	3
2013-14	0.19	7.50	0.54	1	0.08	2.00	0.19	10.50	21.00	1

Source: Computed from MS office



**Table -5.6.3****CIPLA**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.45	12.00	0.17	15	0.01	9.50	0.37	2.00	38.50	10
2000-01	0.43	10.50	0.23	14	0.01	9.50	0.32	3.00	37.00	8
2001-02	0.41	8.00	0.26	13	0.01	9.50	0.31	4.50	35.00	6
2002-03	0.46	14.00	0.27	12	0.00	14.50	0.26	8.00	48.50	13
2003-04	0.40	6.00	0.34	5	0.00	14.50	0.25	10.50	36.00	7
2004-05	0.43	10.50	0.33	6	0.01	9.50	0.23	12.00	38.00	9
2005-06	0.42	9.00	0.38	2	0.02	3.00	0.18	15.00	29.00	4
2006-07	0.35	4.00	0.36	4	0.02	3.00	0.25	10.50	21.50	2
2007-08	0.30	2.00	0.37	3	0.02	3.00	0.31	4.50	12.50	1
2008-09	0.32	3.00	0.41	1	0.01	9.50	0.26	8.00	21.50	2
2009-10	0.28	1.00	0.28	11	0.01	9.50	0.43	1.00	22.50	2
2010-11	0.40	6.00	0.31	9.5	0.02	3.00	0.27	6.00	24.50	3
2011-12	0.40	6.00	0.32	7.5	0.01	9.50	0.26	8.00	31.00	5
2012-13	0.46	14.00	0.32	7.5	0.02	3.00	0.20	14.00	38.50	11
2013-14	0.46	14.00	0.31	9.5	0.01	9.50	0.21	13.00	46.00	12

Source: Computed from MS office

**Table -5.6.4****Piramal Enterprises**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.32	11.00	0.31	2	0.08	2.00	0.18	15.00	30.00	5
2000-01	0.30	9.00	0.26	7.7	0.10	1.00	0.33	12.00	29.70	4
2001-02	0.33	12.00	0.26	7.5	0.05	3.00	0.35	10.00	32.50	7
2002-03	0.31	10.00	0.31	2	0.03	5.00	0.35	10.00	27.00	2
2003-04	0.36	14.00	0.31	2	0.03	5.00	0.30	13.00	34.00	8
2004-05	0.48	15.00	0.25	9	0.01	10.00	0.26	14.00	48.00	10
2005-06	0.35	13.00	0.28	6	0.02	7.00	0.35	10.00	36.00	9
2006-07	0.29	8.00	0.29	4.5	0.03	5.00	0.38	8.00	25.50	1
2007-08	0.24	7.00	0.29	4.5	0.01	10.00	0.43	7.00	28.50	3
2008-09	0.19	5.50	0.24	10	0.01	10.00	0.56	6.00	31.50	6
2009-10	0.19	5.50	0.18	12	0.01	10.00	0.61	5.00	32.50	7
2010-11	0.02	1.00	0.19	11	0.00	14.00	0.80	4.00	30.00	5
2011-12	0.05	2.50	0.04	14.5	0.00	14.00	0.91	1.50	32.50	7
2012-13	0.05	2.50	0.04	14.5	0.00	14.00	0.91	1.50	32.50	7
2013-14	0.07	4.00	0.05	13	0.01	10.00	0.87	3.00	30.00	5

Source: Computed from MS office

**Table -5.6.5****Aurobindo Pharmaceuticals**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.31	8.00	0.44	6	0.01	8.00	0.20	7.50	29.50	6
2000-01	0.39	15.00	0.45	5	0.00	12.50	0.15	13.50	46.00	13
2001-02	0.22	1.00	0.63	1.5	0.02	6.00	0.12	15.00	23.50	4
2002-03	0.27	4.00	0.53	3	0.04	1.50	0.15	13.50	22.00	2
2003-04	0.29	6.50	0.5	4	0.04	1.50	0.17	11.00	23.00	3
2004-05	0.32	9.00	0.43	8	0.01	8.00	0.23	5.00	30.00	7
2005-06	0.26	3.00	0.38	13	0.03	4.00	0.25	3.50	23.50	4
2006-07	0.24	2.00	0.27	15	0.01	8.00	0.25	3.50	28.50	5
2007-08	0.29	6.50	0.35	14	0.00	12.50	0.26	2.00	35.00	9
2008-09	0.28	5.00	0.42	11	0.03	4.00	0.27	1.00	21.00	1
2009-10	0.35	10.00	0.42	11	0.00	12.50	0.22	6.00	39.50	10
2010-11	0.37	13.50	0.43	8	0.00	12.50	0.17	11.00	45.00	12
2011-12	0.37	13.50	0.42	11	0.00	12.50	0.20	7.50	44.50	11
2012-13	0.36	11.50	0.43	8	0.03	4.00	0.17	11.00	34.50	8
2013-14	0.36	11.50	0.63	1.5	0.00	12.50	0.19	9.00	34.50	8

Source: Computed from MS office

**Table -5.6.6****Cadila Health Care Ltd.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.12	1.00	0.06	14.5	0.01	10.00	0.11	15.00	40.50	12
2000-01	0.33	8.50	0.07	13	0.14	1.00	0.30	10.50	33.00	8
2001-02	0.27	5.00	0.06	14.5	0.01	10.00	0.55	1.00	30.50	7
2002-03	0.43	15.00	0.11	10	0.02	6.00	0.21	13.00	44.00	13
2003-04	0.36	12.00	0.12	6	0.06	2.50	0.18	14.00	34.50	10
2004-05	0.40	13.50	0.08	12	0.00	14.50	0.32	9.00	49.00	14
2005-06	0.34	10.50	0.11	10	0.00	14.50	0.36	5.50	40.50	12
2006-07	0.40	13.50	0.12	6	0.01	10.00	0.30	10.50	40.00	11
2007-08	0.33	8.50	0.12	6	0.01	10.00	0.36	5.50	30.00	6
2008-09	0.34	10.50	0.14	1	0.01	10.00	0.27	12.00	33.50	9
2009-10	0.32	7.00	0.13	2.5	0.01	10.00	0.33	8.00	27.50	5
2010-11	0.31	6.00	0.13	2.5	0.01	10.00	0.35	7.00	25.50	4
2011-12	0.25	2.50	0.12	6	0.06	2.50	0.40	4.00	15.00	1
2012-13	0.25	2.50	0.12	6	0.04	4.00	0.41	3.00	15.50	2
2013-14	0.26	4.00	0.11	10	0.03	5.00	0.43	2.00	21.00	3

Source: Computed from MS office

**Table -5.6.7****Divis Labs.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.62	15.00	0.29	13	0.01	9.00	0.10	9.50	46.50	12
2000-01	0.56	13.00	0.25	15	0.01	9.00	0.13	3.50	40.50	12
2001-02	0.41	1.00	0.48	1	0.01	9.00	0.06	14.00	25.00	3
2002-03	0.47	3.00	0.4	3	0.01	9.00	0.09	12.50	27.50	5
2003-04	0.51	9.50	0.4	4.5	0.01	9.00	0.05	15.00	38.00	10
2004-05	0.51	9.50	0.37	7.5	0.01	9.00	0.10	9.50	35.50	9
2005-06	0.52	12.00	0.3	12	0.00	15.00	0.15	1.00	40.00	11
2006-07	0.49	5.50	0.38	6	0.02	2.00	0.09	12.50	26.00	4
2007-08	0.47	3.00	0.36	9	0.01	9.00	0.13	3.50	24.50	2
2008-09	0.50	7.00	0.35	10.5	0.01	9.00	0.13	3.50	30.00	7
2009-10	0.58	14.00	0.28	14	0.01	9.00	0.13	3.50	40.50	12
2010-11	0.51	9.50	0.37	7.5	0.01	9.00	0.11	6.50	32.50	8
2011-12	0.49	5.50	0.4	4.5	0.01	9.00	0.10	9.50	28.50	6
2012-13	0.51	9.50	0.35	10.5	0.02	2.00	0.11	6.50	28.50	6
2013-14	0.47	3.00	0.41	2	0.02	2.00	0.10	9.50	16.50	1

Source: Computed from MS office

**Table -5.6.8****Strides Archolabs.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.35	15.00	0.62	2	0.02	12.00	0.35	10.50	39.50	10
2000-01	0.29	12.50	0.37	9	0.02	12.00	0.24	15.00	48.50	12
2001-02	0.29	12.50	0.58	3	0.04	5.00	0.27	14.00	34.50	8
2002-03	0.11	3.50	0.64	1	0.02	12.00	0.28	13.00	29.50	6
2003-04	0.12	5.00	0.43	6.5	0.03	8.00	0.35	10.50	30.00	7
2004-05	0.32	14.00	0.45	4	0.06	3.00	0.38	9.00	30.00	7
2005-06	0.22	11.00	0.44	5	0.02	12.00	0.34	12.00	40.00	11
2006-07	0.20	10.00	0.43	6.5	0.02	12.00	0.40	6.50	35.00	9
2007-08	0.11	3.50	0.26	13	0.14	2.00	0.52	3.50	22.00	1
2008-09	0.17	9.00	0.4	8	0.01	15.00	0.39	8.00	40.00	11
2009-10	0.14	6.50	0.29	10	0.03	8.00	0.52	3.50	28.00	5
2010-11	0.07	2.00	0.08	15	0.04	5.00	0.80	1.00	23.00	2
2011-12	0.06	1.00	0.11	14	0.03	8.00	0.78	2.00	25.00	3
2012-13	0.16	8.00	0.28	11.5	0.04	5.00	0.51	5.00	29.50	6
2013-14	0.14	6.50	0.28	11.5	0.18	1.00	0.40	6.50	25.50	4

Source: Computed from MS office

**Table -5.6.9****Sun Pharmaceuticals.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.29	10.00	0.28	5	0.02	8.50	0.41	2.50	26.00	2
2000-01	0.42	15.00	0.26	7	0.03	5.50	0.28	4.00	31.50	6
2001-02	0.40	14.00	0.33	3	0.05	4.00	0.22	10.00	31.00	5
2002-03	0.32	11.00	0.4	1	0.02	8.50	0.11	14.50	35.00	9
2003-04	0.33	12.00	0.26	6	0.01	12.00	0.25	5.50	35.50	10
2004-05	0.11	1.00	0.13	13	0.00	14.50	0.25	5.50	34.00	8
2005-06	0.12	2.00	0.11	14	0.00	14.50	0.23	8.00	38.50	12
2006-07	0.15	4.00	0.14	12	0.02	8.50	0.16	12.00	36.50	11
2007-08	0.13	3.00	0.36	2	0.01	12.00	0.14	13.00	30.00	4
2008-09	0.18	6.00	0.24	8	0.01	12.00	0.11	14.50	40.50	13
2009-10	0.34	13.00	0.32	4	0.02	8.50	0.23	8.00	33.50	7
2010-11	0.21	8.00	0.17	11	0.41	1.00	0.20	11.00	31.00	5
2011-12	0.18	6.00	0.2	10	0.38	2.00	0.23	8.00	26.00	2
2012-13	0.25	9.00	0.21	9	0.13	3.00	0.41	2.50	23.50	1
2013-14	0.18	6.00	0.08	15	0.03	5.50	0.70	1.00	27.50	3

Source: Computed from MS office

**Table -5.6.10****Biocon Pharmaceuticals.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.33	13.50	0.58	4.5	0.00	12.50	0.11	9.50	40.00	11
2000-01	0.33	13.50	0.58	4.5	0.00	12.50	0.09	13.00	43.50	12
2001-02	0.24	5.50	0.65	1	0.00	12.50	0.10	11.50	30.50	7
2002-03	0.34	15.00	0.53	7	0.00	12.50	0.11	9.50	44.00	14
2003-04	0.15	1.00	0.21	15	0.00	12.50	0.05	15.00	43.50	13
2004-05	0.25	8.00	0.6	3	0.01	7.50	0.13	8.00	26.50	5
2005-06	0.31	10.50	0.61	2	0.00	12.50	0.06	14.00	39.00	10
2006-07	0.31	10.50	0.57	6	0.01	7.50	0.10	11.50	35.50	9
2007-08	0.32	12.00	0.42	8	0.01	7.50	0.24	7.00	34.50	8
2008-09	0.25	8.00	0.39	9	0.01	7.50	0.35	4.50	29.00	6
2009-10	0.22	4.00	0.34	10	0.07	4.00	0.37	2.50	20.50	2
2010-11	0.21	2.50	0.31	12	0.14	1.00	0.31	6.00	21.50	3
2011-12	0.25	8.00	0.32	12	0.03	5.00	0.40	1.00	26.00	4
2012-13	0.24	5.50	0.28	14	0.12	2.50	0.35	4.50	26.50	5
2013-14	0.21	2.50	0.29	13	0.12	2.50	0.37	2.50	20.50	1

Source: Computed from MS office

**Table -5.6.11****Kopran**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.43	15.00	0.26	8.5	0.01	5.00	0.29	15.00	43.50	13
2000-01	0.31	14.00	0.29	3	0.01	5.00	0.39	14.00	36.00	9
2001-02	0.25	12.50	0.29	3	0.00	11.00	0.44	13.00	39.50	12
2002-03	0.22	8.50	0.3	1	0.00	11.00	0.45	12.00	32.50	7
2003-04	0.17	2.50	0.29	3	0.00	11.00	0.52	4.00	20.50	1
2004-05	0.25	12.50	0.26	8.5	0.01	5.00	0.47	10.50	36.50	10
2005-06	0.21	6.50	0.28	5	0.00	11.00	0.47	10.50	33.00	8
2006-07	0.19	4.00	0.27	6.5	0.00	11.00	0.51	5.50	27.00	3
2007-08	0.17	2.50	0.18	15	0.00	11.00	0.64	2.00	30.50	5
2008-09	0.13	1.00	0.18	14	0.00	11.00	0.67	1.00	27.00	3
2009-10	0.20	5.00	0.21	13	0.00	11.00	0.56	3.00	32.00	6
2010-11	0.23	10.00	0.23	11.5	0.00	11.00	0.51	5.50	38.00	11
2011-12	0.22	8.50	0.23	11.5	0.04	1.00	0.50	7.50	28.50	4
2012-13	0.21	6.50	0.27	6.5	0.02	2.50	0.50	7.50	23.00	2
2013-14	0.24	11.00	0.24	10	0.02	2.50	0.49	9.00	32.50	7

Source: Computed from MS office

**Table -5.6.12****Biofil Chemicals and Pharmaceuticals Ltd.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.28	12.00	0.57	6	0.01	13.00	0.11	12.00	43.00	11
2000-01	0.31	14.00	0.54	8	0.01	13.00	0.12	10.50	45.50	13
2001-02	0.21	9.00	0.33	12	0.01	13.00	0.13	8.50	42.50	10
2002-03	0.32	15.00	0.4	10	0.01	13.00	0.18	6.00	44.00	12
2003-04	0.24	11.00	0.3	13	0.01	13.00	0.19	5.00	42.00	9
2004-05	0.29	13.00	0.22	14	0.01	13.00	0.25	4.00	44.00	12
2005-06	0.23	10.00	0.35	11	0.01	13.00	0.41	1.00	35.00	8
2006-07	0.12	7.00	0.55	7	0.01	13.00	0.32	3.00	30.00	7
2007-08	0.07	5.50	0.81	2	0.07	3.00	0.04	15.00	25.50	4
2008-09	0.18	8.00	0.67	5	0.08	2.00	0.07	14.00	29.00	6
2009-10	0.00	1.00	0.09	15	0.57	1.00	0.34	2.00	19.00	2
2010-11	0.03	2.00	0.79	3	0.05	4.50	0.13	8.50	18.00	1
2011-12	0.04	3.00	0.82	1	0.05	4.50	0.08	13.00	21.50	3
2012-13	0.07	5.50	0.77	4	0.03	6.50	0.12	10.50	26.50	5
2013-14	0.05	4.00	0.51	9	0.03	6.50	0.16	7.00	26.50	5

Source: Computed from MS office

**Table –5.6.13****Ambalal Sarabhai Enterprises.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.18	13.50	0.27	5.5	0.05	5.50	0.47	13.50	38.00	10
2000-01	0.20	15.00	0.26	7	0.03	9.50	0.49	10.50	42.00	12
2001-02	0.18	13.50	0.27	5.5	0.05	5.50	0.49	10.50	35.00	7
2002-03	0.14	11.00	0.32	3	0.02	13.00	0.50	9.00	36.00	8
2003-04	0.17	12.00	0.31	4	0.03	9.50	0.47	13.50	39.00	11
2004-05	0.13	9.50	0.33	2	0.02	13.00	0.48	12.00	36.50	9
2005-06	0.11	8.00	0.17	11	0.09	4.00	0.62	7.00	30.00	4
2006-07	0.07	6.00	0.18	10	0.02	13.00	0.71	5.00	34.00	6
2007-08	0.06	5.00	0.2	8	0.04	7.50	0.68	6.00	26.50	3
2008-09	0.13	9.50	0.36	1	0.11	1.00	0.31	15.00	26.50	3
2009-10	0.08	7.00	0.19	9	0.10	2.50	0.58	8.00	26.50	3
2010-11	0.01	1.50	0.16	12	0.04	7.50	0.76	4.00	25.00	2
2011-12	0.04	3.00	0.08	15	0.02	13.00	0.85	1.00	32.00	5
2012-13	0.05	4.00	0.1	13	0.02	13.00	0.82	2.00	32.00	5
2013-14	0.01	1.50	0.09	14	0.10	2.50	0.79	3.00	21.00	1

Source: Computed from MS office

**Table -5.6.14****Parenteral Drugs (India) Ltd.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.33	10.50	0.49	4.5	0.01	1.00	0.16	9.50	25.50	4
2000-01	0.26	3.00	0.59	1	0.02	8.00	0.12	14.00	26.00	5
2001-02	0.32	8.50	0.49	4.5	0.01	1.00	0.16	9.50	23.50	2
2002-03	0.34	13.00	0.51	3	0.00	14.00	0.15	11.50	41.50	14
2003-04	0.34	13.00	0.52	2	0.00	14.00	0.13	13.00	42.00	15
2004-05	0.33	10.50	0.48	6	0.00	14.00	0.19	5.50	36.00	13
2005-06	0.31	6.50	0.47	9	0.02	8.00	0.19	5.50	29.00	9
2006-07	0.30	5.00	0.47	9	0.02	8.00	0.15	11.50	33.50	11
2007-08	0.27	4.00	0.4	13.5	0.03	4.00	0.18	7.00	28.50	8
2008-09	0.34	13.00	0.4	13.5	0.03	4.00	0.20	4.00	34.50	12
2009-10	0.31	6.50	0.47	9	0.03	4.00	0.17	8.00	27.50	6
2010-11	0.36	15.00	0.47	9	0.01	1.00	0.22	3.00	28.00	7
2011-12	0.32	8.50	0.4	13.5	0.04	1.00	0.23	2.00	25.00	3
2012-13	0.22	1.00	0.4	13.5	0.03	4.00	0.27	1.00	19.50	1
2013-14	0.24	2.00	0.47	9	0.03	4.00	0.11	15.00	30.00	10

Source: Computed from MS office

**Table –5.6.15****Sequent Scientific Ltd.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.00	2.50	0	13.5	0.00	13.00	1.00	2.50	31.50	6
2000-01	0.00	2.50	0	13.5	0.00	13.00	1.00	2.50	31.50	6
2001-02	0.00	2.50	0	13.5	0.00	13.00	1.00	2.50	31.50	6
2002-03	0.00	2.50	0	13.5	0.00	13.00	1.00	2.50	31.50	6
2003-04	0.12	6.00	0.32	6	0.04	9.00	0.49	5.00	26.00	2
2004-05	0.10	5.00	0.34	4	0.14	2.00	0.38	7.00	18.00	1
2005-06	0.13	7.00	0.56	1	0.06	7.00	0.17	15.00	30.00	5
2006-07	0.20	8.00	0.33	5	0.23	1.00	0.21	14.00	28.00	4
2007-08	0.30	11.50	0.4	2	0.06	7.00	0.22	13.00	33.50	7
2008-09	0.29	10.00	0.25	11	0.03	10.00	0.40	6.00	37.00	9
2009-10	0.30	11.50	0.29	9	0.06	7.00	0.33	8.50	36.00	8
2010-11	0.31	13.00	0.32	7	0.00	13.00	0.33	8.50	41.50	12
2011-12	0.27	9.00	0.35	3	0.07	4.50	0.31	10.00	26.50	3
2012-13	0.32	14.00	0.27	10	0.12	3.00	0.29	11.00	38.00	10
2013-14	0.38	15.00	0.3	8	0.07	4.50	0.24	12.00	39.50	11

Source: Computed from MS office

**Table –5.6.16****Zenotech Laboratories.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.00	2.50	1	1	0.00	13.00	0.00	14.00	30.50	6
2000-01	0.00	2.50	0.99	2	0.00	13.00	0.00	14.00	31.50	7
2001-02	0.00	2.50	0.96	3.5	0.03	8.50	0.00	14.00	28.50	4
2002-03	0.00	2.50	0.96	3.5	0.01	10.00	0.02	11.50	27.50	3
2003-04	0.02	5.00	0.16	8	0.06	5.00	0.02	11.50	29.50	5
2004-05	0.16	11.00	0.36	7	0.17	4.00	0.06	10.00	32.00	8
2005-06	0.23	13.00	0.48	5	0.04	7.00	0.12	9.00	34.00	10
2006-07	0.20	12.00	0.39	6	0.03	8.50	0.33	4.00	30.50	6
2007-08	0.07	8.00	0.02	11	0.00	13.00	0.13	8.00	40.00	14
2008-09	0.06	7.00	0.01	13.5	0.00	13.00	0.27	6.00	39.50	13
2009-10	0.08	9.00	0.05	10	0.00	13.00	0.30	5.00	37.00	12
2010-11	0.11	10.00	0.07	9	0.05	6.00	0.59	2.00	27.00	2
2011-12	0.05	6.00	0.01	13.5	0.27	2.00	0.67	1.00	22.50	1
2012-13	0.27	14.00	0.01	13.5	0.19	3.00	0.53	3.00	33.50	9
2013-14	0.28	15.00	0.01	13.5	0.46	1.00	0.26	7.00	36.50	11

Source: Computed from MS office

**Table -5.6.17****Marksans Pharma Ltd.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.52	13.00	0.33	9	0.02	7.00	0.09	9.50	38.50	12
2000-01	0.27	4.00	0.57	2	0.01	9.50	0.11	5.00	20.50	3
2001-02	0.30	6.50	0.58	1	0.00	13.50	0.07	12.00	33.00	8
2002-03	0.55	15.00	0.32	10.5	0.00	13.50	0.07	12.00	51.00	15
2003-04	0.37	9.00	0.49	5	0.03	6.00	0.06	14.50	34.50	10
2004-05	0.38	10.00	0.44	7	0.01	9.50	0.10	7.50	34.00	9
2005-06	0.22	1.00	0.13	15	0.01	9.50	0.07	12.00	37.50	11
2006-07	0.35	8.00	0.14	14	0.01	9.50	0.06	14.50	46.00	14
2007-08	0.42	12.00	0.17	13	0.15	2.00	0.26	1.00	28.00	6
2008-09	0.54	14.00	0.27	12	0.00	13.50	0.11	5.00	44.50	13
2009-10	0.40	11.00	0.32	10.5	0.04	5.00	0.11	5.00	31.50	7
2010-11	0.26	3.00	0.46	6	0.17	1.00	0.10	7.50	17.50	2
2011-12	0.28	5.00	0.5	4	0.12	4.00	0.09	9.50	22.50	4
2012-13	0.30	6.50	0.53	3	0.00	13.50	0.16	3.00	26.00	5
2013-14	0.23	2.00	0.38	8	0.14	3.00	0.17	2.00	15.00	1

Source: Computed from MS office

**Table -5.6.18****Wanbury Ltd.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.46	14.00	0.33	7.5	0.01	8.50	0.21	15.00	45.00	11
2000-01	0.40	13.00	0.33	7.5	0.00	13.50	0.26	13.00	47.00	13
2001-02	0.30	12.00	0.41	3	0.00	13.50	0.28	11.00	39.50	9
2002-03	0.60	15.00	0.39	4	0.00	13.50	0.26	13.00	45.50	12
2003-04	0.26	11.00	0.29	11	0.01	8.50	0.26	13.00	43.50	10
2004-05	0.16	8.00	0.47	1.5	0.00	13.50	0.32	10.00	33.00	8
2005-06	0.11	2.50	0.31	9.5	0.09	1.50	0.38	7.00	20.50	1
2006-07	0.08	1.00	0.23	13	0.01	8.50	0.67	1.00	23.50	3
2007-08	0.17	10.00	0.37	5	0.01	8.50	0.42	6.00	29.50	6
2008-09	0.16	8.00	0.36	6	0.09	1.50	0.37	8.00	23.50	3
2009-10	0.12	4.50	0.31	9.5	0.01	8.50	0.53	5.00	27.50	5
2010-11	0.12	4.50	0.22	15	0.01	8.50	0.62	2.00	30.00	7
2011-12	0.13	6.00	0.23	13	0.05	3.50	0.58	4.00	26.50	4
2012-13	0.11	2.50	0.23	13	0.05	3.50	0.61	3.00	22.00	2
2013-14	0.16	8.00	0.47	1.5	0.03	5.00	0.33	9.00	23.50	3

Source: Computed from MS office



**Table -5.6.19**  
**Morepen Labs.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.22	6.50	0.29	9	0.24	2.00	0.16	11.00	28.50	5
2000-01	0.22	6.50	0.28	11	0.23	3.00	0.16	11.00	31.50	6
2001-02	0.26	8.00	0.32	4	0.11	7.00	0.20	7.50	26.50	4
2002-03	0.18	4.50	0.29	9	0.16	5.00	0.29	4.00	22.50	2
2003-04	0.18	4.50	0.3	7	0.18	4.00	0.37	3.00	18.50	1
2004-05	0.12	1.00	0.21	13.5	0.11	7.00	0.55	1.00	22.50	2
2005-06	0.13	2.00	0.21	13.5	0.11	7.00	0.54	2.00	24.50	3
2006-07	0.16	3.00	0.09	15	0.64	1.00	0.11	15.00	34.00	7
2007-08	0.43	12.00	0.26	12	0.03	13.00	0.27	5.00	42.00	12
2008-09	0.37	10.00	0.31	5.5	0.06	10.00	0.24	6.00	31.50	6
2009-10	0.47	15.00	0.31	5.5	0.01	15.00	0.20	7.50	43.00	13
2010-11	0.44	13.50	0.36	3	0.01	14.00	0.16	11.00	41.50	11
2011-12	0.44	13.50	0.37	2	0.05	11.50	0.14	13.00	40.00	10
2012-13	0.41	11.00	0.41	1	0.05	11.50	0.12	14.00	37.50	9
2013-14	0.33	9.00	0.29	9	0.08	9.00	0.19	9.00	36.00	8

Source: Computed from MS office

**Table -5.6.20**  
**Hiran Orgochem Ltd.**

Year	Inventory to Current Assets		Debtors to Current Assets		Loans and Advances to Current Assets		Cash and Bank to Current Assets		Total Rank 1+2+3+4	Ultimate Rank
		Rank(1)		Rank(2)		Rank(3)		Rank(4)		
1999-2K	0.68	11.00	0.10	14.5	0.01	9.00	0.03	15.00	49.50	14
2000-01	0.77	15.00	0.11	13	0.02	3.50	0.36	8.00	39.50	10
2001-02	0.68	11.00	0.20	7.5	0.01	9.00	0.05	14.00	41.50	12
2002-03	0.61	7.00	0.38	2	0.00	14.50	0.13	10.50	34.00	7
2003-04	0.51	6.00	0.27	5	0.02	3.50	0.06	13.00	27.50	6
2004-05	0.47	5.00	0.43	1	0.01	9.00	0.13	10.50	25.50	5
2005-06	0.64	9.00	0.28	3.5	0.00	14.50	0.11	12.00	39.00	9
2006-07	0.70	13.00	0.19	9	0.01	9.00	0.40	7.00	38.00	8
2007-08	0.12	3.00	0.16	11	0.01	9.00	0.82	1.00	24.00	4
2008-09	0.68	11.00	0.14	12	0.01	9.00	0.16	9.00	41.00	11
2009-10	0.11	2.00	0.21	6	0.01	9.00	0.75	2.00	19.00	3
2010-11	0.07	1.00	0.18	10	0.54	1.00	0.54	4.00	16.00	1
2011-12	0.19	4.00	0.20	7.5	0.37	2.00	0.55	3.00	16.50	2
2012-13	0.62	8.00	0.28	3.5	0.01	9.00	0.43	5.00	25.50	5
2013-14	0.74	14.00	0.10	14.5	0.01	9.00	0.41	6.00	43.50	13

Source: Computed from MS office

## **CHAPTER-6**

### **SUMMARY AND CONCLUSIONS**

Working capital means the capital which is required for day to day operation of the business. It is a vital factor in business operations. Every firm must have requisite level of working capital in order to run its business wheel smoothly. The working capital of a firm should neither excessive nor inadequate. Both excess and inadequate level of working capital may hurt profitability. A proper balance between these two extreme situations should therefore be maintained for efficient operation of business and this can be done by the efficient working capital management. Thus, the need for proper working capital management cannot be ignored.

After in depth analysis of existing literature it is found that, no comprehensive effort has so far been made to study the working capital management of the Indian pharmaceutical companies. Thus, the existing literature has failed to make an in-depth analysis of the status of Indian pharmaceutical companies in respect of the working capital management during the study period. The present study has endeavour to bridge the gap.

The objective of the study was to assess the performance of working capital management of some selected pharmaceutical companies in India. While conducting this study twenty companies, enlisted in BSE, were chosen on the basis of average net profit for last fifteen years (1999-2000 to 2013-2014). Among these twenty pharmaceutical companies, ten were top earning and ten were loss making. The study period was fifteen years i.e. 1999-2000 to 2013-2014. The data were collected from the annual reports of the selected companies. Various statistical tools and techniques were used in the present study to assess the working capital management of the selected companies. Trend analysis of different components of working capital were done using log linear equation,  $\log Y_t = a+bt$  or parabolic equation  $\log Y_t = a+bt+ ct^2$ , which ever was best fitted. Ratio analysis was done to measure liquidity, profitability and efficiency position of the selected

companies. Principal component was done to identify the leading factor of liquidity, profitability and efficiency. Motaal test for liquidity was also done.

The parameters considered for evaluating the Working Capital Management are (i) Inventory, (ii) Debtors, (iii) Cash, (iv) Loans and Advances, (v) Creditors, (vi) Current liabilities and provisions, (VI) Total Current Assets, (vii) Net Working Capital. While making such comparison on the basis of growth of these components, the following comments can be made:

## **6.1. Findings**

### **6.1.1. Trend Analysis:**

- ❖ **From the trend analysis of inventory** component, it is found that in sixteen out of twenty cases of the selected companies maintained their inventory growth at increasing rate during the study period. In most cases, it was significant at or below 5% probability level. It is also observed that in fifteen cases (out of sixteen cases whose inventory was significantly increasing) the inventory was increasing at a decreasing rate and most of them were significant at 5% probability level. In three cases no trend is found. However, in most of the selected companies, inventory was one important component of working capital and it increased at a decreasing rate.
- ❖ **The trend analysis of debtor** component showed that in seventeen out of twenty cases of the selected companies maintained their growth rate of debtors was increasing during the period. In most cases, it was significant at or below 5% probability level. It is also observed that in fourteen cases (out of seventeen cases whose debtor was significantly increasing) the debtor was increasing at a decreasing rate and most of them were significant at 5% probability level. However, in most of the selected companies, debtor, is one of the most important component of working capital, increased at a decreasing rate
- ❖ **The growth analysis of cash and bank** reflected that in fifteen out of twenty cases of the selected companies maintained their cash and bank growth at

increasing rate during the period. In most cases, it was significant at or below 5% probability level. It is also observed that in ten cases (out of fifteen cases whose cash and bank was significantly increasing) the cash and bank was increasing at a decreasing rate and most of them were significant at 5% probability level. However, in most of the selected companies, cash and bank is one important component of liquidity, increased at a decreasing rate.

- ❖ **The trend analysis of loans and advances** showed that in seventeen out of twenty cases of the selected companies maintained their loans and advances growth at increasing rate during the period. In most cases, it was significant at or below 5% probability level. It is also observed that in eleven cases (out of seventeen cases whose loans and advances was significantly increasing) the loans and advances was increasing at a decreasing rate and most of them were significant at 5% probability level. However, in most of the selected companies, loans and advances is one of the most important component of current assets, increased at a decreasing rate.
- ❖ **The trend analysis of creditor** showed that in all of the selected companies maintained their creditors growth at increasing rate during the period. In most cases, it was significant at or below 5% probability level. It is also observed that in fifteen cases (out of all twenty cases whose creditor was significantly increasing), the creditor was increasing at a decreasing rate and most of them were statistically significant at 5% probability level. However, in most of the selected companies, creditors is one of the most important component of net current assets, increased at a decreasing rate.
- ❖ **From the trend analysis of current liabilities and provisions** showed that in all of the selected companies maintained their current liabilities and provisions growth at increasing rate during the period. In most cases, it was significant at or below 5% probability level. It is also observed that in twelve cases (out of all twenty cases whose current liabilities and provisions was significantly increasing), the current liabilities and provisions had increased at a decreasing rate and most of them were statistically significant at 5% probability level. However,

in most of the selected companies, current liabilities and provisions is one most important component of net working capital, increased at a decreasing rate.

- ❖ **The trend analysis of current assets** stated that in seventeen out of twenty cases of the selected companies maintained their current assets growth at increasing rate during the period. In most cases, it was significant at or below 5% probability level. It is also observed that in fourteen cases (out of seventeen cases whose current assets was significantly increasing), the current assets was increasing at a decreasing rate and most of them were statistically significant at 5% probability level. However, in most of the selected companies, current assets, the gross working capital as a whole is increased at a decreasing rate.
- ❖ **The trend analysis of net working capital** signified that in seventeen out of twenty cases of the selected companies maintained their net working capital growth at increasing rate during the period. In most cases, it was significant at or below 5% probability level. It is also observed that in thirteen cases (out of seventeen cases whose net working capital was significantly increasing), net working capital was increasing at a decreasing rate and most of them were statistically significant at 5% probability level. In four cases no trend is found. However, in most of the selected companies, the net working capital as a whole, increased at a decreasing rate.

- A. From accounting point of view, ratio analysis was done on the performance parameters of the selected pharmaceutical companies. All these ratios had been grouped for (i) liquidity analysis (ii) profitability analysis (iii) efficiency analysis (iv) working capital component wise analysis and (v) working capital leverage.

### **6.1.2. LIQUIDITY ANALYSIS:**

**The liquidity** of the selected companies has been analyzed by using current ratio, quick ratio and absolute liquid ratio. These ratios of the companies under study were compared with their accepted standard norms. While making such comparison on the basis of mean of these ratios, the following comments can be made.

- ❖ **The analysis of CR** shows that in one out of twenty cases of the selected companies maintained their CR at a level below the conventional standard of 2:1 during the period under study while in the remaining nineteen cases the average CR values were higher as compared to the standard norms of 2:1 during the same period. It reveals that in 95 percent of the selected companies the liquidity reached satisfactory level whereas in the remaining 5 per cent cases it was not at all satisfactory. It implies that the most of the companies under study were able to prove themselves as good performers in terms of their short term debt paying capability. The average CR of all the selected companies was 8.52 during the study period. The average CR maintained by the selected companies whose average net profit was positive was 3.56 whereas the average CR of the selected companies whose average net profits were negative was 13.48 during the study period.
- ❖ **The Quick ratio** of the selected companies exhibit that out of twenty companies, seventeen companies were higher than conventional standard norms whereas only in three cases (one of profit making and two of loss making), the values of QR were at a level less than the conventional standard norms of 1:1. It indicated that in most of the sample companies (85 per cent), the immediate debt paying capability was satisfactory throughout the study period. Thus, the net outcome obtained from the analysis of CR properly matches with that obtained from the analysis of QR during the study period. The average QR of all the selected companies was 7.28 during the study period. The average QR maintained by the selected companies whose average net profit was positive was 1.96 whereas the average QR of the selected companies whose average net profits were negative was 12.61 during the study period.
- ❖ **The Absolute liquid ratio** of the selected companies exhibited that out of twenty companies absolute liquid ratios, five companies absolute liquid ratios were find to place in the above conventional standard norms, whereas only in fifteen cases, the values of absolute liquid ratios were at a level less than the conventional standard norms of 0.5:1. It indicates that in most of the sample companies (75 per cent), the spot debt paying capability was not satisfactory throughout the study

period. Thus, the net outcome obtained from the analysis of CR and QR were not properly matches with that obtained from the analysis of absolute liquid ratio during the study period. The average absolute liquid ratio of all the selected companies was 0.48 during the study period. The average absolute liquid ratio maintained by the selected companies whose average net profit was positive was 0.41 whereas the average absolute liquid ratio of the selected companies whose average net profits were negative was 0.55 during the study period.

### **6.1.3. PROFITABILITY ANALYSIS:**

**The profitability** of the selected companies was analyzed during the period under study by using gross profit ratio, net profit ratios and return on capital employed. These ratios of the companies under study were compared with the industry average. While making such comparison on the basis of mean of these ratios, the following comments can be made.

- ❖ The gross profit ratio of the selected companies exhibits that out of twenty companies gross profit ratios, fourteen companies gross profit ratios were above average whereas remaining six companies gross profit ratios were less than the average. It indicates that in most of the sample companies (70 per cent) the gross profit ratio was above average of the selected samples throughout the study period. The average gross profit ratio of the selected samples taken as a whole was -3.30 during the period under study. The average gross profit ratio maintained by the selected companies whose average net profits were positive was 34.87% whereas the average gross profit ratio of the selected companies whose average net profits were negative was -41.47% during the study period.
- ❖ The net profit ratio of the selected companies reflects that out of twenty companies net profit ratios, ten companies net profit ratios were above average whereas remaining ten companies net profit ratios were less than the average. It indicates that in half of the sample companies (50 per cent) the net profit ratio was not satisfactory throughout the study period. The average net profit ratio of the selected samples taken as a whole was -0.52 during the period under study. The average net profit ratio maintained by the selected companies whose average net

profits were positive was 17.20% whereas the average net profit ratio of the selected companies whose average net profits were negative was -18.24% during the study period.

- ❖ The Return on capital employed (ROCE) of the selected companies exhibits that out of twenty companies Return on capital employed, fourteen companies Return on capital employed were above average whereas remaining six companies Return on capital employed were less than the average. It indicates that in most of the sample companies (70 per cent) the Return on capital employed was satisfactory throughout the study period. The average Return on capital employed of the selected samples taken as a whole was 7.39 during the period under study. The average Return on capital employed maintained by the selected companies whose average net profits were positive was 19.20% whereas the average Return on capital employed of the selected companies whose average net profits were negative was -2.80% during the study period.

#### **6.1.4. EFFICIENCY ANALYSIS:**

**The efficiency** position of the selected companies has been analyzed by using some traditional efficiency ratios such as inventory turnover ratio, debtors turnover ratios, cash turnover ratios, creditors turnover ratios and working capital turnover ratios. These ratios of the companies under study were compared with their industry average. While making such comparison on the basis of mean of these ratios, the following comments can be made.

- ❖ The **inventory turnover ratio** of the selected companies exhibits that out of twenty inventory turnover ratios, five companies inventory turnover ratios were above average of the selected companies whereas remaining fifteen cases, the values of inventory turnover ratios were at a level less than the average of the selected companies. It indicates that in most of the sample companies (75 per cent) the inventory turnover was not satisfactory throughout the study period. The average inventory turnover ratio of all the selected companies was 5.54 times during the study period. The average inventory turnover ratio of the selected



samples taken as a whole was 5.53 during the period under study. The average inventory turnover ratio maintained by the selected companies whose average net profit was positive was 3.96 times whereas the average inventory turnover ratio of the selected companies whose average net profits were negative was 7.12 times during the study period.

- ❖ The **debtors turnover ratio** of the selected companies exhibits that out of twenty companies debtors turnover ratios, eight companies debtors turnover ratios were above average whereas remaining twelve cases, the values of debtors turnover ratios were less than the average. It indicates that in most of the sample companies (60 per cent) the debtors turnover was not satisfactory throughout the study period. The average debtors turnover ratio of all the selected companies was 4.37 times during the study period. The average debtors turnover ratio maintained by the selected companies whose average net profit was positive was 4.33 times whereas the average debtors turnover ratio of the selected companies whose average net profits were negative was 4.40 times during the study period.
- ❖ The cash turnover ratio of the selected companies exhibits that out of twenty companies cash turnover ratios, eight companies cash turnover ratios were above average whereas remaining twelve companies cash turnover ratios were less than the average. It indicates that in most of the sample companies (60 per cent) the cash turnover was not satisfactory throughout the study period. The average cash turnover ratio of the selected samples taken as a whole was 60.80 during the study period. The average Cash turnover ratio maintained by the selected companies whose average net profit was positive was 67.13 times whereas the average Cash turnover ratio of the selected companies whose average net profits were negative was 46.15 times during the study period.
- ❖ The working capital turnover ratio of the selected companies exhibits that out of selected twenty companies working capital turnover ratios, nine working capital turnover ratios were above average whereas remaining eleven companies working capital turnover ratios were less than the average. It indicates that in most of the sample companies (55 per cent) the working capital turnover was not satisfactory throughout the study period. The average working capital turnover ratio of the

selected samples taken as a whole was 2.27 during the period under study. The average Working Capital turnover ratio maintained by the selected companies whose average net profit was positive was 2.71 times whereas the average Working Capital turnover ratio of the selected companies whose average net profits were negative was 1.82 times during the study period.

- ❖ The study of creditors turnover ratio of the selected companies exhibits that out of twenty companies creditors turnover ratios, ten companies creditors turnover ratios were above average whereas remaining ten companies creditors turnover ratios were less than the average. It indicates that in half of the sample companies (50 per cent) the creditors turnover was not satisfactory throughout the study period. The average creditors turnover ratio of the selected samples taken as a whole was 2.79 during the period under study. The average creditors turnover ratio maintained by the selected companies whose average net profit was positive was 2.88 times whereas the average creditors turnover ratio of the selected companies whose average net profits were negative was 2.70 times during the study period.

#### **6.1.5. COMPONENT WISE WORKING CAPITAL POSITION ANALYSIS:**

**The component of working capital** of the selected companies was analyzed during the period of study by current assets to total assets, inventory to current assets, debtors to current assets, cash to current assets, loans and advances to current assets and creditors to current assets. These ratios of the companies under study were compared with their industry average. While making such comparison on the basis of mean of these ratios, the following comments can be made.

- ❖ The Current assets to total assets ratio (CATA) of the selected companies exhibit that out of twenty companies Current assets to total assets ratios, eleven companies Current assets to total assets ratios were above average whereas remaining nine companies Current assets to total assets ratios were less than the average. It indicates that in this ratio half (near about) of the sample companies (55 per cent) the Current assets to total assets ratios was satisfactory throughout the study period. The average Current asset to total assets ratios of the selected

samples taken as a whole was 0.48 during the period under study. The average Current assets to total assets ratios maintained by the selected companies whose average net profits were positive was 0.50 whereas the average Current assets to total assets ratios of the selected companies whose average net profits were negative was 0.46 during the study period.

- ❖ The inventory to current assets ratios of the selected companies exhibits that out of twenty companies inventory to current assets ratios, ten companies inventory to current assets ratios were above average whereas remaining ten companies inventory to current assets ratios were less than the average. It indicates that in half of the sample companies (50 per cent) the inventory to current assets ratios was satisfactory throughout the study period. The average inventory to current assets ratios of the selected samples taken as a whole was 0.27 during the period under study. The average inventory to current assets ratios maintained by the selected companies whose average net profits were positive was 0.29 whereas the average inventory to current assets ratio of the selected companies whose average net profits were negative was 0.25 during the study period.
- ❖ The debtors to current assets ratios of the selected companies exhibits that out of twenty companies debtors to current assets ratios, eleven companies debtors to current assets ratios were above average whereas remaining nine companies debtors to current assets ratios were less than the average. It indicates that in half of the sample companies (45 per cent) the debtors to current assets ratios was below the average of the selected companies throughout the study period. The average debtors to current assets ratio of the selected samples taken as a whole were 0.33 during the period under study. The average debtors to current assets ratio maintained by the selected companies whose average net profits were positive was 0.34 whereas the average debtors to current assets ratio of the selected companies whose average net profits were negative was 0.32 during the study period.
- ❖ The cash to current assets ratios of the selected companies exhibits that out of twenty companies cash to current assets ratios, nine companies cash to current assets ratios were above average whereas remaining eleven companies cash to

current assets ratios were less than the average. It indicates that in half of the sample companies (55 per cent) the cash and bank to current assets ratios was below the average of the selected companies throughout the study period. The average cash and bank to current assets ratio of the selected samples taken as a whole was 0.0432 during the period under study. The average cash and bank to current assets ratio maintained by the selected companies whose average net profits were positive was 0.0569 whereas the average cash and bank to current assets ratio of the selected companies whose average net profits were negative was 0.029 during the study period.

- ❖ The loans and advances to current assets ratios of the selected companies exhibits that out of twenty companies loans and advances to current assets ratios, eight companies loans and advances to current assets ratios were above average whereas remaining twelve companies loans and advances to current assets ratios were less than the average. It indicates that in less than half of the sample companies (40per cent) the loans and advances to current assets ratios were above the average of the selected companies throughout the study period. The average loans and advances to current assets ratios of the selected samples taken as a whole were 0.30 during the period under study. The average loans and advances to current assets ratios maintained by the selected companies whose average net profits were positive was 0.281 whereas the average loans and advances to current assets ratios of the selected companies whose average net profits were negative was 0.325 during the study period.
- ❖ The creditors to current assets ratios of the selected companies exhibits that out of twenty companies creditors to current assets ratios, five companies creditors to current assets ratios were above average whereas remaining fifteen companies creditors to current assets ratios were less than the average. It indicates that in most of the sample companies (75 per cent) the creditors to current assets ratios was below the average of the selected companies throughout the study period. The average creditors to current assets ratio of the selected samples taken as a whole were 0.46 during the period under study.

#### **6.1.6. WORKING CAPITAL FINANCING STRATEGY:**

- ❖ The working capital leverage of the selected companies exhibits that out of twenty companies working capital leverage, twelve companies working capital leverage were above average whereas remaining eight companies working capital leverage were less than the average. It indicates that in half of the sample companies (60 per cent) the working capital leverage was high risky with a high return throughout the study period. The average working capital leverage of the selected samples taken as a whole was 0.39 during the period under study. The average working capital leverage maintained by the selected companies whose average net profits were positive was 0.42 whereas the average working capital leverage of the selected companies whose average net profits were negative was 0.36 during the study period.
- ❖ The working capital financing risk ratios of the selected companies exhibits that out of twenty companies risk ratios, fifteen companies risk ratios were above average whereas remaining five companies risk ratios were less than the average. It indicates that in most of the sample companies (75 per cent) the working capital financing risk ratios was high and these companies were adopted either matching or aggressive policy in working capital financing during the study period. The average risk ratios for working capital financing of the selected samples taken as a whole was 0.42 during the period under study. The average risk ratios in working capital financing maintained by the selected companies whose average net profits were positive was 0.59 whereas the average risk ratios in working capital financing of the selected companies whose average net profits were negative was 0.24 during the study period.

#### **6.1.7. Motaal Comprehensive Liquidity Test**

**The liquidity rank** of the selected companies was analyzed using **Motaal comprehensive liquidity test**. While making such comparison on the basis of ultimate rank, the test shows that in fourteen cases out of twenty selected pharmaceutical companies, the liquidity followed an increasing trend and in remaining six cases the liquidity followed a decreasing trend.

### **6.1.8. Principal component of liquidity, profitability and efficiency**

**The principal component of liquidity, profitability and efficiency** of the selected companies was determined by factor analysis during the period under study. The principal component of liquidity had been chosen among Current ratio, Quick ratio and Absolute liquid ratios, the principal component of profitability had been chosen from Gross profit ratio, Net profit ratio and Return on capital employed and the principal component of efficiency had been chosen from Inventory Turnover ratio, Debtors Turnover ratio, Cash Turnover ratio, Creditors Turnover ratio and Working capital Turnover ratio. While making such chosen on the basis of factor analysis, the following comments can be made:

1. The identification of principal component of liquidity shows that in all twenty cases, current ratio was the principal component (Eigen Value>1) of liquidity during the period under study and it was significant at 1% probability level.
2. The identification of principal component of profitability shows that in all twenty cases, gross profit ratio was the principal component (Eigen Value>1) of profitability during the period under study and it was significant at 1% probability level in most cases ( thirteen companies), except in four cases, it was significant at 5% probability level and in one case, it was significant at 10% probability level.
3. The identification of principal component of efficiency shows that in all twenty cases, inventory turnover ratio was the principal component (Eigen Value>1) of efficiency during the period under study and out of these twenty cases, twelve cases were significant at 1% probability level, one case was significant at 10% probability level and seven cases, it was not significant up to 10% probability level.

### **6.1.9. REGRESSION ANALYSIS**

**From the regression results** of Gross Profit on Current ratio reveals that out of total 14 companies under study, 10 companies earned profit and 4 incurred loss almost during the entire period. Loss making companies are found to maintain,

on an average, relatively lower current ratio than the profit –making companies, though, excepting only one company, namely Ambalal Sarabhai enterprises with current ratio of 1.0, the three other companies maintained, on an average, more than 2.0, a standard Current ratio normally construed as a safe liquidity ratio. For the profit-making companies, on the other hand, the average Current ratio, ranged between 3.0 and 5.23. (The sequent Scientific is a glaring exception, with an average Current ratio of 76.36, minimum Current ratio of 0 and maximum of 558).

Thus, maintaining a very high Current ratio might have been an important factor in helping her ailing husband.

So far as the relation between the gross profit and inventory turn-over is concerned, some baffling results come out. Each of three out of 4 loss-making companies has much higher Inventory Turnover ratio than any of the profit-making companies. Therefore, we can conclude that, in addition to the inventory management problem, there might be some other factors in the group of the liquidity measures that might have outweighed the gain accruing from high Inventory Turnover ratio.

Before conclusion, the findings may be summarized as follows:

1. In most of the selected pharmaceutical companies (fifteen out of twenty), the amount of inventory had increased at decreasing rate. In few cases (10% cases), the inventory had increased at increasing rate and it was significant at or below 5% probability level in most of the cases during the period under study. It represented that the amount of investment in inventories of selected pharmaceutical companies had significantly increased during the period under study.
2. In most of the selected companies (70% of the total twenty selected companies), the amount had increased at a decreasing rate and in few cases (three out of twenty) the amount of debtors had decreased at an increasing rate. Most of them were also significant at or below 5% probability level. Therefore, it is revealed

that the amount debtors of pharmaceutical companies had increased at a decreasing rate during the study period.

3. In most of the selected pharmaceutical companies ( seventeen out of twenty ), the amount of cash and bank had increased , out of which in ten selected pharmaceutical companies, the amount of cash and bank balance had increased at a decreasing rate and in seven cases no trend lines could be found. In three selected companies; the amount cash and bank had decreased at an increasing rate.
4. In most of the selected pharmaceutical companies (seventeen out of twenty), the amount of loans and advances had increased during the study period and in most of the cases, it was significant at or below 5% probability level.
5. In 75% of the selected pharmaceutical companies (fifteen out of twenty), the amount of creditors had increased at a decreasing rate during the study period and most of them were statistically significant at 5% probability level. It indicated that the amount of creditors of pharmaceutical companies had increased at a decreasing rate during the period under study.
6. In most of the selected companies ( twelve out of twenty), the amount of current liabilities and provisions, one important source of short term working capital, had increased at decreasing rates which were also statistically significant at 5% probability level during the period under study.
7. In 85% of the selected pharmaceutical companies (seventeen out of twenty), the amount of current assets had increased at a decreasing rate during the study period. In most of the cases, it was statistically significant at 5% probability level. It signified that, the pharmaceutical company had increased its investment in gross working capital throughout the study period.
8. In eighty five percent of the selected companies (seventeen out of twenty), the amount of net working capital had increased significantly at 5% probability level.
9. In most of the selected companies (Ninety five percent of total selected companies) maintained their average current ratio at higher level as compared to conventional standard of 2:1 during the study period.



10. In 85% of the average quick ratios (seventeen average quick ratios Out of twenty average quick ratios), were above the conventional standard of 1:1.
11. In 75% of the average absolute liquid ratios (fifteen out of twenty) of selected companies, it was below the conventional standard norms of 0.5:1.
12. In most of the selected pharmaceutical companies (fifteen out of twenty), the average inventory turnover ratios (in times) were below the average of the selected samples. It indicated that the average inventory holding in most of the selected pharmaceutical companies was longer as compared to the average inventory holding of the selected companies.
13. The average debtors turnover ratio (in times) of 60% of the selected companies (twelve out of twenty) were below the average of the selected samples. It represented that most of the pharmaceutical companies offered longer credit facilities to its customer.
14. The study of cash turnover ratio (in times) of 40% (eight out twenty) of selected companies was above the average of the selected samples and most of the cash turnover ratios were not satisfactory during the period under study.
15. Working capital turnover ratios (in times) of 55% (eleven out of twenty) of the selected companies were below the average of the selected companies.
16. The average creditors turnover ratio of half (ten out of twenty) of the selected companies were below the average of the selected samples.
17. In most of the cases (fourteen out of twenty), the average gross profit ratios of the selected companies were above the average of the selected companies.
18. The average net profits of half of the selected companies were below the average of the selected companies. 50% of the selected companies, the average net profit ratios were negative and in remaining 50% cases, the net profit ratios were positive.
19. In most of the selected companies (fourteen out of twenty), the average ROCE were above the average of the selected samples during the study period.
20. In half of selected companies ( ten out of twenty), the average CATA, Inventory to Current Assets, Debtors to Current Assets & Cash and bank to Current Assets were above the average of the selected companies.

21. Forty percent of the average of loans and advances were below the average of the selected samples.
22. Seventy five percent of the selected companies, the creditors to current assets were above the average of selected companies.
23. The average working capital leverage of twelve selected companies were above the average of the selected companies and these companies were taking high risky with a high return.
24. The average working capital financing risks of fifteen selected companies were above the average of total samples.
25. The Motaal comprehensive liquidity test exhibited that in 70% of the cases (fourteen cases out of twenty), the liquidity followed an increasing trend during the study period.
26. Principal component analysis stated that CR was the principal component of liquidity, Gross profit ratio was the principal component of profitability and Inventory turnover ratio was the principal component of efficiency.
27. **The results of regression** of gross profit on current ratio it is seen that out of total 14 companies under study, 10 companies earned profit and 4 incurred loss almost during the entire period. Loss making companies are found to maintain, on an average, relatively lower current ratio than the profit –making companies.  
Moreover, Pharmaceutical Industry in our country is a profitable sector. It is due to the reason that the firms in the industry are very competitive and has gained efficiency in managing its resources competently. The impact of overall working capital policy on profitability in this industry is proved to be significant and the ratios related to working capital can explain the differences among the firms and it is also evident that overall performance of this industry, working capital plays a vital role.

#### **6.1.10. Conclusion**

Amount of gross working capital as well as net working capital of all the selected companies are increasing at a decreasing rate during the period under study. The selected companies had been generating about 42% of the total working capital, on an

average, from long term sources of fund in order to finance for working capital during the study period. The liquidity trends in most of the selected companies were increasing during the recent years of the study. Amount of investment in the entire component of working capital like, inventories, debtors, cash and bank, loans and advances of all the selected companies were increasing in the recent years during the period under study. The selected companies had invested about 48% on an average, in current assets out of the total assets. The principal component of working capital comprises of inventories and sundry debtors. Most of the pharmaceutical companies have little amount of cash and bank invested in working capital. Moreover, Pharmaceutical Industry in our country is a profitable sector. It is due to the reason that the firms in the industry are very competitive and has gained efficiency in managing its resources competently. The impact of overall working capital policy on profitability in this industry is proved to be significant and the ratios related to working capital can explain the differences among the firms and it is also evident that overall performance of this industry, working capital plays a vital role.

## **6.2 Suggestions:**

From the analysis the following suggestions can be made for maintaining optimum level of working capital.

1. The Pharmaceutical companies should try to maintain a definite proportion among different component of working capital in regard to keep overall current assets and adequate quantum of liquidity all the times.
2. The Pharmaceutical companies should maintain considerable amount of cash and bank balance in order to meet its short term commitments and for emergency requirement. This will help the companies to increase their margin of working capital and also to make adequate arrangement of credit facilities with banks so as to maintain good amount of liquidity.
3. Operating cycle period should be decreased in order to avoid cash blocked for a long period.

4. Creditors turnover ratio found to be significant inverse relationship during the study period. It suggested that the Pharmaceutical companies need to increase credit facilities period from their suppliers.

### **6.3 Limitation of the study**

The study is not free from any limitation. The following limitation was observed from the study:

1. Analysis of working capital management has been made from 20 selected companies out of a large number of companies belonging in the pharmaceutical industry. Therefore the sample size is small and our analysis may be more accurate if sample size could be increased.
2. Considering the problems of availability of data samples have been selected on the basis of average net profit earned by the companies during the entire study period. But one year's huge loss may cause the company in the loss making and may not be selected.
3. The study has been undertaken only through the analysis of quantitative financial data. The qualitative aspect of pharmaceutical industry having significant impact on their performances which remain untouched such as employee's relation, working capital environment etc.
4. The data collected for the present study are entirely secondary data i.e, collected from published annual reports. But beside secondary data, primary data on customers' satisfaction, employees' promotion and relation could be done. So the study carries all the limitations inherent to the secondary data.
5. All statistical tools used for the present study have their usual limitations.
6. Analysis had been done on the basis of their mean value of the selected companies without considering the average of the pharmaceutical industry as a whole which is one of the key limitations in the study.
7. The performance of pharmaceutical companies based on abroad had not been compared with the Indian pharmaceutical companies.

8. Longer period of study may give better result than the study period of 15 years.
9. Impact of profitability on different component of working capital has remained untouched.

#### **6.4 Scope for Further Study**

The following are the areas in the field of working capital management which can be addressed in the research studies to be carried out in future.

1. The present study has made only twenty companies belonging to pharmaceutical industries in India. A larger sample of fifty or more may be considered to get better result.
2. The present study is based on Indian Pharmaceutical Industry. However, a comparative study may be done with the multinational companies or the pharmaceutical companies based on abroad.
3. The present study has made a comparative study between top ten pharmaceutical companies and bottom ten pharmaceutical companies based on fifteen years average net profit. However, a comparative study may be done among the different manufacturing industries and the industries belonging to service sector in India.
4. The present study has not been analysed the impact of profitability on different component of working capital. However, a further study may be carried on.

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