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## TRENDS IN PRODUCTION, SALES AND COST STRUCTURE OF SELECT PHARMACEUTICAL INDUSTRIES IN INDIA

**DR. N. PASUPATHI**  
**DIRECTOR**  
**PG & RESEARCH DEPARTMENT OF MANAGEMENT SCIENCE**  
**PARK'S COLLEGE (AUTONOMOUS)**  
**TIRUPUR**

### ABSTRACT

*In this article, the trends in production, sales, cost of sales and other costs have been analysed in detail. Trend analysis is effective only when relevant and related items are studied together. Thus, the results which are shown have to be viewed in conjunction with the resources employed. For the purpose of analysis all components have been pooled. Value is calculated in select pharmaceutical companies to analyse the production, sales and cost position of industry under study. 2005-06 has been chosen as the base year equal to 100. Index numbers have been calculated for the remaining years based on the base year.*

### KEYWORDS

pharmaceutical industry, trend analysis.

### INTRODUCTION

Financial analysis is a process of getting an insight into the operating activities of a business enterprise. It is a process of selection, relation and evaluation. The first step is to select from the total information available about a business the data relevant to the decision under consideration. The second is to arrange the relevant data in a way that will bring out significant relationships. The final step is to study these relationships and evaluate or interpret the results. The important areas of performance evaluation for the present study are: Production Trends, Sales Trends, Cost Trends.

**Production Trend** - Production is one of the most important areas of performance. Production performance of a company can also be measured by analyzing capacity utilization. The production of a concern or sector can be compared for different years with that of the companies in the same industry and may give an idea as to how the company has performed in the particular year under consideration.

**Sales Trend** - The figure of sales is the index of progress made by the company. It can also be used as an indicator of managerial efficiency. Marketing of the product is also one of the most important areas of operations. In the process of performance evaluation, sale indices are computed and compared with those of other similar companies for arriving at an objective conclusion.

**Cost Trend** - Cost is defined as 'the amount of expenditure incurred on or attributable to a specified article, product or activity'. Thus, cost has been defined as expenditure incurred on a thing. A study of cost trends helps in measuring efficiency or inefficiency with which each task has been carried out. It also helps in having control over expenditure and in fixing prices on the basis of the study of the cost trend which plays an important role in forecasting, planning, and budgeting and in breakeven analysis; wasteful expenditure, if any, can be avoided.

### OBJECTIVES OF THE STUDY

The study is carried out with the following specific objectives:

- 1) To analyse the trends of production, sales and cost of the selected pharmaceutical units in India.
- 2) To present summary of the study and to make suitable suggestion for improvement in the competitive business world.

### PERIOD OF STUDY

The period 2005-06 to 2014-15 is selected for this study of pharmaceutical industry in India. This 10 years period is chosen in order to have a fairly long, cyclically well balanced period, for which reasonably homogenous, reliable and upto-date financial data would be available. Further, the span chosen for the study is the period of the beginning of liberalization measures introduced by the Government of India. Hence, the period 2005-06 to 2014-15 is an era of growth of Indian Pharmaceutical industries has got genuine economic significance of its own.

### SELECTION OF SAMPLE

Keeping in view the scope of the study, it is decided to include all the companies under Indian pharmaceutical industry working before or from the year 2005-06 to 2014-15. But, owing to several constraints such as non-availability of financial statements or non-working of a company in a particular year etc., the researcher is compelled to restrict the number of sample companies to ten. Therefore, this study is ex post facto based on survey method making a survey of ten companies under Indian Pharmaceutical Industry. There are seventeen companies operating in Pharmaceutical Industry in India. The details of the financial data available in only ten companies of Indian pharmaceutical industries.

### SOURCE OF DATA

The study is mainly based on secondary data. The major source of data analyzed and interpreted in this study related to all those companies selected is collected from "PROWESS" database, which is the most reliable on the empowered corporate database of Centre for Monitoring Indian Economy (CMIE). It contains a highly normalized database built on a sound understanding of disclosure in India on around 12,000 companies, which include public, private, co-operative and joint sector companies. The database provides financial statements, ratio analysis, funds flow, cash flow, product profiles, returns and risk on the stock market etc. Besides proress databases, relevant secondary data have also been collected from BSE Stock Exchange Official Directory, CMIE Publications, Annual Survey of Industry, Business newspapers, Reports on Currency and Finance, Libraries of various Research Institutions, through Internet etc. The study required variety of data therefore; websites like <http://indiainfoline.com>, [www.indiastat.com](http://www.indiastat.com) and [www.google.com](http://www.google.com) have been comprehensively searched.

### LIMITATIONS OF THE STUDY

The data used in this study have been taken only secondary sources and as such its findings depends entirely on the accuracy of such data.

### LITERATURE REVIEW

It is mandatory to review the literature available with respect to the area of the research study. Measuring the performance of the corporate sector has always been an area of controversies from the point of view of the government, shareholders, prospective investors, creditors, employees and any other stockholders. Several studies have been undertaken to evaluate the financial performance in the corporate sector. This chapter presents some of the studies conducted by financial analysis.

**Amita S.Kantawala (2001-02)**<sup>1</sup> in his study on financial performance of non-banking finance companies (NBFCs) in India concluded that there exists a significant difference in the profitability ratios, leverage ratios and liquidity ratios of various categories of NBFCs. The more number of ratios do not statistically differed from one another in majority of the cases except the trading in share and investment holdings were compared with leasing. The analysis of variance along with the details the average ratio may become a useful guide to companies to decide the dissatisfaction or continuation in the same line of business considering overall profitability within the regulatory frame work.

**Kar.N.C and sahuo,sk,(2001)**<sup>2</sup> in their study stated that even though, still the growth rate has been consistent. The average growth rate of current assets is higher in Bajaj Auto Ltd. It is observed that there exists a high degree of positive correlation between sales and current assets.

**Padmaja Manoharan (2002)**<sup>3</sup> through her study on profitability of cement industries in India has revealed that the profitability of firms depend on age, size and region. She has indentified that quality of earnings depend on cost management, assets management and leverage management.

**Shanmugasundaram and Ratnam (2002)**<sup>4</sup> in their study on "Measures for sustaining profitability of spinning mills", analyzed and the financial performance of 140 spinning mills in Tamilnadu during 1994-2000. The mills were classified as high and low profit mills. The financial performance of the spinning mills during the six years was found to be poor.

**Nand Kishore Sharma (2002)**<sup>5</sup> in his study on Financial appraisal of cement industry in India found that the current and quick ratio showed a decreasing trend and also it varied from time to time. On comparing the current and quick ratio of cement industry, six companies were higher than the average and four recorded lower than the average of industries. The average debt equity ratio was 54:34 percentages. This ratio showed a decreasing trend in the first 4 years of study but after that it registered an increasing Trent. The ratio of fixed assets to total debt always showed more than 100 percent, which indicated that the claims of outsiders were covered by the fixed assets of that organization. The return on capital employed recorded average of 15:46 percent. This ratio varied from 2.76 percent to 21.80 percent during the period of study.

**Sankaran (2002)**<sup>6</sup> has made a financial performance evaluation of ten (five Indian and five MNC'S) Pharmaceutical companies in India. The financial performance was analyzed with the help of liquidity, profitability and solvency perspectives. The companies were ranked for assessing corporate excellence by ET-HBSAT model, bankruptcy and average return on net worth with the help of Altman model. It identified that the financial performances of MNC Pharma companies are better than the Indian companies.

**Mansur Mulia.A(2002)**<sup>7</sup> in his study on use of 'Z' score analysis for evaluation of financial health of textile mills found that the textile mill under study was just on the verge of financial collapse. The financial health of the mill was never in the too healthy zone during the study period. The position of its performance front was very unviable and apprehensions of the total failure of the mill were inadequate level of working capital. The textile mill, on the volume front, had failed to achieve the sales target set for different years mainly due to the low achievement of production performance owing to the underutilization of the available capacity which contributed to the deterioration of the financial health of the mill.

**Prasad Sangameshwaran (2002)**<sup>8</sup> has studied in detail the importance of branding the cement. Industry analysts feel that branding efforts have been initiated due to the cluster. The large media spends that has influenced the increased visibility for the brand. Cement has always been loyal to the door media, walls and hoarding. They spelled out measures why branding becomes important for cement for cement players today. Another reason is the nature of the product, which influence the manner in which it is sold. Being bulky by nature, cement manufactures sell their products close to the area of manufacturing. Finally he pointed out that to stand out in the cluster, branding would naturally help.

**Jack Glen, Kevin Lee and Ajit Singh (2002)**<sup>9</sup> in their study presents time-series analyses of corporate profitability in seven leading Developing countries (DCs) using the common methodology as the persistence of profitability (PP) studies and systematically compare the results with those for Advanced Countries (ACs). Surprisingly, both short and long term persistence of profitability for DCs was found to be lower than those for ACs. The paper concentrated on economic explanation for these findings. It also reports the results on the persistence of the two components as profitability-capital-output ratios and profit margins. These two raise important general issues of economic interpretation for persistence of profitability (PP) studies, which are outlined.

**Tze-wei Fu, Mei-Chiu ke and Yen-Sheng Huang (2002)**<sup>10</sup> examined the relationship between profitability and financial capital for 1,276 small firms in Taiwan over the period 1992-1997. The results indicated a statistically positive relationship between profitability and capital growth. When financial capital was further divided into debt and equity, the results indicate a significantly positive relationship between profitability and equity financing, but a significantly negative relationship between profitability and debt financing. Moreover, the profitability of small firms was positively related to both the external economic conditions and the firms' previous profitability.

**Kaen and Baumann (2003)**<sup>11</sup> in their study measured the profitability of US companies with a sample of 64 selected randomly. They had taken sales, EBITDA, EBIT, EBITDA margin, EBIT margin, total assets and number of employees as independent variables and return on assets as dependent variables for the study. Using regression and correlation techniques their study resulted that about half of industry, firm's profitability increases at decreasing rate and eventually declines as the firms become larger, for the remaining half, no relationship between profitability and size was found.

**Bardia (2004)**<sup>12</sup> Conducted an empirical study on liquidity management of the largest public sector company the steel Authority of India Ltd. (SAIL). This study put emphasis of working capital management of the company. The results of spearman's rank correlation and students' revealed the significant positive association between the liquidity and the profitability of the company. Further metal's comprehensive rank test and other statistical techniques demonstrated the need for improvement in debt collections, maintenance optimum quick ratio, need for arrangement of short term finances to manage the short terms liquidity of the company.

**A.V.Dharmadrishnan(2004)**<sup>13</sup> has studied consolidation in the cement industry. The cement industry has been going through a period of re-alignment or consolidation since the early 1990s but still has a long way to go in this regard. The Indian Cement industry is the second largest in the world after China. The cement industry's progress since its inception in 1914 has been significant. Today in terms of quality, productivity and efficiency the industry is second to none in the world. India can produce cement to any international standards. Today, the industry has a combined installed capacity of 153 million tonnes. The cement industry's growth is in line with the Gross Domestic Product growth. Cement exports registered a 35 per cent growth in 2002-03 over the previous year.

**Arthur S. Leahy (2004)**<sup>14</sup> Tested the proposition that profitability was related to the functions performed and risks assumed by a company. The tree measures of profitability such as gross margins, operating margin and berry ratio are examined and related to proxies for the functions performed and / or risks assumed by those manufactures. The results showed that SGA / Sales, Inv / COGs and AP / COGs variables are significant determinants of profitability. The results vary according to the measures of profitability employed i.e., the significance of the independent variable may depend on the profitability measures employed.

**Patel (2004)**<sup>15</sup> in his study made an attempt to examine the profitability of Colour – Chem Limited during the period 1981-1999. The multiple correlation coefficient technique was used for analyzing the impact of net fixed assets, sales and net worth on the profitability. The result of the study showed that sales and net fixed assets, sales and net worth, and net fixed assets and net worth had significant effect on net profit of colour – Chem limited. The analysis of profitability ratios showed that the company was in a round position.

**Marcos A. M. Lima and Marcelo Resende (2004)**<sup>16</sup> in their work entitled profit margins and business cycles in the Brazilian industry: a panel data study investigated the relationship between profit margins and business cycle in the Brazilian industry during the 1992-1998 period, taking as reference a dynamic panel data model founded around a conjectural variation framework. The empirical results indicated pro-cyclical behavior or profit margins for the aggregate business cycle but are less clear in the case of sector-specific business cycle variables. Among the most robust results, one can highlight the roles of lagged profitability and import intensity and the negligible role of union density.

**Sueyoshi, Toshiyuki (2005)**<sup>17</sup> Financial Ratio Analysis is newly proposed to examine the financial performance of the American Power / energy industry. The new approach compares the financial performances of 147 non-default firms with those of 24 default firm in the US power / energy market. The proposed approach is a new type provides a set of weight of a linear discriminant function, consequently yielding an evaluation score for group membership. Such weight estimates, along with an evaluation score, of the discriminant function provide a total financial evaluation measure, based upon which we can determine the financial performance of the power / energy firms.

This empirical study informs that both leverages (debt) and profitability (returns of equity) are important financial factors in terms of avoiding corporate results obtained from the American power / energy industry are further extended to the International comparison of other major industrial nations including Japan and the European nations. The international comparison concludes that Japanese electric power firms have enough managerial and financial capabilities even if the American financial standard is hypothetically introduced into the evaluation of their financial performances. However, the empirical results also indicate that the Japanese power industry performs barely above the American standard. Thus, corporate leaders in the Japanese power industry need to pay more serious attention to their corporate finances and financial strategies. Such financial perspective will be increasingly important along with the current deregulation policy of the Japanese government.

**Alovsat musulmov(2005)**<sup>18</sup> This paper examines the post-privatization performance of privatized companies in the Turkish cement industry. The findings indicate that, when performance criteria for both the state and private enterprises are considered privatization in the cement industry results in significant performance deterioration. Total value added and the return on investment declines significantly after privatization. This decrease mainly stems from deterioration in assets productivity. The decline in asset productivity, however, is not caused by an increase in capital investment, since post privatization capital investment did not change significantly.

Significant contraction in total employment and increase in financial leverage after privatization are among the key research findings. Privatization through public offering, gradual privatization and domestic ownership are found to stimulate the financial and operating performance of firms following privatization.

**Hamasalakshmi and Manickam (2005)**<sup>19</sup> in their study on "Financial performance analysis of selected software companies" examined liquidities, profitability and leverage position on thirty-four software companies during the period 1998-1999 to 2001-2002 by using ratios, correlation and multiple regression analysis. The study revealed favourable liquidity and working capital position. They concluded that the companies vary on the internal financing and overall profitability position of the software companies showed a moderately increasing trend.

**Dr. Sanjay J.Bhayani (2006)**<sup>20</sup> in his study an attempt has been made to study the cost component of cement units under the study. For the purpose of analysis of cost component, all component cost has been calculated as percentage of sales. A study has been made by using data from financial statements of top five cement companies of India, viz.,

Gujarat Ambuja Cements Ltd., (GALL), Dalmia Cements Ltd., (DCL), Madras Cements Ltd., (MCL), Indian Cements Ltd., (ICL) and Shree Cements Ltd., (SCL) the data of total cost various cement companies under study have been rearranged and classified under the following heads; Raw materials and stores consumed, salaries and wages, indirect taxes, power and fuel, depreciation, administrative selling and distribution and other expenses and financial charges. He found out from his study that the most influencing factor in cost structure of cement industry is power and fuel cost, the portion of this cost of total was 21 percent, where the portion of raw materials cost and selling and distribution and other cost in total cost structure were 19.27 percent and 16.60 percentage respectively. So it can be calculated that to improve the profitability of units there is a need to give proper attention towards this cost by corporate. The closest view of analysis showed that the average cost in almost all elements of GACL was closer to the average industry.

**Agiomirgianakis, Voulgaris and Papadogonas (2006)**<sup>21</sup> examined financial determinants of firm profitability and employment growth are identified by using a panel of 3094 Greek manufacturing firms for 1995 and 1999, just before the country's accession to the European Monetary Union. The analysis includes stepwise regression models.

The independent variables used are size, age, location and exports, as well as a number of financial ratios describing the asset structure, capital structure, reliance on debt, employee profitability and managerial efficiency.

The results show that size, age, exports, debt structure, investment in fixed assets and profitability assets and sales contribute significantly to firm growth. Econometric results also reveal that firm size, age, exports, sales growth, reliance on debt on fixed assets and investment growth, as well as efficient management of assets, influence profitability.

**Sam Luther (2007)**<sup>22</sup> analyzed the liquidity, Risk and profitability. To measure the liquidity two important ratios are used; they are current ratio and quick ratio. There are two major categories of profitability ratios 1.profit in relation to sales, and 2.profits in relation to investments. One of the major drawbacks of the profits in relation to sales is that it ignores the Japanese electric power firms have enough managerial and financial capabilities even if the American financial standard is hypothetically introduced into the evaluation of their financial performances. However, the empirical results also indicate that the empirical results also indicate that the Japanese power industry performs barely above the American standard. Thus, corporate leaders in the Japanese power industry need to pay more serious attention to their corporate finances and financial strategies.

Such financial perspective will be increasingly important along with the current deregulation policy of the Japanese government deregulation policy of the Japanese government.

**Dr. B. Ramachandra Reddy and Dr. B. Yuvaraja Reddy (2007)**<sup>23</sup> in their study, an attempt has been made to examine the effect of selected variables on MVA of selected cement companies in India from 01.04.2003 to 31.03.2004. For the purpose of the study 3 major cement units and 7 mini plants were selected. The MVA has been taken as a dependent variable and return on net worth, capital productivity, labour productivity, earnings per shares, economic value added, return on sales (or) turnover, return on total assets and cash profits have been selected as independent variables. It can be inferred them regression analysis that none of the factors was found to have significant impact on MVA. But EPS was found to have a negative and significant effect on MVA. This implies that the MVA of cement companies is not only affected by selected independent variables but also influenced by other factors.

**Kasturi Rangan, S. (2008)**<sup>24</sup> in his study made an attempt to identify the factors determining the profitability of the banks through partial correlation co efficient for the period from March 2000 to 2007. These banks were categorized into 5 different groups for the purposes of analysis.

**Victoria Bellou, Andronikidis, (2009)**<sup>25</sup> depicts in their study that organizational climate, which includes the setting of values, rules and priorities to be followed by all individuals involved in the organization, has been receiving increased attention over recent years. The purpose of this paper is to look into the prevalent organizational climate within hotels and to identify variations employees' perception, based on whether they hold managerial or non-managerial positions. The results show that efficiency, reflexivity, innovation and flexibility, supervision support and quality were among the most prominent characteristics affected by organizational climate, whereas outward focus and pressure to produce were least affected. Moreover, the only differences revealed between managerial and non-managerial employees were in the areas involvement and efficiency.

**Ray Sarbapriya and Mihir Kumar Pal (2010)**<sup>26</sup> in their study reflect dismal declining trend after the path -breaking economic reforms in 1991. There is an urgent need for developing a comprehensive plan for cement industry so that it can survive in the post -liberalized Indian environment and make its presence global.

**Chandrakumarmangalam, P Govindasamy (2010)**<sup>27</sup> in their study have discussed the impact of leverage on the profitability of the firm. The relationship between the debt and equity ratio and earnings per share and how effectively the firm be financing. The leverage and profitability and growth are related and the leveraging impact on the profitability of the firm.

**Glocker, Daniela (2011)**<sup>28</sup> in this paper I evaluate the effect of student aid on the success of academic studies. I focus on two dimensions, the duration of study and the probability of actually graduating with a degree. To determine the impact of financial student aid, I estimate a discrete-time duration model allowing for competing risks to account for different exit states (graduation and dropout) using individual level panel data from the German Socio-Economic Panel (SOEP) for the years 1984-2007. My findings suggest that the duration of study is responsive to the type of financial support a student receives. There are three main results. First, student aid recipients finish faster than comparable students who are supported by the same amount of parental/private transfers only. Second, although higher financial aid does on average not affect the duration of study, this effect is (third) dominated by the increased probability of actually finishing university successfully.

**Rai Sandeep Kumar and Dwivdei Shailesh K, (2011)**<sup>29</sup> in their study, stated that the Cement Industry in India is moment. Driven by a booming real estate sector, global demand and increased activity in his fracture development such as state and national highways, the cement industry has witnessed tremendous growth. The realty sector boomed but could not sustain for long and it collapsed because of the loan defaults. This situation spread like wild fiber and put the Indian economy in danger like the US economy. The US financial crises have affected many countries of the world and India is no exception to it. Because of these financial crises, Indian economy has lost more than 2% of GDP growth. Almost all sectors of the Indian economy have been affected by this crisis.

**N.VenkataRamana (2012)**<sup>30</sup> Bankruptcy is a situation where the liabilities exceed the assets in the company, generally it happens due to under capitalization, not maintain sufficient cash, sources are not utilize properly, in efficient management in all activities, sales decline and market situation etc. Predicting bankruptcy is a dire vital for taking curative and corrective measures for better financial planning, profitability, liquidity and solvency efficiency of the firm. In this study an attempt has been made know the financial performance and also to predict the risk of bankruptcy for selected cement companies from 2001-to-2010.

Liquidity Ratios; Working Capital Ratios, Solvency Ratios and Altman Z-Score Analysis was made to diagnose the problem of bankruptcy. The result reveals that liquidity, working capital turnover efficiency and solvency position of the selected cement companies are not satisfactory. In this study the Z-Score analysis results show that KCP Ltd and Kesoram Industries Ltd have poor financial performance and Dalmia Bharat Ltd is at the edge of bankruptcy.

**Sachin Mittal, (2012)**<sup>31</sup> Indian cement industry is the second largest cement industry in the world. The paper attempts to examine the working capital trends on the basis of size of working capital, ratio of working capital to total assets, fitting trend line analysis, and correlation amongst the profit, sales and current assets. The present study opined that in India, cement industry has low level of profitability due to mismanagement of current assets and current liabilities. The main objective of working capital management is to arrange the needed funds at right time from the right sources and for the right period so that tradeoff between liquidity and profitability may be realized. The study unearthed that the cement industry in India are failing to maintain the required level of working capital.

**Sarangarajan (2013)**<sup>32</sup> Indian cement industry is the second largest cement industry in the world. The paper attempts to examine the performance and management of assets of the select cement companies in Tamilnadu with the support of Trend analysis. Data employed in this study are all secondary in nature which is frequently inspected by Institute of Chartered Accountants of India and Security Exchange Board of India. The pooled data collection is to assess the impact of regulation on performance of asset of cement companies in Tamil Nadu over the time horizon viz., 1996-97 to 2005-06 The variables used in this study are Land, plant, stock, cash and debtors. The authors have chosen four cement companies in Tamilnadu and using a statistical technique as Trend analysis with the aid of Minitab software version 15. On an analysis it is found that cement plants taken first study have procured land not only for plant construction but also mining lands keeping the future expansion/new plant on a long term basis. It is natural for Tamil Nadu cement factories to hold higher inventory of limestone because of various factors involved in mining operation and location of the mining land from the factory. As found in the Trend Analysis the cement plants had changed their marketing policy from "Cash and Carry" to credit sales. This change in policy of offering credit to large consumers is a major cause for higher debtor's balance in the recent years.

The cement plants in Tamil Nadu in their efforts to increase their market share started offering credit to the consumers especially for real estate builders which has resulted in low cash balance. It is expected that change in cement customer mix will result in a comfortable cash balance in future. It is found that so many small cement industries have been closed because of improper cash management. This has resulted in cash crunch In Cash Trend Analysis. The consumption of cement by government increases, this trend may be expected to decline.

**Dr. P. Krishna Kumar (2013)**<sup>33</sup> The study was designed to investigate the progress of Indian cements industry since 1991, in terms of its growth in installed capacity, production, exports, and value additions; In detail the research methodology used for the study that has focused on the past, present and the future performance of Indian Cement Industry (ICI) at the macro level and the Chettinadu Cement Corporation Limited (CCCL) at the micro level as a case firm. The study purely relies on secondary data. The secondary data were collected for a period of fifteen years (1991-92 to 2005-06) from the database maintained and made available by several organizations viz., Cement Manufacturers Association, Export Import Bank of India, Center for Monitoring Indian Economy etc. for the purpose of effective periodical analysis. In order to know the progress of ICI, annual time series data for the six variables were.

Studied for trend, cyclical variation and random variation, as seasonal variation was not observable in the annual data. The estimated trend equations were evaluated for their goodness of fit and predictive power and found valid to draw inferences. The values of the six variables were projected to the next five years. Estimated values were adjusted for the likely effects of cyclical variations (c) the reliability of predicted values were evaluated with the help of forecasting error. In the end of the study implications and conclusion were provided.

**Acharekar Sachin Vilas Vijaya (2013)**<sup>34</sup> Working capital is considered to be life -giving force to an economic entity and managing working capital one of the most important functions of corporate management. Working capital management (WCM) is the management of short – term financing requirements of a firm which includes maintaining optimum balance of working capital components –receivables, inventory and payables – and using the cash efficiently for day – to –day operations. The main objectives of this study are to examine and evaluate the working capital management in Cement Industries Limited, examine the management pattern of inventory, liquidity position and receivables management. This also finds the relationship between Working Capital Efficiency and Profitability.

## RESULTS AND DISCUSSIONS

### 1. TRENDS IN PRODUCTION

Production may be considered as the backbone of a manufacturing enterprise. In business enterprise, production will be considered to be very effective and useful when it serves the dual purpose: 1) It must operate primarily to satisfy customer demands and 2) It must permit production activities to operate in an economical and efficient manner. In the economic sense "production" means both making goods and rendering services that add value to a product even though there are no utilities and utilization of resources such as, labour, energy, materials, equipment and machinery, etc. Utilities are goods and services which have want satisfying powers.<sup>1</sup>

**Ho: There is no significant difference between actual value of production and the trend value of production among different years.**

The trends in production of select pharmaceutical companies for the periods from 2005-06 to 2014-15 have been presented in Table 1. It exhibits that the highest mean value of production was Rs.6307.98 crores in CL which accounts of total industrial production, followed by Rs.5980.89 crores in DRLL production. The remaining production of industry by LL was Rs.4915.92 crores, followed by APL with Rs. 4118.49 crores, CHL with Rs.2703.98 crores, GPL with Rs.2118.91 crores, ILL with Rs.1935.89 crores, TPL with Rs.1886.93 crores, WL with Rs.1685.19 crores and DLL with Rs.1579.79. On the basis of average production, the maximum contribution together by CL, DRLL and LL of industrial production.

The value of production of the pharmaceutical industry for the period of study from 2005-06 to 2014-15 has been shown in Table 1. The production of pharmaceutical industry has marked an increasing trend throughout the period. In the year 2005-06 the production was Rs.13.627.20 crores which increased to Rs.59320.27 crores in 2014-15, marking an increase of 435.31 per cent in the indices. The mean value of production of pharmaceutical industry during the study period was Rs.33143.97 crores. The compound annual growth rate of production was 15.85 per cent. The CV value of actual value of production was 32.88 per cent which indicates more fluctuation in the production of pharmaceutical industry during study period.

The comparison of actual value of production has been shown in Table 1 which depicts that the trend values differed materially from the actual production. The original values of production were lower than the trend values in 2007-08, 2008-09, 2009-10, 2010-11 and 2011-12. It may be pointed out that in the remaining year, the original values of production were higher than the trend values. The calculated  $\chi^2$  value comes to 63983.39 which is higher than the table value of 16.919 at 5 per cent level. It indicates that the differences between actual values of production and trend values of production in different years were significant. Further the fitted linear regression can be used for prediction of production.

### 2. TRENDS IN SALES

'Sales' is the value of output supplied to the customers. It is the life blood of a business enterprise without which the business cannot survive. Further, 'Sales' is the indicator of the operational efficiency of management in how efficiently the management has used the assets of the business. The higher volume of sales is more efficient the management. Sale is also related to profitability of an enterprise. The higher amount of sales more profitable the business is and vice versa. The matching of costs incurred during a certain period with sales generated during that period reveals the net income or net loss. The trend of sales indicates the direction in which a concern is going and on the basis of which forecast can be made. The trend analysis of sales helps to understand the growth of a business enterprise.

<sup>1</sup> S.A. Sherlekar, "Industrial Organisation and Management", (Himalaya Publishing House: Bombay), 1998, p. 375

**Ho: There is no significant difference between the actual value and trend value of sales among different years.**

The trends in sales of select pharmaceutical companies for the periods from 2005-06 to 2014-15 have been presented in Table 1. It exhibits that the highest mean value of sales was Rs.6167.07 crores in CL which accounts of total industrial sales, followed by Rs.5808.97 crores in DRLL sales. The remaining sales of industry by LL was Rs.4831.64 crores, followed by APL with Rs. 4051.75 crores, CHL with Rs.2675.86 crores, GPL with Rs.2106.47 crores, ILL with Rs.1896.74 crores, TPL with Rs.1857.77 crores, WL with Rs.1651.74 crores and DLL with Rs.1514.71. On the basis of average sales, the maximum contribution together by CL, DRLL and LL of industrial sales.

The value of sales of the pharmaceutical industry for the period of study from 2005-06 to 2014-15 has been shown in Table 1. The actual sales of pharmaceutical industry have marked an increasing trend throughout the period. In the year 2005-06 the sales were Rs.13367.30 crores which increased to 58093.50 crores in 2014-15, marking an increase of 434.59 indices. The mean value of sales during the study period was Rs.32562.73. The SD and CV value were 15338.03 and 47.10 per cent which indicate more fluctuation in the sales of pharmaceutical industry during the study period. The CAGR values were registered at 2.93 per cent.

The comparison of actual value of sales and trend value of sales has been shown in Table 1 which depicts that the trend values differed materially from the actual sales except in the year 2008-09 and 2013-14. The original values of sales were lower than the trend values in the year 2007-08, 2008-09, 2009-10, 2010-11 and 2011-12. In the remaining years, the original values of sales were higher than the trend values. The calculated  $\chi^2$  value comes to 62883.70 which is higher than the table value of 16.919 at 5 per cent level. It indicates that the differences between actual value of sales and trend value of sales in different years were significant.

### 3. TRENDS IN COST OF PRODUCTION

The price for the product is usually fixed by taken into account the cost of the production and adding a mark-up which may be stated as a percentage of the cost for profit. The cost of production value is determined by the sum of the cost of the resources that went into making it. The cost can be composed of the cost of any of the factors of production including prime cost, work cost, administrative cost and selling cost, etc. Broadly, the determinants of cost of production are: the size of the plant, the level of production, that is, the utilization of the plant, the nature of technology used, the process of the various inputs like raw materials, labour, power and fuel, managerial and labour efficiency, etc. For instance, the larger the size of the plant, the greater are the internal economies of production and consequently. The large firm will experience increasing returns of decreasing cost. In other words, the average physical product will rise and correspondingly, the average cost will decline. Likewise, there will be better utilization of plant, the use of better technology, and fall in the cost of production. In the same manner, a fall of prices of inputs like raw materials, or a fall in transport charges will also reduce the average cost of production.<sup>2</sup>

**Ho: There is no significant difference between actual values and trend values of cost of production among different years.**

The trends in cost of production of select pharmaceutical companies for the periods from 2005-06 to 2014-15 have been shown in Table 1. It depicts that the highest mean value of cost of production was Rs.4158.31 crores in CL which accounts of total industrial cost of production, followed by Rs.3292.22 crores in DRLL cost of production. The remaining cost of production of industry by APL was Rs.3047.30 crores, followed by LL with Rs.2974.31 crores, CHL with Rs.1636.93 crores, GPL with Rs.1253.46 crores, ILL with Rs.1270.74 crores, WL with Rs.1128.15 crores, TPL with Rs.1074.18 crores and DLL with Rs.905.16. On the basis of average cost of production, the maximum contribution together by CL, DRLL and LL of industrial cost of production.

The value of cost of production of pharmaceutical industry for the period of study from 2005-06 to 2014-15 has been shown in Table 1. The cost of production of pharmaceutical industry has marked an increasing trend throughout the period. The mean value of cost of production of pharmaceutical industry during the study period was Rs.20740.49 crores. The SD and CV values of cost of production were 9450.06 and 45.56 per cent respectively during the study period. The CAGR value was marked 15.10 per cent.

The comparison of actual value and trend value of cost of production has been depicted in Table 1 which shows that the trend value differed materially from the actual value of cost of production except during the year 2005-06 to 2014-15. The original values of cost of production were lower than the trend values from 2008-09 to 2011-12. It may be pointed out that the lower cost of production incurred in the pharmaceutical industry. In the remaining year, the original values of cost of production were higher than the trend values. The calculated  $\chi^2$  value comes to 37521.15 which is higher than the table value of 16.919 at 5 per cent level of significance. It indicates that the difference between the actual and trend values of cost of production in different years were significant.

### 4. TRENDS IN RAW MATERIAL EXPENSES

Raw material is a very important factor of production. It includes physical commodities used to manufacture the final end product. It is the starting point from which the first operations start. It is the first and most important element of cost. According to the Indian Association of Materials Management, 64 paise in a rupee are spent on raw materials by Indian industries. Materials are the principal substances used in production, and are transferred into finished goods. Raw material consumed consists of the amount spent on various types of raw materials and components consumed during the course of manufacturing. Further, the figure has been arrived at by adding the cost of opening stock of raw materials to the purchase of raw material and deducting the cost of closing stock.

**Ho: There is no significant difference between actual values and trend values of raw material expenses among different years.**

The trends in raw material expenses of select pharmaceutical companies for the periods from 2005-06 to 2014-15 have been shown in Table 1. It depicts that the highest mean value of raw material expenses was Rs.2795.02 crores in CL which accounts of total industrial raw material expenses, followed by Rs.2245.69 crores in APL raw material expenses. The remaining raw material expenses of industry by LL was Rs.1858.50 crores, followed by DRLL with Rs.1724.46 crores, CHL with Rs.960.57 crores, GPL with Rs.879.01 crores, ILL with Rs.786.79 crores, WL with Rs.756.20 crores, TPL with Rs.658.43 crores and DLL with Rs.653.20. On the basis of average raw material expenses, the maximum contribution together by CL, APL and LL of industrial raw material expenses.

The value of raw material expenses of pharmaceutical industry during the study period from 2005-06 to 2014-15 has been shown in Table 1. The raw material expenses of pharmaceutical industry have marked an increasing trend throughout the period. In the year 2005-06, raw material expenses were Rs.6324.91 crores which crossed the mark of Rs.9028.15 crores during the year 2007-08 and reached Rs.22137.11 crores in the year 2014-15, marking an increase of 350.00 indices. The mean value of raw material expenses was Rs.13317.86 crores. The SD and CV values were 5382.92 and 40.42 per cent respectively which indicates more fluctuation in the raw material expenses of pharmaceutical industry during the study period. The CAGR value was 13.35 per cent.

The actual and trend value of raw material expenses comparison shown in the Table 1 depicts that the trend value differed from the actual value of raw material. The original values were lower than the trend values from 2008-09 to 2011-12. It indicates during the years the lower raw material expenses were incurred. In the remaining years, the original values were higher than the trend values. The calculated  $\chi^2$  value comes to 19154.56 which is higher than the table value of 16.919 at 5 per cent level. It indicates that the differences between actual value and trend value of raw material expenses in different years were significant.

### 5. TRENDS IN WAGES AND SALARIES EXPENSES

Wages and salaries as a means of providing income for the workers become the only sources of income which determines their economic survival in the society; so they try to force the employers to follow a method of payment which entitles them to higher wages. High wages and salaries are given to workers to become efficient and produce more. Increased production will result in lower cost per unit. Thus, cost of production per unit will come down. The amount paid to employees by way of salaries, wages, bonus, gratuities, and contribution towards the provident funds, superannuation funds, family pension scheme, staff welfare expenses, Voluntary Retirement Service (VRS) compensation funds have been classified as 'Wages and Salaries' in the present study.

**Ho: There is no significant difference between actual value and trend value of wages and salaries expenses among different years.**

The trends in wages and salaries expenses of select pharmaceutical companies for the periods from 2005-06 to 2014-15 have been shown in Table 1. It depicts that the highest mean value of wages and salaries expenses was Rs.730.90 crores in DRLL which accounts of total industrial wages and salaries expenses, followed by Rs.603.62 crores in CL wages and salaries expenses. The remaining wages and salaries expenses of industry by LL was Rs.493.27 crores, followed by CHL with Rs.327.45 crores, APL with Rs.302.02 crores, ILL with Rs.269.62 crores, GPL with Rs.259.62 crores, TPL with Rs.244.42 crores, WL with Rs.204.65 crores and DLL with Rs.117.28. On the basis of average wages and salaries expenses, the maximum contribution together by DRLL, CL and LL of industrial wages and salaries expenses.

<sup>2</sup> Sundharam K.P.M and Sundharam E.N., "Business Economies", (Sultan Chand & Sons: New delhi), Fourth Edition 2002, pp. 284-289.

The value of wages and salaries expenses of pharmaceutical industry for the period of study from 2005-06 to 2014-15 has been shown in Table 1. The wages and salaries expense of pharmaceutical industry have marked an increasing trend from 2004-05 and 2005-06 which reached the mark of 123.54 indices. In the year 2007-08 to 2012-13, the wages and salaries expenses declined to Rs.5311.89 crores and again increased to Rs.7557.71 crores in 2014-15, marking an increase of 685.44 indices from 2005-06 to 2014-15. The mean value of wages and salaries expenses was Rs.3552.84 crores. The SD and CV values were 2265.33 and 63.76 per cent which indicates the fluctuation found during the study period. The CAGR value was 21.23 per cent.

The comparison of actual value and trend value of wages and salaries expenses is depicted in the Table 1 which shows that the trend values differed materially from the actual wages and salaries expenses except the years from 2005-06 to 2014-15. The actual value of wages and salaries expenses is lower than the trend value during the year 2007-08 to 2012-13. The actual value is higher than the trend value in 2005-06, 2006-07, 2013-14 and 2014-15. It may be pointed out that the higher wages and salaries expenses were incurred the pharmaceutical industry. The calculated  $\chi^2$  value is 12253.71 which is higher than the table value of 16.919 at 5 per cent level of significance. It indicates that the difference between actual and trend values of wages and salaries in different years were significant.

#### 6. TRENDS IN MANUFACTURING EXPENSES

The manufacturing expenses include freight inwards and transportation, packaging materials, job work/contract/processing charges, stores consumed, repairs on plant and machinery/buildings, technical fees paid, license fee/operation charges and other operating expenses have been grouped as manufacturing expenses for the purpose of the study.

**Ho: There is no significant difference between actual value and trend value of manufacturing expenses among different years.**

The trends in manufacturing expenses of select pharmaceutical companies for the periods from 2005-06 to 2014-15 have been presented in Table 1. It depicts that the highest mean value of manufacturing expenses was Rs.453.04 crores in CL which accounts of total industrial manufacturing expenses, followed by Rs.447.31 crores in DRLL manufacturing expenses. The remaining manufacturing expenses of industry by LL was Rs.318.62 crores, followed by APL with Rs.224.76 crores, CHL with Rs.152.37 crores, ILL with Rs.83.69 crores, TPL with Rs.67.09 crores, GPL with Rs.66.54 crores, WL with Rs.52.11 crores and DLL with Rs.46.04. On the basis of average wages and salaries expenses, the maximum contribution together by CL, DRLL and LL of industrial wages and salaries expenses.

The manufacturing expenses of pharmaceutical industry for the period of study from 2005-06 to 2014-15 have been shown in Table 1. The manufacturing expenses marked an increasing trend throughout the study period. In the year 2005-06, the manufacturing expenses were Rs.784.85 crores which increased to Rs.3630.36 crores in 2006-07, marking an increase of 462.55 per cent in the indices. The mean value was Rs.1911.56 crores. The CAGR value was 16.55 per cent. The SD and CV values were 884.33 and 46.26 per cent which shows more fluctuation in the manufacturing expenses of Pharmaceutical industry during the period under study. The comparison of actual and trend value of manufacturing expenses of pharmaceutical industry has been shown in Table 1 which depicts that the trend value differed materially from the actual manufacturing expenses. The original values of manufacturing expenses were lower than the trend values from 2009-10 to 2012-13. In the remaining years the original values were higher than the trend values. It may be pointed out that higher manufacturing expenses were incurred the pharmaceutical industry. The  $\chi^2$  value comes to 3405.20 which is found to be statistically significant. It indicates that the differences between the actual and trend of manufacturing expenses in different years were significant.

#### 7. TRENDS IN POWER AND FUEL EXPENSES

Electricity expenses in pharmaceutical industry play a vital role. For the purpose of analysis any expenses related to electricity and for other fuel have been considered under this study.

**Ho: There is no significant difference between the actual and trend value of power and fuel expenses among different years.**

The trends in power and fuel expenses of select pharmaceutical companies for the periods from 2005-06 to 2014-15 have been presented in Table 1. It exhibits that the highest mean value of power and fuel expenses was Rs.195.78 crores in LL which accounts of total industrial power and fuel expenses, followed by Rs.190.98 crores in APL power and fuel expenses. The remaining power and fuel expense of industry by DRLL was Rs.155.19 crores, followed by CL with Rs.140.45 crores, DLL with Rs.77.42 crores, CHL with Rs.74.47 crores, ILL with Rs.69.47 crores, WL with Rs.48.70 crores, TPL with Rs.42.39 crores and GPL with Rs.23.68. On the basis of average power and fuel expenses, the maximum contribution together by LL, APL and DRLL of industrial power and fuel expenses.

The power and fuel expenses of pharmaceutical industry for the period of study from 2005-06 to 2014-15 have been shown in Table 1. The power and fuel expenses of pharmaceutical industry have marked an increasing trend throughout the period. In the year 2005-06, the power and fuel expenses were Rs.387.40 crores which increased to Rs.1809.80 crores marking an increase of 467.17 per cent of the indices. The mean value of power and fuel of pharmaceutical industry during the study period was Rs.1016.52. The SD and CV were 538.07 and 52.93 per cent respectively which indicates that there was fluctuation found during the study period. The CAGR value was 16.67 per cent.

The actual and trend values of power and fuel expenses comparison are depicted in Table 1 which shows that the trend value differed materially from the actual value of power and fuel expenses except in the year 2007-08. The original values of power and fuel expenses were lower than the trend values from 2007-08 to 2010-11. In the remaining years, the original values of power and fuel expenses were higher than the trend values. The calculated  $\chi^2$  value comes to 2441.57 which is found to be statistically significant. It indicates that the differences between actual and trend values of power and fuel expenses in different years were significant.

#### 8. TRENDS IN SELLING AND ADMINISTRATIVE EXPENSES

Selling and distribution expenses include the amount spent during the course of sales, boosting the sales and delivery of goods sold has been termed as selling and distribution expenses. The expenses relating to advertisement, commission to selling agents, marketing expenses, service charges, delivery charges, freight and transportation etc. are covered under the above head. The expenses relating to office and general administration of companies like the director's remuneration, legal expenses, rent, rates, taxes and depreciation of office building and equipment have been grouped as administrative expenses.

**Ho: There is no significant difference between actual value and trend value of selling and administrative expenses among different years.**

The trends in selling and administrative expenses of select pharmaceutical companies for the periods from 2005-06 to 2014-15 have been presented in Table 1. It exhibits that the highest mean value of selling and administrative expenses was Rs.1231.18 crores in DRLL which accounts of total industrial selling and administrative expenses, followed by Rs.856.20 crores in CL selling and administrative expenses. The remaining selling and administrative expense of industry by LL was Rs.713.03 crores, followed by CHL with Rs.560.87 crores, TPL with Rs.364.57 crores, ILL with Rs.327.08 crores, GPL with Rs.249.68 crores, APL with Rs.235.79 crores, WL with Rs.207.66 crores and DLL with Rs.75.57. On the basis of average selling and administrative expenses, the maximum contribution together by DRLL, CL and LL of industrial selling and administrative expenses.

The selling and administrative expenses of pharmaceutical industry during the study period from 2005-06 to 2014-15 have been shown in Table 1. The selling and administrative expenses of pharmaceutical industry marked an increasing trend throughout the period. In the year 2005-06 the selling and administrative expenses were Rs.2137.25 crores which increased to Rs.8093.15 crores in 2014-15, marking an increase of 378.67 per cent of indices. The mean value was Rs.4821.63 crores. The SD and CV values were 1965.48 and 40.76 per cent respectively which indicates that fluctuation was found in the selling and administrative expenses of pharmaceutical industry during the study period. The CAGR value was 14.24 per cent.

The actual and trend value of selling and administrative expenses comparison is depicted in the Table 1 which shows that the trend value differed materially from the actual value of selling and administrative expenses. The original values lower than the trend values from 2009-10 to 2011-12. It indicates that the lower selling and administrative expenses growth were found in pharmaceutical industry. In the remaining years, the original values were higher than the trend values. The calculated  $\chi^2$  value comes to 7034.15 which is found to be statistically significant. It indicates that the differences between actual value and trend value of selling and administrative expenses in different years were significant.

#### 9. TRENDS IN MISCELLANEOUS EXPENSES

The miscellaneous expenses include donations, loss on sale of assets, loss on sale of investments, loss on revaluation of investment, bad debts, expenses amortized, provision on doubtful loan/deposit/advances and other provision for contingency have been considered under this head for the purpose of the study.

**Ho: There is no significant difference between actual value and trend value of miscellaneous expenses among different years.**

The trends in miscellaneous expenses of select pharmaceutical companies for the periods from 2005-06 to 2014-15 have been presented in Table 1. It exhibits that the highest mean value of miscellaneous expenses was Rs.340.99 crores in WL which accounts of total industrial miscellaneous expenses, followed by Rs.196.69 crores in CL miscellaneous expenses. The remaining miscellaneous expense of industry by DRLL was Rs.190.11 crores, followed by APL with Rs.115.49 crores, CHL with Rs.104.28 crores, GPL with Rs.100.49 crores, ILL with Rs.87.15 crores, TPL with Rs.78.16 crores, ILL with Rs.39.10 crores and DLL with Rs.21.46. On the basis of average miscellaneous expenses, the maximum contribution together by WL, CL and DRLL of industrial miscellaneous expenses.

The miscellaneous expenses of pharmaceutical industry during the study period from 2005-06 to 2014-15 have been shown in Table 1. The miscellaneous expenses of pharmaceutical industry have marked a decreasing trend during the year 2005-06, 2006-07, 2007-08, 2010-11, 2012-13, 2013-14 and 2014-15 then slightly increase in 2008-09, 2009-10 and 2011-12 finally, it shows a fluctuating trend throughout the study period 2005-06 to 2014-15. In the year 2005-06, the miscellaneous expense were Rs.483.25 crores which increased to Rs.1464.61 crores in 2014-15. In 2007-08, 2010-11, 2012-13 and 2014-15 indices value showed decreasing and finally an index of the study period was 303.08 per cent. The mean value was Rs.1273.91 crores. The SD and CV values were 611.10 crores and 47.97 respectively which indicates that fluctuation was found in the miscellaneous expenses of pharmaceutical industry during the study period. The CAGR value was 11.73 per cent.

The actual and trend value of miscellaneous expenses comparison is depicted in the Table 1 which shows that the trend value differed materially from the actual value of miscellaneous expenses except in 2011-12. The original values were lower than the trend values in the year 2005-06, 2006-07, 2007-08, 2010-11, 2012-13, 2013-14 and 2014-15. In the remaining years, the original values were higher than the trend values. The calculated  $\chi^2$  value comes to 887.55 which is higher than the table value of 16.919 at 5 per cent significant level. It indicates that the differences between actual value and trend value of miscellaneous expenses in different years were significant.

The Table 2 explains after going through the above discussion on production and sales of pharmaceutical industry in India, it is found that there has been an increasing trend throughout the study period except in 2007-08 and 2009-10. The cost structure analysis reveals a significant increasing trend during the study period. The cost structure of pharmaceutical industry, the proportion of raw material cost with 51.43 per cent got the first place followed by wages and salaries with 13.72 per cent, manufacturing expenses with 7.38 per cent, power and fuel with 3.93 per cent, selling and administrative expenses with 18.62 per cent and miscellaneous expenses with 4.92 per cent during the study period.

## FINDINGS AND SUGGESTIONS

1. The production of pharmaceutical industry has marked an increasing trend throughout the period. The mean value of production of pharmaceutical industry during the study period was Rs.33143.97 crores. The compound annual growth rate of production was 15.85 per cent. The CV value of actual value of production was 32.88 per cent which indicates more fluctuation in the production of pharmaceutical industry during study period.
2. The actual sales of pharmaceutical industry have marked an increasing trend throughout the period. The mean value of sales during the study period was Rs.32562.73. The SD and CV value were 15338.03 and 47.10 per cent which indicate more fluctuation in the sales of pharmaceutical industry during the study period. The CAGR values were registered at 2.93 per cent.
3. The cost of production of pharmaceutical industry has marked an increasing trend throughout the period. The mean value of cost of production of pharmaceutical industry during the study period was Rs.20740.49 crores. The SD and CV values of cost of production were 9450.06 and 45.56 per cent respectively during the study period. The CAGR value was marked 15.10 per cent.
4. The raw material expenses of pharmaceutical industry have marked an increasing trend throughout the period. The mean value of raw material expenses was Rs.13317.86 crores. The SD and CV values were 5382.92 and 40.42 per cent respectively which indicates more fluctuation in the raw material expenses of pharmaceutical industry during the study period. The CAGR value was 13.35 per cent.
5. The wages and salaries expense of pharmaceutical industry have marked an increasing trend from 2004-05 and 2005-06 which reached the mark of 123.54 indices. The mean value of wages and salaries expenses was Rs.3552.84 crores. The SD and CV values were 2265.33 and 63.76 per cent which indicates the fluctuation found during the study period. The CAGR value was 21.23 per cent.
6. The manufacturing expenses of pharmaceutical industry have increasing trend throughout the study period. The mean value was Rs.1911.56 crores. The CAGR value was 16.55 per cent. The SD and CV values were 884.33 and 46.26 per cent which shows more fluctuation in the manufacturing expenses of Pharmaceutical industry during the period under study.
7. The power and fuel expenses of pharmaceutical industry have marked an increasing trend throughout the period. The mean value of power and fuel of pharmaceutical industry during the study period was Rs.1016.52. The SD and CV were 538.07 and 52.93 per cent respectively which indicates that there was fluctuation found during the study period. The CAGR value was 16.67 per cent.
8. The selling and administrative expenses of pharmaceutical industry marked an increasing trend throughout the period. The mean value was Rs.4821.63 crores. The SD and CV values were 1965.48 and 40.76 per cent respectively which indicates that fluctuation was found in the selling and administrative expenses of pharmaceutical industry during the study period. The CAGR value was 14.24 per cent.
9. The miscellaneous expenses of pharmaceutical industry have marked a decreasing trend during the year 2005-06, 2006-07, 2007-08, 2010-11, 2012-13, 2013-14 and 2014-15 then slightly increase in 2008-09, 2009-10 and 2011-12 finally, it shows a fluctuating trend throughout the study period 2005-06 to 2014-15. The mean value was Rs.1273.91 crores. The SD and CV values were 611.10 crores and 47.97 respectively which indicates that fluctuation was found in the miscellaneous expenses of pharmaceutical industry during the study period. The CAGR value was 11.73 per cent.
10. The cost structure analysis reveals a significant increasing trend during the study period. The cost structure of pharmaceutical industry, the proportion of raw material cost with 51.43 per cent got the first place followed by wages and salaries with 13.72 per cent, manufacturing expenses with 7.38 per cent, power and fuel with 3.93 per cent, selling and administrative expenses with 18.62 per cent and miscellaneous expenses with 4.92 per cent during the study period.

## CONCLUSION

After going through the above discussion on production and sales of pharmaceutical industry in India, it is found that there has been an increasing trend throughout the study period except in 2007-08 and 2009-10. The cost structure analysis also reveals a significant increasing trend during the study period. To Find out the difference between actual and trend values of production, sales and respective expenses. Chi-square test has been applied. The results of the analysis reveal that computed chi-square value is greater than the critical value. Hence, the hypothesis is rejected. It is concluded that "There is significant difference between actual and trend values of production, sales and respective expenses."

## REFERENCES

1. Amita S.Kantawala (2001-02) "Financial performance of Non Banking Finance companies in India", The Indian Economic Journal 49(1), July – Sep 2001-02., pp.88-92.
2. Kar.N.C and sahuo,sk,(2001) "Working capital management. A comparison of Bajaj Auto Ltd and Telco" JIMS 8m, Jan-March2001, pp.20-24.
3. Padmaja Manoharan (2002) "An Analytical study in Profitability of cement industry in India 2002".
4. Shanmugasundaram and Ratnam (2002) "Measures for sustaining profitability of spinning mills", The South India Textile Research Association, Coimbatore, Vol.47, No.5, Sep 2002, pp.1-36.
5. Nand Kishore Sharma (2002) Financial appraisal of cement Industry in India, The management Accountant, August 2002, pp. 622-625.
6. Sankaran (2002) "Financial performance evaluation of pharmaceutical companies in India", Finance India, vol.XVI, No.3, Sep 2002, pp.1059-1061.
7. Mansur Mulia.A(2002) Use of 'Z' Score Analysis for Evaluation of Financial Health of Textile Mills – A case study", *Abhigyan. 19(4), January – March 2002, pp.37-41.*

8. Prasad Sangameshwaran (2002) 'Cementing Brand Equity', *Indian Cement Review*, October. 2002. p. 5-6.
9. Jack Glen, Kevin Lee and Ajit Singh (2002) Corporate profitability and the dynamics of competition in emerging markets – A time series analysis, ESRC Center for Business Research, University of Cambridge, Working Paper No.248.
10. Tze-wei Fu, Mei-Chiu ke and Yen-Sheng Huang (2002) Capital Growth, Financing source and profitability of small Business: Evidence from Taiwan Small Enterprises, *Small Business Economics*, Vol.18, No.4, pp.257-267.
11. Kaen and Baumann (2003) "Firm Size, Employees and profitability in US Manufacturing Industries", <http://ssrn.com/sol.papers.cf>, abstracted=899615, Accessed on July 10, 2006.
12. Bardia (2004) Liquidity management- A case study of steel Authority of India, *Finance India* vol. XVI, No 3,2004, pp.463-467.
13. A.V.Dharmadrishnan (2004) 'Need thrust after a pause', *The Hindu Survey of Indian Industry*. 2004. pp.209.
14. Arthur S. Leahy (2004) The determinants of profitability in the Liquor Industry, *Briefing Notes in Economics*, No.61, pp.1-6.
15. Patel (2004) "Profit and Profitability (A Case study of Colour-Chem Limited)", *ACCST Research Journal*, Vol.ii, No.2, pp.89-95.
16. Marcos A. M. Lima and Marcelo Resend (2004) Profit margins and business cycles in the Brazilian industry: a panel data study, *Taylor and Francis Journal in Applied Economics*, pp.923-930.
17. Sueyoshi, Toshiyuki (2005) Financial Ratio Analysis of the Electric power Industry, *Asia –pacific Journal of operational Research*, vol. 22, Issue 3, September 2005,pp. 349-376.
18. Alovzat musulmov(2005) The Financial and operating performance of privatized companies in Turkish cement Industry, *METU studies in Development*, Vol.32, No.1,2005,pp.59-100.
19. Hamasalakshmi and Manickam (2005) "Financial performance analysis of selected software companies", *Finance India*, Vol.XIX, No.3, Sep 2005, pp.935.
20. Dr. Sanjay J.Bhayani (2006) "Financial Performance in paper Industry – A case study", *The Management Accountant*, 30(5)-May 2006,pp.327-336.
21. Agjomirgianakis, Voulgaris and Papadogonas (2006) Financial factors affecting profitability and employment growth: the case of Greek manufacturing, *International Journal of Financial Service Management*, Vol.1 Nos.2/3, pp.232-242.
22. Sam Luther (2007) Liquidity, Risk and Profitability analysis a case study of madras cements ltd, *The management Accountant*, Vol.42, No.10. October-2007. Pp.784-789.
23. Dr. B. Ramachandra Reddy and Dr. B. Yuvaraja Reddy (2007) A case study, *The management Accountant* Vol.35, No.5, May 1971. Pp. 377-378.
24. Kasturi Rangan, S. (2008) "Determinants of Profits and Banks - Studying their correlation". *The Indian Banker*, Vol.III, August 2008, pp.52-54.
25. Victoria Bellou, Andronikidis, (2009) Examining Organizational climate in Greek Hotels *Journal of contemporary Hospitality management*, 2009, vol.21, issue: 3,pp.294-30.
26. Ray Sarbapriya and Mihir Kumar Pal (2010) "Trade Liberalization and Industrial Performance of Cement Industry in India, *International Journal of Productivity and Quality Management*, Vol6, No.3. 210, pp.332-353.
27. Chandrakumarmangalam, P Govindasamy (2010) An Analysis and its impact on Profitability with Reference to Selected Cement Companies in India, *European Journal Of Economics, Finance and Administrative Sciences*, No.27, pp.53-57.
28. Glocker, Daniela (2011) The Effect of Student Aid on the Duration of Study *Economics of Education Review*, *Journal Articles; Reports - Research v30 n1 p177-190 Feb 2011*
29. Rai Sandeep Kumar and Dwivdei Shailesh K, (2011) Impact of Global recession on the Indian Cement Industry with special reference to ACC Limited, *Journal of Managerial Economics*, Year 2011.
30. N. Venkata Ramana (2012) financial performance and predicting the risk of bankruptcy: a case of selected cement companies in India *international journal of public administration and management research (IJPAMR)*, vol. 1, no. 1, October 2012, 40-56.
31. Sachin Mittal, (2012) Indian cement industry is the second largest cement industry in the world. *International Conference on Humanities, Economics and Geography (ICHEG'2012)* March 17-18, 2012.
32. Sarangarajan (2013) Financial Ratio Analysis of the Electric power Industry, *Asia –pacific Journal of operational Research*, vol. 22, Issue 3, September 2013, pp. 349-376.
33. Dr.P.Krishna Kumar, (2013) The study was designed to investigate the progress of Indian cements Published by European Centre for Research, Training and Development, *UK British Journal of Marketing Studies* Vol.1, No. 1, March 2013, pp.1-15.
34. Acharekar Sachin Vilas Vijaya (2013) *International Refereed Journal of Engineering and Science (IRJES)* ISSN (Online) 2319 - 183X, (Print) 2319-1821 Volume 2, Issue 8 (August 2013), PP.12 -17.

**ANNEXURE**

**TABLE 1: ACTUAL VALUE AND TREND VALUE OF PRODUCTION, SALES, COST PRODUCTION, EXPENSES OF RAW MATERIAL, WAGES & SALARIES, MANUFACTURING, POWER & FUEL, SELLING & ADMINISTRATIVE AND MISCELLANEOUS OF PHARMACEUTICAL INDUSTRY (Values Rs. In Crores)**

Year	Production	Indices	Trend Values (Yc)	Sales	Indices	Trend Values (Yc)	Cost of Production	Indices	Trend Values (Yc)	Raw Material Expenses	Indices	Trend Values (Yc)	
2005-06	13627.20	100.00	10328.93	13367.30	100.00	10143.80	9060.86	100.00	6919.69	6324.91	100.00	5404.90	
2006-07	18111.82	132.91	15398.94	17847.51	133.52	15125.79	11231.57	123.96	9990.98	7743.25	122.42	7163.34	
2007-08	20103.29	147.52	20468.94	19688.22	147.29	20107.77	13072.16	144.27	13062.27	9028.15	142.74	8921.77	
2008-09	23566.43	172.94	25538.95	23219.64	173.70	25089.75	15061.36	166.22	16133.56	10031.52	158.60	10680.21	
2009-10	26910.83	197.48	30608.96	26200.27	196.00	30071.73	16643.83	183.69	19204.85	11399.76	180.24	12438.64	
2010-11	32407.64	237.82	35678.97	31936.45	238.91	35053.72	20564.37	226.96	22276.13	13282.24	210.00	14197.08	
2011-12	37904.47	278.15	40748.98	37457.60	280.22	40035.70	23832.43	263.03	25347.42	15088.35	238.55	15955.51	
2012-13	46155.98	338.70	45818.99	45151.22	337.77	45017.68	28727.26	317.05	28418.71	18440.35	291.55	17713.95	
2013-14	53331.74	391.36	50889.00	52665.55	393.99	49999.67	32238.76	355.80	31490.00	19702.95	311.51	19472.38	
2014-15	59320.27	435.31	55959.01	58093.50	434.59	54981.65	36972.29	408.04	34561.28	22137.11	350.00	21230.81	
Mean	33143.97		32562.73	32562.73		20740.49	20740.49		13317.86	13317.86		13317.86	
SD	15609.02		15338.03	15338.03		9450.06	9450.06		37521.15	37521.15		5382.92	
CV (%)	32.88		47.1	47.1		45.56	45.56		40.42	40.42		40.42	
CAGR (%)	15.85		2.93	2.93		15.1	15.1		13.35	13.35		13.35	
		Critical Value of X <sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level			Critical Value of X <sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level			Critical Value of X <sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level			Critical Value of X <sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level		Critical Value of X <sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level
		Result : H <sub>0</sub> is Rejected			Result : H <sub>0</sub> is Rejected			Result : H <sub>0</sub> is Rejected			Result : H <sub>0</sub> is Rejected		Result : H <sub>0</sub> is Rejected

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Year	Wages and Salaries Expenses	Indices	Trend Values (Yc)	Manufacturing Expenses	Indices	Trend Values (Yc)	Power & Fuel Expenses	Indices	Trend Values (Yc)	Selling & Administrative Expenses	Indices	Trend Values (Yc)	Miscellaneous Expenses	Indices	Trend Values (Yc)
2005-06	1102.60	100.00	283.89	784.85	100.00	647.56	387.40	100.00	236.01	2137.25	100.00	1936.35	483.25	100.00	747.09
2006-07	1362.16	123.54	1010.33	1079.72	137.57	928.45	479.75	123.84	409.46	2695.53	126.12	2577.53	583.54	120.75	864.17
2007-08	1635.19	148.30	1736.76	1234.81	157.33	1209.33	544.80	140.63	582.90	3429.41	160.46	3218.70	484.01	100.16	981.24
2008-09	1984.67	180.00	2463.19	1572.67	200.38	1490.22	649.82	167.74	756.35	3909.20	182.91	3859.87	1868.90	386.74	1098.31
2009-10	2389.15	216.68	3189.63	1615.08	205.78	1771.11	714.93	184.55	929.80	4214.76	197.20	4501.04	1944.59	402.40	1215.38
2010-11	3501.64	317.58	3916.06	1771.66	225.73	2052.00	1022.05	263.82	1103.24	4611.57	215.77	5142.21	972.35	201.21	1332.45
2011-12	4256.32	386.03	4642.49	2080.31	265.06	2332.89	1278.47	330.01	1276.69	5368.95	251.21	5783.38	2074.45	429.27	1449.52
2012-13	5311.89	481.76	5368.92	2316.55	295.16	2613.78	1620.51	418.30	1450.14	6432.62	300.98	6424.56	1349.60	279.28	1566.59
2013-14	6427.09	582.90	6095.36	3029.56	386.00	2894.67	1657.67	427.90	1623.58	7323.83	342.68	7065.73	1513.84	313.26	1683.66
2014-15	7557.71	685.44	6821.79	3630.36	462.55	3175.56	1809.80	467.17	1797.03	8093.15	378.67	7706.90	1464.61	303.08	1800.73
<b>Mean</b>	<b>3552.84</b>	<b>Computed X<sup>2</sup> Value = 12253.71</b>	<b>1911.56</b>	<b>Computed X<sup>2</sup> Value = 3405.20</b>	<b>1016.52</b>	<b>Computed X<sup>2</sup> Value = 2441.57</b>	<b>4821.63</b>	<b>Computed X<sup>2</sup> Value = 7034.15</b>	<b>1273.91</b>	<b>Computed X<sup>2</sup> Value = 887.55</b>					
<b>SD</b>	<b>2265.33</b>		<b>884.33</b>		<b>538.07</b>		<b>1965.48</b>		<b>611.1</b>						
<b>CV (%)</b>	<b>63.76</b>		<b>46.26</b>		<b>52.93</b>		<b>40.76</b>		<b>47.97</b>						
<b>CAGR (%)</b>	<b>21.23</b>	<b>Critical Value of X<sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level</b>	<b>16.55</b>	<b>Critical Value of X<sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level</b>	<b>16.67</b>	<b>Critical Value of X<sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level</b>	<b>14.24</b>	<b>Critical Value of X<sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level</b>	<b>11.73</b>	<b>Critical Value of X<sup>2</sup> with (n-1)=9, Degree of freedom is 16.919 at 5% Significant Level</b>					
		<b>Result : H<sub>0</sub> is Rejected</b>		<b>Result : H<sub>0</sub> is Rejected</b>		<b>Result : H<sub>0</sub> is Rejected</b>		<b>Result : H<sub>0</sub> is Rejected</b>		<b>Result : H<sub>0</sub> is Rejected</b>					

Sources: Annual Reports of the Respective units

TABLE 2: COST STRUCTURE OF PHARMACEUTICAL INDUSTRY (2005-06 to 2014-15)

S.No	Cost Structure	Average Values (Rs. In Crores)	Percentage as Total
1	Raw Material Expenses	13317.86	51.43
2	Wages & Salaries Expenses	3552.842	13.72
3	Manufacturing Expenses	1911.557	7.38
4	Power & Fuel Expenses	1016.52	3.93
5	Selling & Administrative Expenses	4821.627	18.62
6	Miscellaneous Expenses	1273.914	4.92
<b>Total</b>		<b>25894.32</b>	<b>100.00</b>

Sources: Computed

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