WORKING CAPITAL ANALYSIS OF INDIAN PHARMACEUTICAL INDUSTRY-A STUDY ON SELECTED COMPANIES

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***Abstract*— The Indian Pharmaceutical Industry currently heads the list among India's science based industries with wide ranging capabilities in the complex field of drug manufacture and technology. It holds the distinction of being a highly organized sector, and is estimated to be worth 36.7 billion (dollars). In terms of technology, quality and the range of medicines that are manufactured, it ranks very high among all the third world countries. But most of the pharmaceutical companies In India are facing liquidity problems because of improper management of working capital. In this context the present study attempts to qualify the impact of imprudent management of the working capital on the profitability of the pharmaceutical companies.**

***Keywords*—Working Capital, liquidity, Inventory, Profitability.**

I. INTRODUCTION

The Indian Pharmaceutical Industry currently heads the list among India's science based industries with wide ranging capabilities in the complex field of drug manufacture and technology. It holds the distinction of being a highly organized sector, and is estimated to be worth 36.7 billion (dollars). In terms of technology, quality and the range of medicines that are manufactured, it ranks very high among all the third world countries.

II. REVIEW OF LITERATURE

As the title of the thesis broadly deals with working capital management of the selected pharmaceutical units of India, the need arises to carry out literature review

- Joseph Jisha (2014)[5] closely examines the study of working capital management in Ashok Leyland and points out that the liquidity and profitability position of the company is not satisfactory, and needed to be strengthened in order to be able to meet its obligations in time. The author has not made efforts to know the changes in working capital of the company.
- Akoto Richard K., Vitor Dadson A. and Angmor Peter L. (2013)[6] closely study the relationship between working capital management policies and profitability of the thirteen listed manufacturing firms in Ghana. At the end of the study, a significantly negative relationship between profitability and accounts receivable days is found to exist. Profitability is significantly positively influenced by the firms cash conversion cycle (CCC), current assets ratio and current asset turnover. It is also suggested that managers can create value for the shareholders by creating incentives to reduce their accounts receivable to 30 days. The study does not showed the views of the executives regarding the management of working capital.

III. RESEARCH OBJECTIVES AND METHODOLOGY

The objectives of the study are

1. To study the working capital efficiency in 15 selected pharmaceutical companies.
2. To examine and asses the trends in the working capital working capital management in terms of size, growth, adequacy and efficiency and its impact on the profitability of the pharmaceutical companies.

Research Methodology

This item deals with the methods of selecting samples and collection of necessary statistics for the purpose of the present analysis.

IV. SELECTION OF THE SAMPLE

The sample for the purpose has been drawn from the Pharmaceutical stocks listed in BSE Healthcare Index on the basis of simple random sample .There are 70 stocks listed in BSE Health Care Index. Out of these 15 Pharmaceutical companies have

been selected. The total Market capitalization of these 15 companies works out to be 29.31% of the total market capitalization of all the pharmaceutical companies stocks listed in BSE Health Care. Details regarding sample units have been given in table.1 The total number of units included in the study are – 5 large, 5-medium, 5 small, making a total of 15 companies

Table No:1. Sample Pharmaceutical Companies.

S.NO	Name Of The Company	Year of Inc.	State	M.Cap(Cr)		
LARGE						
1	Cadila Healthcare Ltd	1952	Gujarat	45034.44		
2	Cipla Ltd/India	1935	Maharashtra	44795.12		
3	Piramal Enterprises Ltd	1988	Maharashtra	43107.99		
4	Dr Reddy's Laboratories Ltd	1984	Telangana	43078.76		
5	Aurobindo Pharma Ltd	1986	Telangana	35507.40	211523.71	
MEDIUM						
1	FDC Ltd	1936	Maharashtra	3539.77		
2	Granules India Ltd	1984	Telangana	3480.86		
3	Sequent Scientific Ltd	2003	Maharashtra	3041.83		
4	Unichem Laboratories Ltd	1944	Maharashtra	2495.01		
5	Suven Life Sciences Ltd	1989	Telangana	2301.90	14859.37	
SMALL						
1	Novartis India Ltd	1996	Maharashtra	1934.68		
2	Hikal Ltd.	1988	Karnataka	1730.32		
3	Aarti Drugs Ltd	1975	Maharashtra	1354.01		
4	Neuland Laboratories Ltd	1984	Telangana	1231.00		
5	Anuh Pharma Ltd	1960	Maharashtra	492.35	6742.36	
	Total M.C of Sample Companies				**233125.44**	
	Total Pharma Market Cap				**795381.33**	
	Sample Companies Total as % of Industry					**29.31%**

Source: BSE Health Care Index

V. SOURCES OF DATA

Data used for the purpose of the study has been collected from the Stock Exchange Directory published by the BSE every week. Much useful information has also been drawn from the economic times, capital market, journals published by CMIE and others. Information is also collected through a questionnaire for eliciting the opinions of the chief executives.

VI. PERIOD OF THE STUDY

The study extends over a period of 10 years from 2006-2007 to 2015-2016. A ten year period has been selected for the study so that the study would be meaningful in focusing the attention on the problems of working capital management in the selected Pharmaceutical companies chosen for the study.

VII. DATA ANALYSIS

Structure of Working capital

It is evident that working capital in selected pharmaceutical companies in India consisting of cash and bank balances, debtors, inventories, misc.current assets, constituted significant part of the total capital employed by the pharmaceutical companies. The composition of the working capital is analysed below.

Components of Working Capital

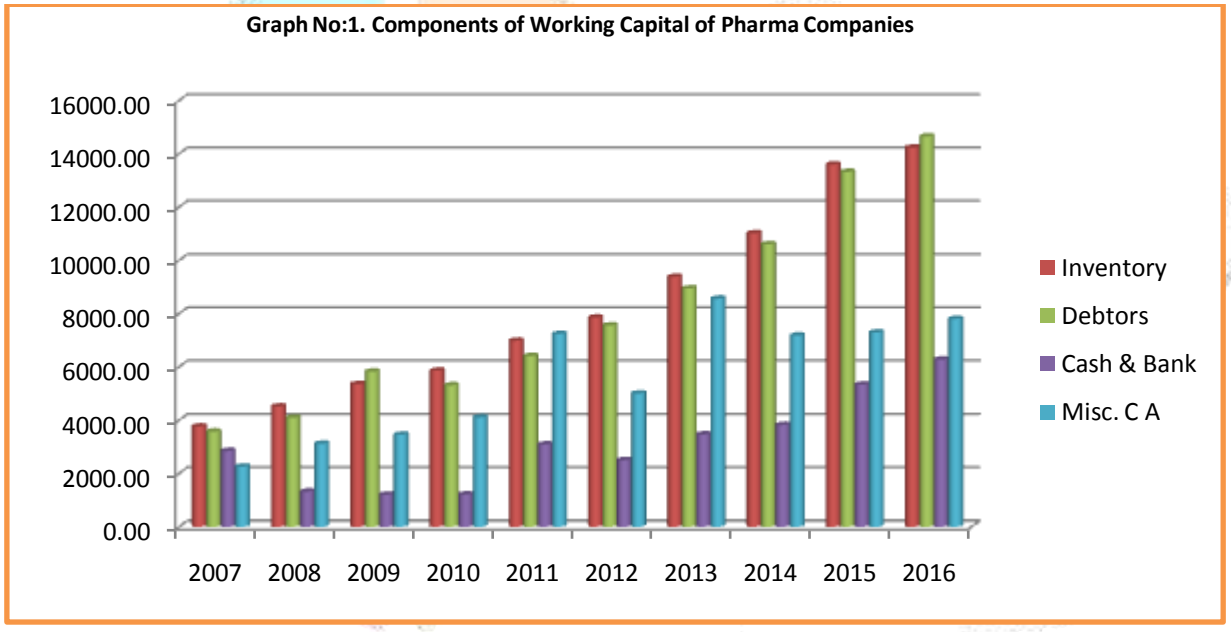
This section depicts the components of working capital and their growth analysis during the study period. First, the researcher presents absolute amounts of components of working capital, and later proportions of each component to current assets are presented.

Year Wise Analysis

Table No:2. Year wise total of current assets and its components for the period 2006 – 2016 of all the 15 sample companies

Year	Inventory	Debtors	Cash & Bank	Misc. C A	Current Assets
2007	3763.86	3575.68	2845.66	2256.57	12441.75
2008	4516.03	4097.28	1322.73	3121.19	13057.19
2009	5355.99	5825.96	1201.17	3458.62	15841.74
2010	5860.29	5309.39	1213.54	4105.99	16489.22
2011	6981.13	6407.60	3093.90	7235.67	23718.32
2012	7853.38	7555.91	2502.65	5003.23	23143.89
2013	9377.14	8946.89	3467.19	8561.45	30642.63
2014	11014.02	10608.15	3820.92	7179.51	33753.42
2015	13599.43	13320.73	5334.15	7297.10	41794.43
2016	14229.99	14648.57	6278.43	7806.50	45308.80
Total	82551.26	80296.16	31080.34	56025.83	256191.39

Source: Compiled and calculated data from financial reports



Source: Compiled and calculated data from financial reports.

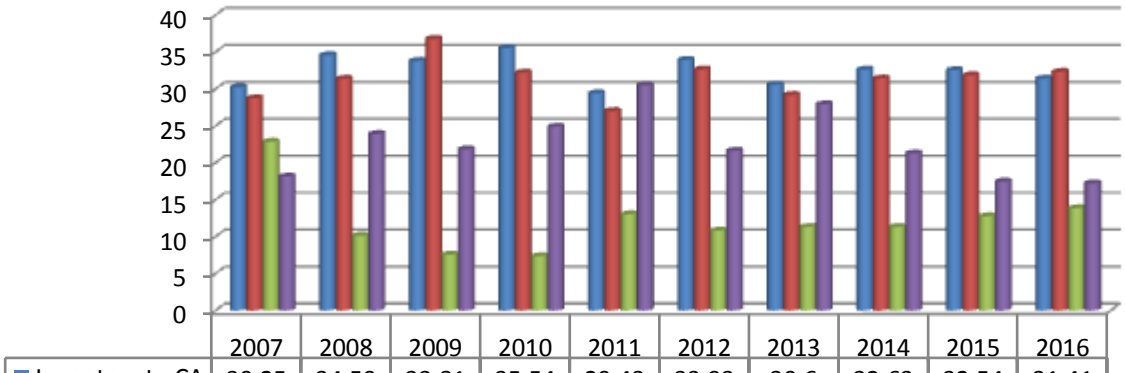
Above table and graph presents breakup of current assets during the study period (2007-2016). In this 10 year period total current assets increased from 12,441 crore to 45,308 crore, an increase of 264 percent from base year (2006-07). For the same period inventories increased by 228 percent, debtors enhanced by 310 percent, and cash & bank balance of sample companies improved by 120 percent. On the other hand miscellaneous current assets that include marketable securities, contingent assets and other liquid current assets increased by 246 percent.

Table No:3. Year wise components of current assets to currents assets ratio for the period 2006 – 2016 of all the 15 sample companies

Year	Inventory to CA	Debtors to CA	Cash to CA	Misc.CA to CA
2007	30.25	28.74	22.87	18.14
2008	34.59	31.38	10.13	23.90
2009	33.81	36.78	7.58	21.83
2010	35.54	32.20	7.36	24.90
2011	29.43	27.02	13.04	30.51
2012	33.93	32.65	10.81	21.62
2013	30.60	29.20	11.31	27.94
2014	32.63	31.43	11.32	21.27
2015	32.54	31.87	12.76	17.46
2016	31.41	32.33	13.86	17.23

Source: Compiled and calculated data from financial reports

Graph:2. Components of Current Assets to Current Assets Ratio



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Inventory to CA	30.25	34.59	33.81	35.54	29.43	33.93	30.6	32.63	32.54	31.41
Debtors to CA	28.74	31.38	36.78	32.2	27.02	32.65	29.2	31.43	31.87	32.33
Cash to CA	22.87	10.13	7.58	7.36	13.04	10.81	11.31	11.32	12.76	13.86
Misc.CA to CA	18.14	23.9	21.83	24.9	30.51	21.62	27.94	21.27	17.46	17.23

Source: Compiled and calculated data from financial reports.

An in-depth analysis of components of working capital reveals that on an average 30 percent of current assets are contributed by inventories and another 30 percent by debtors. Cash varied between seven percent and 23 percent and miscellaneous current assets hovered between 17 percent and 30 percent. It is observed that when companies had excess cash they invested in short term marketable securities to earn additional non revenue income. A constant maintenance of inventories shows pharmaceutical companies strategies to maintain optimum level of inventories to meet fluctuations in demand for products in the market. A stable debtors percentage resembles companies efficiency in accounts receivables management.

Category wise analysis of components of working capital

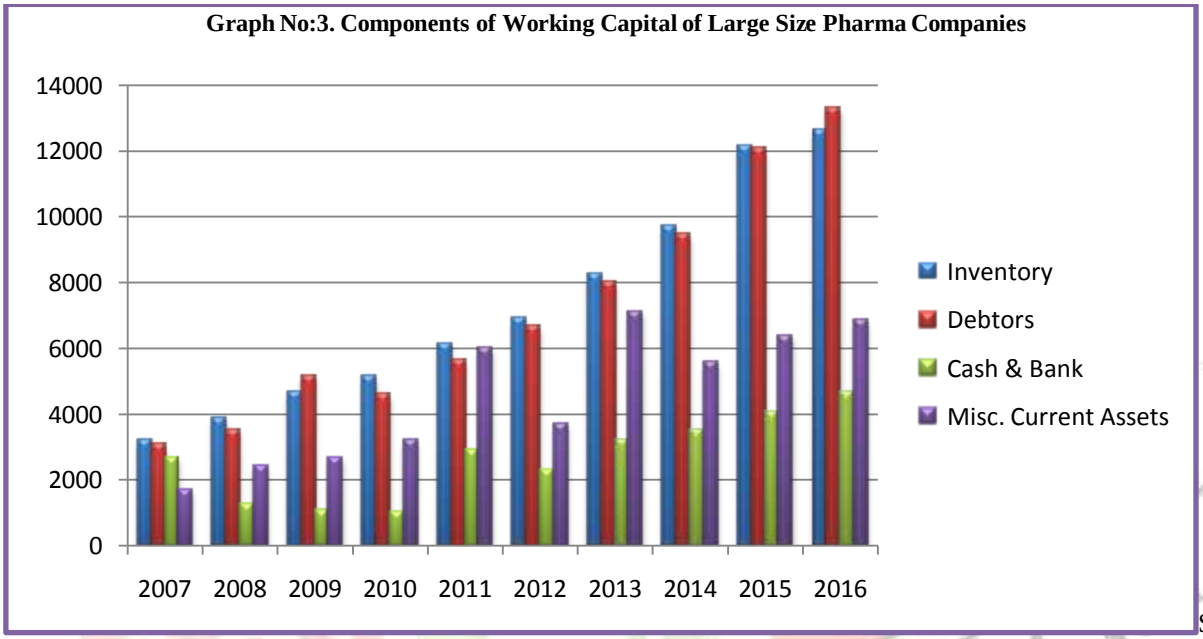
Category wise analysis of components of working capital is presented below. First the researcher discusses large pharmaceutical companies, followed by medium and small size pharma companies.

Table No:4. Year wise distribution of total current assets and its components of Large Capital Companies

Year	Inventory	Debtors	Cash & Bank	Misc. Current Assets	Current Assets
2007	3192.04	3076.07	2692.24	1709.24	10669.59
2008	3879.9	3524.89	1236.16	2440.32	11081.27
2009	4669.61	5148.55	1054.19	2692.59	13564.94
2010	5130.88	4582.49	1047.57	3219.61	13980.55
2011	6155.09	5622.84	2923.25	6023.31	20724.53
2012	6895.04	6653.29	2291.84	3703.23	19772.08
2013	8236.78	7998.89	3239.88	7132.73	26898.22
2014	9701.4	9459.1	3536.74	5568.21	29396.28
2015	12172.46	12064.75	4035.75	6399.62	36915.63
2016	12662.68	13304.48	4678.69	6858.98	39850.15

Source: Compiled and calculated data from financial reports

Graph No:3. Components of Working Capital of Large Size Pharma Companies



Source: Compiled and calculated data from financial reports

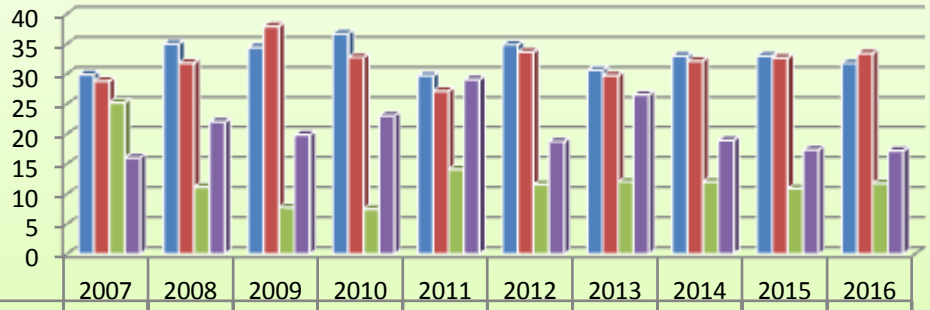
In large size pharma companies current assets grown from 10,669 crore to 39,850 crore an increase of 273 percent.

Table No:5 Components of Current Assets to Current Assets Ratio of Large Size Pharma Companies

Year	Inventory to CA	Debtors to CA	Cash & Bank to CA	Misc. Current Assets to CA
2007	29.92	28.83	25.23	16.02
2008	35.01	31.81	11.16	22.02
2009	34.42	37.95	7.77	19.85
2010	36.70	32.78	7.49	23.03
2011	29.70	27.13	14.11	29.06
2012	34.87	33.65	11.59	18.73
2013	30.62	29.74	12.04	26.52
2014	33.00	32.18	12.03	18.94
2015	32.97	32.68	10.93	17.34
2016	31.78	33.39	11.74	17.21

Source: Compiled and calculated data from financial reports

Graph No:4 Components of Current Assets to Current Assets Ratio of Large Size Pharma Companies



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Inventory to CA	29.92	35.01	34.42	36.7	29.7	34.87	30.62	33	32.97	31.78
Debtors to CA	28.83	31.81	37.95	32.78	27.13	33.65	29.74	32.18	32.68	33.39
Cash & Bank to CA	25.23	11.16	7.77	7.49	14.11	11.59	12.04	12.03	10.93	11.74
Misc. CA to CA	16.02	22.02	19.85	23.03	29.06	18.73	26.52	18.94	17.34	17.21

Source: Compiled and calculated data from financial reports

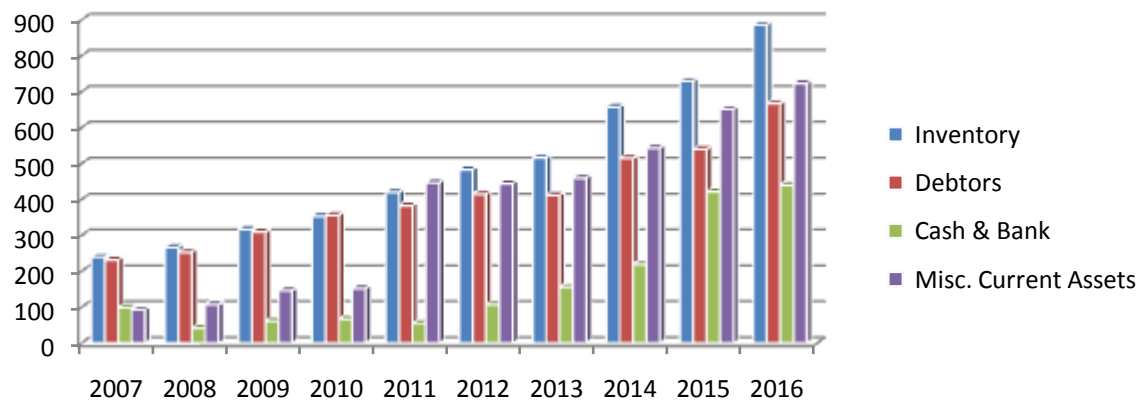
Above table presents the percentage of components of working capital to current assets. It is observed that in large size pharma companies' inventories contained 30 percent of current assets, along with inventories debtors were also around 30 percent of total current assets. Next to these two components is a miscellaneous current asset that consists another 20 percent. However, the cash and bank balances swing between 25 percent and 7 percent.

Table No:6 Year wise distribution of total current assets and its components of Medium size Companies

Year	Inventory	Debtors	Cash & Bank	Misc. Current Assets	Current Assets
2007	239.81	232.08	99.83	93.40	665.12
2008	267.39	253.40	42.67	107.75	671.2
2009	317.48	310.23	62.24	146.51	836.48
2010	353.87	356.29	67.72	152.63	930.54
2011	420.16	383.16	55.32	447.17	1305.81
2012	483.64	414.60	107.68	444.60	1450.54
2013	516.41	412.32	156.03	459.96	1544.72
2014	658.27	515.05	219.53	543.27	1936.12
2015	729.90	540.52	422.08	651.56	2344.02
2016	886.40	667.00	440.40	723.47	2717.27

Source: Compiled and calculated data from financial reports

Graph No:5. Components of Working Capital of Medium Size Pharma Companies



Source: Compiled and calculated data from financial reports

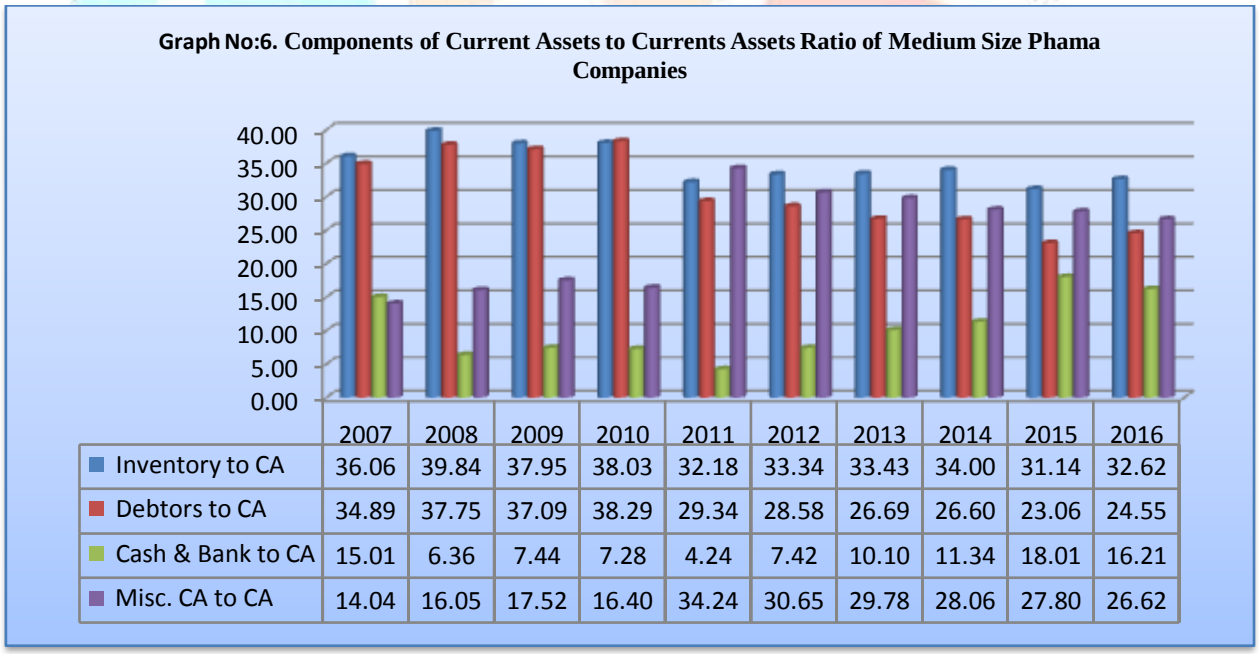
In case of medium size pharma companies current assets grown from 665 crore to 2,717 crore an increase of 308 percent. The study observed that inventories of medium size pharma companies grown by 269 percent, debtors increased by 187 percent, cash and bank balance surged by 340 percent and finally miscellaneous current assets climbed by 667 percent. These results clearly indicate that during the study period medium size pharma companies garnered high revenues and become more cash rich companies. They invested their excess cash in marketable securities. This will help them improve their bottom line.

Table No:7 Components of Current Assets to Currents Assets Ratio of Medium Size Phama Companies

Year	Inventory to CA	Debtors to CA	Cash & Bank to CA	Misc. CA to CA
2007	36.06	34.89	15.01	14.04
2008	39.84	37.75	6.36	16.05
2009	37.95	37.09	7.44	17.52
2010	38.03	38.29	7.28	16.40
2011	32.18	29.34	4.24	34.24
2012	33.34	28.58	7.42	30.65
2013	33.43	26.69	10.10	29.78
2014	34.00	26.60	11.34	28.06
2015	31.14	23.06	18.01	27.80
2016	32.62	24.55	16.21	26.62

Source: Compiled and calculated data from financial reports

Graph No:6. Components of Current Assets to Currents Assets Ratio of Medium Size Phama Companies

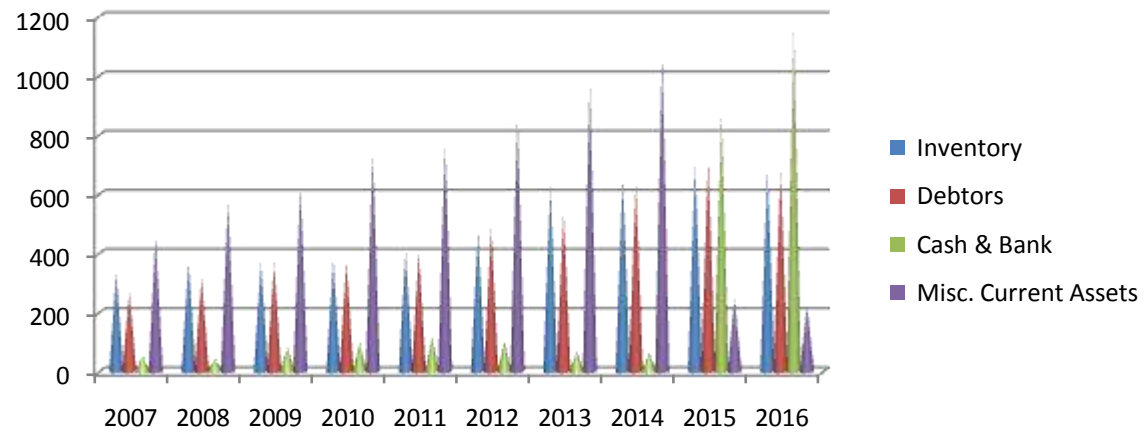


Source: Compiled and calculated data from financial reports

Table No:8 Year wise distribution of total current assets and its components of Small Size Companies

Year	Inventory	Debtors	Cash & Bank	Misc. Current Assets	Current Assets
2007	332.01	267.53	53.59	453.93	1107.04
2008	368.74	318.99	43.9	573.12	1304.72
2009	368.90	367.18	84.74	619.52	1440.32
2010	375.54	370.61	98.25	733.75	1578.13
2011	405.88	401.6	115.33	765.19	1687.98
2012	474.70	488.02	103.13	855.4	1921.27
2013	623.95	535.68	71.28	968.76	2199.69
2014	654.35	634.00	64.65	1068.03	2421.02
2015	697.07	715.46	876.32	245.92	2534.78
2016	680.91	677.09	1159.34	224.05	2741.38

Graph No:7. Components of Working Capital of Small Size Pharma Companies



Source: Compiled and calculated data from financial reports

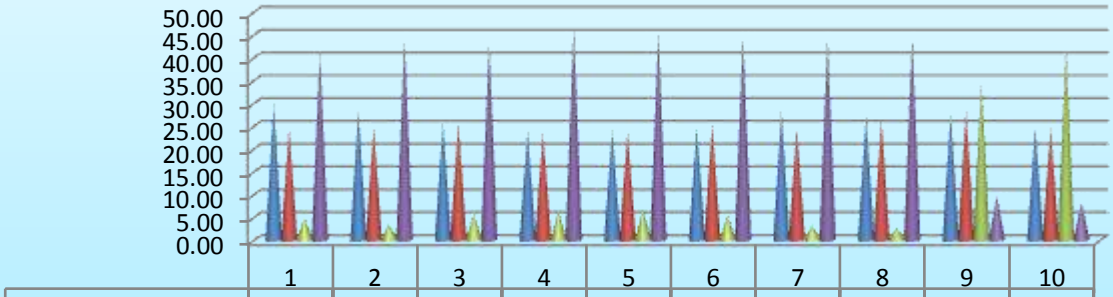
Similarly, in case of small pharma companies the growth in current assets was 147 percent from its base year. In case of small pharma companies the cash and bank balances grown phenomenally. On the other hand miscellaneous currents were volatile. This indicates that cash management was not appropriate in small size pharma companies.

Table No:9 Components of Current Assets to Currents Assets Ratio of Small Size Phama Companies

Year	Inventory to CA	Debtors to CA	Cash & Bank to CA	Misc. CA to CA
2007	29.99	24.17	4.84	41.00
2008	28.26	24.45	3.36	43.93
2009	25.61	25.49	5.88	43.01
2010	23.80	23.48	6.23	46.49
2011	24.05	23.79	6.83	45.33
2012	24.71	25.40	5.37	44.52
2013	28.37	24.35	3.24	44.04
2014	27.03	26.19	2.67	44.11
2015	27.50	28.23	34.57	9.70
2016	24.84	24.70	42.29	8.17

Source: Compiled and calculated data from financial reports

Graph No:8. Components Of Current Assets To Currents Assets Ratio Of Small Size Phama Companies



	1	2	3	4	5	6	7	8	9	10
Inventory to CA	29.99	28.26	25.61	23.80	24.05	24.71	28.37	27.03	27.50	24.84
Debtors to CA	24.17	24.45	25.49	23.48	23.79	25.40	24.35	26.19	28.23	24.70
Cash & Bank to CA	4.84	3.36	5.88	6.23	6.83	5.37	3.24	2.67	34.57	42.29
Misc. CA to CA	41.00	43.93	43.01	46.49	45.33	44.52	44.04	44.11	9.70	8.17

Source: Compiled and calculated data from financial reports

An overall analysis of components of working capital of all the three categories of pharma companies reveals that inventories contributed around 30 percent in large size pharma companies, an average of 35 percent in medium companies, and an average of 26 percent in small companies. Debtors contributed 32 percent, 28 percent and 24 percent respectively for large, medium, and small pharma companies.

Large pharma companies maintained high cash balance when compared to medium and small companies. The study found that from FY 2012-13 all the three categories of pharma companies maintained high cash balances. This high cash balances are results of increased sales revenues, lower operational costs and less investments in new plant and machinery. High inventory levels and debtors also reveals the enhancement of production capacities and aggressive credit sales strategies. During the study period it was mid-size pharma companies that grown exponentially

VIII.CONCLUSION

An overall analysis of components of working capital of all the three categories of pharmaceutical companies reveals that Large pharmaceutical companies maintained high cash balance when compared to medium and small companies. The study found that from FY 2012-13 all the three categories of pharmaceutical companies maintained high cash balances. This high cash balances are the results of increased sales revenues, lower operational costs and less investments in new plant and machinery. High inventory levels and debtors also reveal the enhancement of production capacities and aggressive credit sales strategies. During the study period it was mid-size pharmaceutical companies that grown exponentially.
An in-depth analysis of components of working capital reveals that on an average 30 percent of current assets are contributed by inventories and another 30 percent by debtors. Cash varied between 7 percent and 23 percent and miscellaneous current assets hovered between 17 percent and 30 percent. It is observed that when companies had excess cash they invested in short term marketable securities to earn additional non revenue income. A constant maintenance of inventories shows pharmaceutical companies strategies to maintain optimum level of inventories to meet fluctuations in demand for products in the market. A stable debtors percentage resembles companies efficiency in accounts receivables management.

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