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Research Paper

A comparative Study on the Performance of Working Capital Management of Large and Small Pharmaceutical Companies in India

Management

KEYWORDS : Working Capital, Ratio Analysis, Motaals Liquidity Test

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ABSTRACT

Efficient management of the working capital is one of the pre-conditions for the success of any enterprise. Efficient management of the working capital implies the management of various components of working capital in such a way that an adequate amount of working capital is maintained for the smooth running and for the fulfillment of the twin objectives of liquidity and profitability of a firm. To assess the performance of large and small Indian pharmaceutical companies, the data have been collected for the period of 10 years from 2002-03 to 2011-12. Statistical measures average, standard deviation; ratio analysis, Motaal's liquidity test, Kendalls coefficient of concordance and chi-square test have been used for the analysis. Results of the study concluded that there are no significant differences in the large and small firms as for as utilization of working capital and its various components in different periods.

1. Introduction

In general, the successful performance of a firm depends on its financial manager's efficient management of receivables, inventories and current liabilities (Filbeck & Krueger, 2005). Companies can decrease their resource costs by decreasing amount of resources assigned to circulating assets or they can increase their funding abilities. Components of working capital can be change within time. Shin and Soenen, (1998) has highlighted that efficient working capital management is very important for creating value for the shareholders. Accordingly, an attempt is made in this study on pharmaceutical companies whether they utilize the investment in current assets effectively and to what extent the firms differ in terms of liquidity levels.

In this study, an attempt is made to assess the working capital performance of selected pharmaceutical firms through Ratio analysis and Motaal's Ultimate Test of Comprehensive Liquidity. Ratio analysis is a commonly used technique of working capital management. It is used as a measure of checking the performance of working capital management. It can help to diagnose the working capital position of the enterprise. For measuring the efficiency of working capital, Current Ratio, Quick Ratio, Inventory Turnover Ratio, Debtors Turnover Ratio, Working Capital Turnover Ratio, Current Assets Turnover Ratio and Cash Turnover Ratio are widely used. A year-wise interpretation for the results of the analysis is given and then interpretation for differences in mean values of these ratios across years is presented. Comparison between large and small firms is also provided for each ratio.

2. Review of Literature

The efficiency of working capital management on corporate performance has been the focus of a substantial amount of theoretical and empirical research for many years and in different environments. In this section, it is proposed to review existing literature in the field of working capital management. For this purpose, the research studies in the Indian context as well as those in foreign countries are reviewed below.

Hyun-Han Shin and Luc Soenen (1996) studied the efficiency of working capital management and corporate profitability of 58,985 American firms for the period of twenty years from 1975 to 1994. They used net trade cycle as a measure of working capital management efficiency. The relationship is examined through correlation and regression analysis. The results found that the strong negative relationship between the length of the firm's net-trade cycle and its profitability. In addition, shorter net trade cycles are associated with higher risk-adjusted stock returns.

Bardia (2003) carried out research on the liquidity management of Steel Authority of India Ltd (SAIL). The data required for the study for the period of eleven years from 1991-92 to 2001-02 have been collected from the annual reports of SAIL. For analyzing the efficiency of liquidity management, the technique of ratio analysis, Motaal's comprehensive rank test, statistical techniques like averages, standard deviation and co – efficient of variation have been used. In order to test the significance of relationship between liquidity and profitability rank correlation co-efficient and students 't' tests have been used. The results of the study indicated that the liquidity position of the company is not satisfactory and inventory management of the company is satisfactory

Vedavinayagam Ganesan (2007) analyzed the working capital management efficiency of telecommunication equipment companies. A sample of 349 publicly listed companies in USA has chosen randomly for the period of seven years from 2001 to 2007. The relationship between working capital management efficiency and profitability is examined through correlation and regression analysis. ANOVA has also been applied to study the impact of working capital management on profitability. The study found evidence that the day's working capital is negatively related to the profitability. It is not significantly influencing the profitability of firms in telecommunication equipment industry

Azhagaiah Ramachandran and Muralidharan Janakiraman (2009) analyzed the relationship between the working capital management efficiency and Earnings Before Interest & Taxes (EBIT) of the paper industry in India during 1997 – 98 to 2005 – 06. To measure the working capital management efficiency, three index values *viz*, performance index, utilization index and efficiency have been computed. Index are associated with explanatory variables, *viz* cash conversion cycle, accounts payable days, accounts receivables days and inventory days. Further, fixed financial assets Ratio, financial assets ratio, financial debt ratio and size are control variables in the analysis, and are associated with the EBIT. To analyze the working capital management efficiency, statistical techniques, like minimum, maximum, mean, standard deviation co – efficient of variation, correlation and regression matrix have been used. Working capital ratios and simple regression techniques have also used. The study revealed that the paper industry has managed the working capital satisfactorily. Accounts payable days have a significant negative relationship with EBIT.

Chakraborty and Uday Chand Das (2009) studied the efficiency of management of the working capital of Aventis Pharma Ltd. The data used in this study have been collected from Capitaline-2000 and CMIE report for the period of ten years from 1991- 92 to 2000-01. Ratio analysis average, percentage, standard deviation co-efficient of variation, multiple regressions, and multiple correlation analysis have been used for the analysis of data. Moreover't'-test and 'F'-test have been applied to test the statistical significance. Results of the study showed that the most important and vital components of working capital are inventories and debtors. Efficient management of inventories, debtors and short term liquidity has the positive impact on the profitability.

Osama Suhail Hayajneh and Fatima Laticen Ait Yassine (2011) investigated the relationship between working capital efficiency and profitability of the Jordanian manufacturing firms listed in Amman Exchange Market for the period of seven years from 2000 to 2006. The study has been analyzed through descriptive statistics, correlation analysis and ordinary least squares regression model. The results of the study found a negative significance relationship between profitability and average receivable collection period, average conversion inventory period and average payment period and cash conversion cycle

3. Research Methodology
For the purpose of analysis, balance sheet and income statement data have been sourced from "CAPITALINE" data base. The study has also been made use of information from PROWESS database of CMIE. The empirical study is based on a sample of 21 large and 17 small pharmaceutical drugs and formulation companies.

3.1 Period of the study
The required data for the study have been collected from the Capitaline plus of capital publishers India Pvt Limited, Mumbai, India. The study has been undertaken for the period of ten years from 2002-03 to 2011-12.

3.2 Tools used in the study
To assess the efficiency of working capital management, accounting ratios, Ultimate test of Comprehensive Liquidity (Motaal's), Averages, Standard Deviation, Co-efficient of Variation, Chi-Square, and Kendall's Co-efficient of Concordance and ANOVA have been used.

3.3 Sample Size
The data have been collected for twenty one large and seventeen small pharmaceutical firms in India due to the availability of data for a period of ten years. Large firms taken for the study are Alembic Ltd, Aurobindo Pharma, Cadila Healthcare, Cipla, Dr.Reddy's Lab, FDC Pharmaceuticals Ltd, Glenmark,Pharmaceuticals Ltd, IPCA Laboratories Ltd, JB Chemicals and Pharmaceuticals Ltd, KDL Biotech Ltd, Kopran, Lyka Laboratories, MorepanLaboratories Ltd, Natco Pharma Ltd, Piramal Healthcare Ltd, Ranbaxy,Sun Pharmaceuticals Industries Ltd, Torrent pharmaceuticals ltd, TTK Healthcare, Unichem Laboratories Ltd, and Wockhardt. Small firms taken for the study are Aasada life care ltd, Bal pharma ltd, Gufic Bio Sciences ltd, Ind-Swift laboratories ltd, Ndoco remedies ltd, Inwinex pharmaceuticals ltd, Jagsonpal pharmaceuticals ltd, Mangalam Drugs and organics ltd, Ortin laboratories ltd, Patidar Buildcon ltd, Surya pharmaceuticals ltd, Themis Medicare ltd, Tonira pharma ltd, Triochem products ltd, Vikram thermo (India) ltd, Welcure Drugs & pharmaceuticals ltd and Wintac ltd.

4. Analysis and Discussion of Results
4.1 Current Ratio
Current ratio shows the relationship between current assets and current liabilities. It indicates the proportion of current assets to current liabilities. The larger the ratio, the higher is the liquidity of the business unit. A very high ratio also indicates excess investment in current assets and may lead to a reduction in the profitability of the unit. Mean values of current ratio are found to vary widely among firms and across years. To examine if there is any significant differences in the mean values, the following hypothesis is framed and tested through 'F' test. A two-way analysis of variance is employed to find the 'F' values.

H_0-1: Mean values of current ratio of large and small firms do not differ significantly across years

Table 1
Current Ratio of Large and Small Firms

Year	Large Firms(n=21)			Small Firms(n=17)		
	Mean (times)	S.D (times)	C.V (%)	Mean (times)	S.D(times)	C.V (%)
2002-03	3.23	1.21	37	5.82	8.63	148
2003-04	3.25	1.54	47	4.94	5.72	116
2004-05	3.15	1.41	45	4.49	4.38	98
2005-06	2.93	1.26	43	4.08	3.51	86
2006-07	3.51	2.17	62	4.43	4.54	103
2007-08	3.53	2.12	60	3.13	1.01	32
2008-09	3.01	1.43	47	2.86	1.31	46
2009-10	2.83	1.38	49	2.53	1.41	56
2010-11	3.01	1.86	62	3.74	4.43	118
2011-12	2.77	1.58	57	2.87	1.38	48
Mean	3.12	1.59	50	3.89	3.63	85
F-value	0.75 (1.932)			0.15 (1.945)		

The analysis shows that the overall average of current ratio of small firms is higher than the large firms (3.89 and 3.12 times). This is more than the standard norm of 2:1. Current ratio shows higher than the standard norm in all ten years. This shows that small firms have more liquidity than large firms do. The average of co-efficient of variation of small firm's current ratios across years as well as among firms is higher than the large firms (85 percent and 50 percent). This indicates that the current ratio of large firms is more stable than the small firms. During the study period, the current ratio of large and small firms in all ten years is higher than the generally followed ratio of 2:1. It is evident from the Table 1 that the calculated value of 'F'(0.75 in large firms and 0.15 in small firms) is lower than the critical 'F' values (1.932 and 1.945) at five percent level of significance, it shows that the mean values of current ratio do not differ significantly across years in all type of firms.

4.2 Quick Ratio
Quick ratio indicates the immediate liquidity of current assets. Recognizing that inventory might not be very liquid, this ratio takes into account quickly realizable assets and measures them against current liabilities. A quick ratio of 1:1 is considered to be a more satisfactory measure of liquidity position of a company. The following hypothesis is framed and tested the mean values through 'F' test.

H0-2: Mean values of Quick ratio of large and small firms do not differ significantly across years

Table 2
Quick Ratio of Large and Small Firms

Year	Large Firms(n=21)			Small Firms(n=17)		
	Mean (times)	S.D (times)	C.V (%)	Mean (times)	S.D (times)	C.V (%)
2002-03	2.17	1.02	47	3.46	3.91	113
2003-04	2.34	1.36	58	3.13	3.30	105
2004-05	2.24	1.26	56	3.02	3.46	114
2005-06	2.10	1.26	60	2.79	2.69	96
2006-07	2.61	2.09	80	3.34	4.51	135
2007-08	2.64	2.05	78	2.14	0.67	31
2008-09	2.19	1.48	68	1.99	0.93	47
2009-10	2.02	1.39	69	1.76	0.82	47
2010-11	2.23	2.04	92	3.06	4.55	149
2011-12	1.98	1.69	85	2.14	1.27	59
Mean	2.25	1.56	69	2.68	2.61	89
F-value	0.83 (1.932)			1.28 (1.945)		

Table 2 also shows that the quick ratio of both firms is fluctuating during the study period. Overall average quick ratio of the sample industries stands above 2, which reveals that the quick assets of industries are sufficient to meet current obligation. The calculated 'F' value (0.83 in large firms and 1.28 in small firms) is lower than the critical 'F' value at five percent level of significance (1.932 and 1.945). The overall average of quick ratio of small firms is higher than the large firms (2.68 and 2.25 times). The average of co-efficient of variation of small firm's quick ratios across years as well as among firms is found to be higher than the large firms (89 percent and 69 percent,). This indicates that the quick ratio of large firms is more stable than the small firms. It is evident from the analysis that the quick assets of all the large and small firms are sufficient to meet current obligation. Analysis of variance reveals that there is no significant difference between the mean values of quick ratio across years.

4.3 Inventory Turnover Ratio

Turnover ratio of inventory directly affects the profitability of a business firm. The higher the turnover ratio, larger will be the profits of the company. A higher turnover ratio indicates that the firm has conducted more business with a relatively lower level of inventories which results in saving of inventory costs. The ratio also indicates the speed at which inventory is been converted into sales of a firm. To examine if there are any significant differences in the mean values, the following hypothesis is framed and tested through 'F' test

$H_{0-3:}$ Mean values of Inventory turnover ratio of large, and small firms do not differ significantly across years

Table 3
Inventory Turnover Ratio of Large and Small Firms

Year	Large Firms(n=21)			Small Firms(n=17)		
	Mean (times)	S.D (times)	C.V (%)	Mean(times)	S.D (times)	C.V (%)
2002-03	5.65	2.63	47	4.39	3.33	76
2003-04	6.88	3.57	52	5.58	5.93	106
2004-05	7.09	4.50	64	4.64	2.65	57
2005-06	8.37	7.77	93	5.82	5.78	99
2006-07	6.96	6.94	100	5.91	4.73	70
2007-08	7.34	7.85	107	5.03	2.94	58
2008-09	8.46	9.76	115	4.74	3.75	79
2009-10	7.36	7.21	98	15.80	28.25	179
2010-11	8.25	6.60	80	9.25	16.62	180
2011-12	7.61	6.02	79	5.19	7.02	135
Mean	7.40	6.28	83	6.63	8.1	103
F-value	1.72 (1.932)			1.90 (1.945)		

The overall average of inventory turnover ratio of large firms is higher than the small firms (7.40 and 6.63 times). The overall average of 6.63 times for all industries put together show that utilization of inventory in small firms is lesser than large firms. The average of co-efficient of variation of small firm's inventory turnover ratios across years is higher than the large firms (103 percent and 83 percent). This indicates that the inventory turnover ratio of large firms is more stable than the small firms. ANOVA indicates that there is no significant difference between the mean values of inventory turnover ratio across years.

4.4 Debtor's Turnover Ratio

Accounts receivables performance of the firm is evaluated with the help of debtor's turnover ratio. This ratio shows the efficiency achieved in using the funds invested in receivables. It measures the speed at which debtors are converted into cash. Generally it is observed that a higher debtor's turnover ratio will add to increased liquidity and reduces investment in debtors indicating efficient management of debtors. This ratio is calculated by dividing sales by debtors. To examine the significant differences in the mean values, the following hypothesis have been framed and tested through 'F' test.

$H_{0-4:}$ Mean values of Debtors turnover ratio of large and small firms do not differ significantly across years.

Table 4
Debtors Turnover Ratio of Large and Small Firms

Year	Large Firms(n=21)			Small Firms(n=17)		
	Mean (times)	S.D(times)	C.V (%)	Mean (times)	S.D(times)	C.V (%)
2002-03	5.18	2.55	49	4.42	3.46	78
2003-04	5.21	2.42	46	6.48	8.00	123
2004-05	5.19	3.20	62	8.40	14.05	167
2005-06	5.12	2.63	52	5.15	3.11	60
2006-07	4.99	2.70	54	4.51	3.35	74
2007-08	5.34	3.99	75	3.89	2.22	57
2008-09	5.87	4.71	80	3.20	2.25	70
2009-10	5.96	5.63	94	4.46	4.48	100
2010-11	7.76	11.98	154	3.72	2.57	67
2011-12	32.46	122.34	377	3.62	2.01	56
Mean	8.31	16.21	104	4.79	4.55	85
F-value	1.029 (1.932)			1.44 (1.945)		

The overall average of large firms stands at 8.31 times and small firms stand at 4.79 times. There is a fluctuation shown in the debtor's turnover ratio of both large and small firms during the study period. The overall average of debtor's turnover ratio of large firms is higher than the small firms (8.31 and 4.79). This indicates that accounts receivables of large firms have been efficiently managed. The average variation of large firm's debtor's turnover ratio across years is higher than the small firms (104 percent and 85 percent). ANOVA indicates that there is no significant difference between the mean values of debtor's turnover ratio across years.

4.5 Working Capital Turnover Ratio

Working capital turnover ratio measures the efficiency of employment of working capital. It indicates the utilization of net working capital by a pharmaceutical firm. In order to test the efficiency of working capital, working capital turnover ratio is calculated. The faster the working capital turnover, the lower is the investment in the components of working capital and greater are the profits. However, a very high turnover of working capital might indicate that the firm is operating with greater volume of sales. A low working capital turnover ratio should be taken to mean that the working capital is not adequately utilized. The following hypothesis is framed and tested through 'F' test.

H0-5: Mean values of Working capital turnover ratio of pharmaceutical firms do not differ significantly across years

Table 5
Working Capital Turnover Ratio of Large and Small Firms

Year	Large Firms(n=21)			Small Firms(n=17)		
	Mean (times)	S.D (times)	C.V (%)	Mean (times)	S.D(times)	C.V (%)
2002-03	2.80	1.13	40	2.07	1.01	49
2003-04	3.18	1.51	47	0.53	7.60	1429
2004-05	3.20	1.87	58	2.26	2.51	111
2005-06	3.46	2.07	60	2.85	3.22	113
2006-07	3.09	2.92	94	3.11	2.94	95
2007-08	3.51	4.78	136	2.66	1.76	66
2008-09	2.94	1.86	63	2.28	1.40	61
2009-10	3.11	4.29	138	0.85	7.40	875
2010-11	2.32	2.67	115	1.30	3.85	296
2011-12	2.37	4.27	180	2.20	2.67	121
Mean	3.00	2.73	93	2.01	3.43	321
F-value	0.62 (1.932)			0.80 (1.945)		

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Table 5 shows that there is a fluctuating trend in working capital turnover ratio. The overall average of working capital turnover ratio of large firms is higher than the small firms (3.00 and 2.01), showing an efficient utilization of working capital in the large firms. The average of co-efficient of variation of small firms' working capital turnover ratios across years is higher than the large firms (321 percent and 93 percent). This indicates that the working capital turnover ratio of large firms is stable than the small firms.

4.6 Current Assets Turnover Ratio
This ratio is also called as gross working capital turnover ratio. A higher value of this ratio indicates greater circulation of current assets, while a low ratio indicates a stagnation of the flow of current assets. The greater the number of times the current assets are turned over, the greater is its efficiency. Current assets turnover is computed by dividing sales revenue by current assets. To investigate the significant differences in the mean values, the following hypothesis is framed and tested through 'F' test.

$H_{0-6:}$ Mean values of current asset turnover ratio of large and small firms are do not differ significantly

Table 6
Current Asset Turnover Ratio of Large and Small Firms

Year	Large Firms(n=21)			Small Firms(n=17)		
	Mean (times)	S.D (times)	C.V (%)	Mean (times)	S.D(times)	C.V (%)
2002-03	1.76	0.58	33	1.30	0.54	42
2003-04	1.86	0.61	33	1.53	0.88	58
2004-05	1.80	0.69	38	1.56	0.75	48
2005-06	1.87	0.75	40	1.74	1.21	69
2006-07	1.54	0.85	55	1.56	1.20	76
2007-08	1.59	0.93	59	1.45	0.86	59
2008-09	1.54	0.69	45	1.25	0.72	57
2009-10	1.62	0.75	46	1.61	1.28	80
2010-11	1.54	0.71	46	1.62	1.22	75
2011-12	1.60	0.77	48	1.45	0.90	62
Mean	1.67	0.73	44	1.51	0.95	62
F-value	1.65 (1.932)			0.57 (1.945)		

This ratio shows fluctuating trend during the study period. This implies efficient management of current assets during the study period. The overall average of current assets turnover ratio of large firms is higher than the small firms (1.67 and 1.51), this reveals that the large firms are more efficient in their current assets turnover ratio than the small firms. The average of co-efficient of variation of small firms' current assets turnover ratios across years is higher than the large firms (62 percent and 44 percent).This indicates that the current assets turnover ratio of large firms is more stable than the small firms. It is also seen from the table that the mean values of current asset turnover ratio do not significantly differs among the years.

4.7 Cash Turnover Ratio
This ratio indicates the extent of utilization of cash which is considered to be a key current asset. In other words, it reveals that the number of times cash flows out for payment to creditors. A high cash turnover ratio indicates low cash balance in hand and low ratio means idle cash balance. To examine if there is any significant difference in the mean value of this ratio, the following hypothesis is framed and tested through 'F' test.

$H_{0-7:}$ Mean values of cash turnover ratio of large and small firms do not differ significantly across years.

Table 7
Cash Turnover Ratio of Large and Small Firms

Year	Large Firms(n=21)			Small Firms(n=17)		
	Mean (times)	S.D (times)	C.V (%)	Mean (times)	S.D(times)	C.V (%)
2002-03	15.33	15.35	100	5.44	9.37	172
2003-04	12.89	14.70	114	8.33	10.86	130
2004-05	17.21	17.13	100	7.59	5.83	77
2005-06	19.72	25.59	130	10.94	18.08	165
2006-07	18.22	24.82	136	19.18	14.06	230
2007-08	20.87	40.70	195	13.04	20.73	159
2008-09	9.75	12.81	131	19.23	21.61	112
2009-10	20.11	43.61	217	18.65	24.60	132
2010-11	15.22	13.00	85	15.81	16.54	105
2011-12	30.79	41.35	134	11.91	14.82	124
Mean	18.01	24.90	134	13.02	15.65	140
F- value	1.54 (1.932)			1.65 (1.945)		

It is inferred from the table 7, that the cash turnover ratio across years shows a fluctuating trend during the study period. The overall average of cash turnover ratio of large firms is higher (18.01) than the small firms (13.02) this reveals that the large firms are maintaining low cash balances in hand compared with small firms. The average of co-efficient of variation of small firm's cash turnover ratios across years is higher (140 percent) than the large firms (134 percent), among the industries; coefficient of variation of small firms is higher than the large firms. This indicates that the cash turnover ratio of large firms is more stable over the years. ANOVA shows that the mean values of cash turnover ratio of all large, and small firms do not differ significantly across years.

Liquidity Ranking: Motaal's Comprehensive Test
Motaals (1958) prescribes a comprehensive test for determining the soundness of a firm is liquidity position. The liquidity position of a firm is largely affected by the composition of working capital in as much as any considerable shifts to the relatively less current asset or vice -versa will materially affect a firm's stability to pay its current debts promptly. This test combines the level of net working capital and its adequacy with the structural healthiness of working capital, thereby consolidating various significant elements of short-term liquidity. Companies are assigned ranks according to their respective degree of liquidity, based on the following four ratios: Net Working Capital to Cur-

rent Assets Ratio, Inventory to Current Assets Ratio, Liquid Assets to Current Assets Ratio and Loans and Advances to Current Assets Ratio.

Liquidity Ranking

A process of ranking has been used to arrive at a more comprehensive measure of liquidity in which four ratios. A high value of net working capital to current assets and liquid assets to current assets shows greater liquidity and accordingly ranking is done in that order. On the other hand, a low inventory to current assets and, loans and advances to current assets indicates a more favorable position and therefore ranking has been done in that order. Final ranking has further been done on the basis that the lower the total of individual ranks, the more favorable is the liquidity positions of the concern and vice versa.

First rank is assigned to the most liquid firm in each case, and rank two to the next, and so on till the last rank is assigned to the least liquid firm. Each firm is assigned four ranks as there are four ratios. A final ranking is done based on the sum of four ranks of each firm. This is the ultimate rank depicting the relative liquidity of the companies. In assigning the ultimate rank, companies with similar ranks are assigned average ranks.

Liquidity Ranking of Large and Small Firms

An attempt has been made to evaluate the overall liquidity position of twenty-one large and seventeen small firms with the help of Motaal's Comprehensive test.

Table 8

Year/Ratios	NWC/ C A	INV / CA	L&A / CA	LA / CA	NWC /CA Rank (A)	INV / CA Rank (B)	L&A / CA Rank(C)	LA / CA Rank (D)	Total Ranks(A+B+C+D)	Ultimate Ranks
2002-03	0.8	0.16	0.05	0.09	1	2	8	10	21	5
2003-04	0.58	0.31	0.83	0.38	9	10	1	3	23	6
2004-05	0.64	0.21	0.02	0.51	7	5	10	2	24	8
2005-06	0.64	0.20	0.27	0.73	7	4	3	1	15	1
2006-07	0.77	0.21	0.05	0.34	2	5	8	4	19	3
2007-08	0.73	0.25	0.29	0.19	5	7	2	9	23	6
2008-09	0.76	0.10	0.06	0.21	3	1	7	8	19	3
2009-10	0.41	0.27	0.19	0.26	10	8	5	6	29	10
2010-11	0.74	0.19	0.27	0.23	4	3	3	7	17	2
2011-12	0.67	0.28	0.1	0.34	6	9	6	4	25	9

Liquidity Ranking of Large Pharmaceutical Firms (n=21)

Kendall's Coefficient of Concordance =0.24
Calculated Chi-square (X2) value =13.20
Table value of Chi-square(X2) 10 Percent=14.68; 5 Percent =16.92; 1 Percent =21.66 Degrees of freedom =9

Table 9

Liquidity Ranking of Small Pharmaceutical Firms (n=17)

Year/Ratios	NWC/C A	INV/CA	L&A /CA	LA / CA	NWC/C A Rank (A)	INV/CA Rank(B)	L&A/ CA Rank(C)	LA / CA Rank (D)	Total Ranks(A+B+C+D)	Ultimate Ranks
2002-03	1.28	2.21	24	14.86	10	6	7	3	26	9
2003-04	1.65	2.07	17.44	8.18	5	4	8	4	21	4
2004-05	1.79	3.35	27.97	4.53	3	8	5	9	25	8
2005-06	1.54	2.02	26.68	6.47	7	3	6	8	24	7
2006-07	2.00	3.76	13.09	6.92	2	9	9	7	27	10
2007-08	1.35	2.75	58.80	23.98	9	7	3	2	21	4
2008-09	1.53	1.70	40.48	8.03	8	2	4	5	19	3
2009-10	1.59	2.19	86.07	7.89	6	5	1	6	18	2
2010-11	2.09	0.25	3.13	1.74	1	1	10	10	22	6
2011-12	1.74	4.39	63.11	34.21	4	10	2	1	17	1

Kendall's coefficient of concordance (W) =0.43

Calculated Chi-square (X2) value =0.83 Table value of Chi-square(X2) 10 Percent=14.68; 5 Percent =16.92; 1 Percent =21.66 Degrees of freedom =9

Table 8 shows the ranking of firms in pharmaceutical industry based on Motaal's ranking. During the ten year study period, it is found that the most liquidity is found in the year 2005-06 and very poor liquidity is found in 2009-10. Liquidity position of 2010-11 ranked as second. While compared with other eight years, ranks of 2006-07 and 2008-09 share third rank. Liquidity position of 2002-03 is fifth. The years 2002-03 and 07-08 share sixth rank. The years 2004-05 occupies eight rank. 2011-12 stands at ninth rank and the last rank have been awarded to the year 2009-10. Which indicates the liquidity position of large pharmaceutical firms in the year 2009-10 is very poor.

Liquidity position of small firms is revealed in the table 9. During the study period, it is found that the most liquidity of small firms is found in the year 2011-12 and the very poor liquidity is found in 2006-07. Ranks of the years 2009-10, 2008-09, 2010-11, 2005-06, 2004-05 and 2002-03 are 2, 3,6,7,8 and 9 respectively. The years 2003-04 and 2007-08 share the fourth and fifth ranks. The last rank has been awarded to the year 2006-07. Which indicates the liquidity position of the small firms is very poor in 2006-07 when compared with rest of the years.

Testing Relative Liquidity of Large and Small FirmsIn order to examine if the liquid level is uniform among the large and small firms, Kendall'$_{s\ co}$-efficient of concordance (W) (C.R. Kothari 2007) has been computed. This co-efficient measures the degree of uniformity among the firms. Chi-square test has been applied for testing the significance of Kendall'$_{s\ co}$-efficient. The following hypothesis has been framed and tested.

H0: There is no significant difference in liquidity among the large and small firms during the study period

The computed value of chi-square of both the firms is less than the critical value of chi-square at 10 percent, 5 percent and 1 percent level of significance. Hence the computed value of Kendall's coefficient is not significant. Firms do not differ from each other in terms of liquidity during period of study. So the hypothesis of the study is accepted. Research studies carried out by Singh (2004) Prdeep Singh (2008) and Benjamin Christoper and Kamalavalli (2010) support this finding.

Conclusion

From the ratio analysis it is inferred that small firm's liquidity position is better than the large firms. However, large firms exhibit better position in inventory turnover, debtor's turnover, overall working capital and current asset turnover ratios relative to small firms. Hypothesis testing in these two cases of large and small firms indicate that the null hypotheses are accepted in both the cases. Therefore, it is concluded that there are no significant differences in the large firms and small firms as for as utilization of working capital and its various components in different periods.

Pharmaceutical firms are found to be with no differing levels of liquidity. The years 2005-06 of large firms and 2011-12 of small firms are ranked as first in terms of liquidity as per Motaal's test. In large firms 2009-10 and 2006-07 in small firms are assigned the last rank. Nevertheless, the difference in liquidity is not found to be significant as revealed by Chi-Square test results. Both large and small firms are good at maintaining liquidity, utilizing working capital and current assets, managing inventories and debtors revealed in the ratio analysis. There is a fluctuation in the efficiency and liquidity position of firms.

6. Limitations of the Study

The study is based on secondary data collected from the CMIE's "PROWESS" database and "Capitaline Plus". Therefore the quality of the study depends purely upon the accuracy, reliability and quality of the secondary data source.

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