



INDUSTRY PRACTICE RELATING TO AGGRESSIVE CONSERVATIVE WORKING CAPITAL POLICES: AN EMPIRICAL STUDY ON INDIAN PHARMACEUTICAL COMPANIES

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Abstract:

Working capital policy can be best described as a strategy, which provides the guideline to manage the current assets and the current liabilities in a way that it reduces the risk of default (Brian, 2009). Working capital policy mainly focuses on the liquidity of current assets to meet the current liabilities. A company can adopt any of the three approaches to working capital, namely: matching approach, conservative approach and aggressive approach (Omolumo 1997). In this article, an evaluation of working capital policies of the select pharmaceutical companies are carried out for ten year period from 2006 to 2015. The types of current assets investment and financing policies adopted by the sample pharma companies are analyzed first, differences in policies are presented next which is followed by the analysis of stability in policies over the period of study. Also the relationship between current assets investment and financing policies is examined and finally changes in policies are studied.

1. Introduction:

Working capital policy refers to the policy adopted in the management of short term assets and liabilities. Working capital management is really vital for the short term financial health of a business no matter what is its size. For the growth and survival of firms efficient working capital management is indeed a requirement. Financial distress leading to bankruptcy is believed to be a result of poor short term asset and liability management. Exercising of proper working capital policy and maintenance of proper finance are very important for every organization and they have a significant impact on a company's performance and growth. Mismanagement and starvation of working capital is regarded as the important cause, if not major, for the failure of business in many countries, developed and underdeveloped. Management of short term assets and liabilities warrants a careful investigation since the working capital management plays an important role for the firm's profitability and risk as well as its value (Smith, 1980). Firms try to keep an optimal level of working capital that maximizes their value (Howorth and Westhead 2003, Deloof 2003). A firm may adopt an aggressive working capital management policy with a low level of current assets as percentage of total assets. Moreover an aggressive working capital management policy may be used for the financing decisions of the firm with high level of current liabilities as percentage of total liabilities. Excessive level of current assets may have a negative effect on the firm's profitability whereas a low level of current assets may lead to lower level of liquidity and stock outs resulting in difficulties in maintaining smooth operations (Van Horne and Wachowicz 2004). In this article, an evaluation of working capital policies of the select pharmaceutical companies are carried out. The types of current assets investment and financing policies adopted by the sample pharma companies are analyzed first; differences in policies are presented next which is followed by the analysis of stability in policies over the period of study. Also the relationship between current assets investment and financing policies is examined. And finally changes in policies are studied.

The Objectives of the Study are as Follows:

- ✓ To investigate whether there is a significant difference among the working capital practices of the firms across different firms
- ✓ To analyze whether these aggressive or conservative working capital policies relatively stable over the period of time.
- ✓ To validate the relationship of aggressive and conservative working capital policies among firms and see whether an aggressive policy accompanied by aggressive financing policy.
- ✓ To examine the relationship in the changes among the study between aggressive and conservative working capital policies.

2. Literature Review:

Weinraub and Visscher (1998) have discussed the issue of aggressive and conservative working capital management policies for a period of 10 years from 1984 to 1993 of US firms. This study looked at ten diverse industry groups to examine the relative relationship between their aggressive/conservative working capital policies. Their study also revealed that the relative nature of the working capital management policies exhibited remarkable stability over the 10-year study period and a high and significant negative correlation between industry asset and liability policies. They also found that when relatively aggressive working capital investment policies are followed, they are balanced by relatively conservative working capital financing policies.

Rahaman and Florin (2007) investigated the relative relationship between aggressive and conservative working capital practices of six major manufacturing industries over a period of five years in Bangladesh. Analysis revealed that working capital investment policies of Pharmaceutical, Textile, and Food, Engineering, Cement and miscellaneous industries are not significantly different but their working capital financing policies are different. They also measured the degree of relationship about how aggressive asset management corresponds to aggressive financial management. It is evident that relative aggressive working capital management is balanced by relatively conservative working capital financial management.

Nazir and Afza (2009) investigate the relationship between the policies that firms adopt to deal with the working capital and firms profitability by using data on 204 non-financial firms listed in Karachi Stock Exchange (KSE). The results indicate a negative relationship between firms' profitability and its financing policies, the firm that adopt an aggressive working capital policy generate a lower rate of return than that of those adopting a conservative working capital policy.

Mona Al-Mwalla (2012) investigate the impact of working capital management policies (aggressive and conservative policies) on the firms' profitability and value by using data of 57 industrial firms listed in Amman Stocks Market for the period of 2001 to 2009, the results show that following a conservative investment policy has a positive impact on a firm's profitability and value and following the aggressive financing policy has a negative impact on the firm's profitability and value. Finally, this study finds that firm Size, firm Growth and GDP Growth has a positive impact on the firm's profitability and value with no effect of financial leverage.

Taghizadeh Khanqah Vahid, Akbari Khosroshahi Mohsen and Ebrati Mohammadreza (2012) investigate the impact of working capital management policies (aggressive and conservative policies) on the firms' profitability and value. A sample of 28 Iranian Companies listed on Tehran Stock Exchange for a period of 5 years from 2005 to 2009 was selected. The results show that following a conservative investment policy and aggressive financing policy has a negative impact on a firm's profitability and value. The study also finds that firm Size and firm Growth has a positive impact on the firm's profitability and value, while firm leverage show negative impact.

Dr. Faris Nasif (2011) investigates the relationship between the aggressive/conservative working capital policies for 59 industrial companies listed at the Amman Stock Exchange for a period of 2004-2007. The impact of aggressive/conservative working capital investment and financing policies has been examined through cross-sectional regression models between working capital policies and profitability as well as the risk of the firms. The result indicates a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policy.

Atif Hussain, Syed Umar Farooq and Kaleem Ullah Khan (2012) empirically investigate the relationship between working capital management and profitability. Data set consists of companies listed in Karachi Stock Exchange for the period of 2006-2010. Correlation and panel data regression using fixed effect are used for testing hypotheses to determine the association between the independent variables (Return on Investment and Return on Equity) and independent variables (Aggressive Investment Policy and Aggressive Financing Policy) along with control variables (Company Size, Sale Growth, Leverage Ratio and GDP growth). The result revealed that low investment in current assets and low current liability financing increases the profitability of firms. The study also suggested that company size, sale growth and leverage ratio significantly affect the profitability of the firm. This reveals that profitability of the firm is significantly affected by the working capital management and working management policies.

Md. Nazrul Islam & Shamem Ara Mili (2012) examine the relative relationship between the working capital investment and financing practices of the five selected listed pharmaceutical companies in Bangladesh over a period of five years. The study found that there is a significant difference in the working capital investment and financing policies among the pharmaceuticals but there is an interrelation between the aggressive working capital investment policy corresponding to conservative working capital financing policy of the pharmaceuticals over the study period and vice-versa.

Babatunde R. Yusuf and Khadijah A. Idowu (2012) examined the relationship between working capital aggressiveness and financial performance of manufacturing firms in Nigeria for the period 2006 to 2010. The findings show that there is 'higher' return on assets but 'lower' risk involved when total assets are financed by aggressive current assets but higher risks with lower return when financed by aggressive current liabilities hence, inversely correlated. The results also depict that both aggressive current assets and liabilities will bring

lower returns on equity hence negatively correlated whereby higher risks involved for aggressive current assets and a lower risks involved for aggressive current liabilities respectively.

3. Variables and Methodology:

The data set includes current assets, current liabilities and total assets from a random sample of top ten pharmaceutical companies on the basis of market capitalization more than twenty cores and which are enlisted in Bombay Stock Exchange Ltd, for the period from 2006 to 2015. We have used yearly CA/TA and CL/TA ratios of the selected pharmaceuticals as the raw data for the study. Both primary as well as secondary sources of information have been considered as a data collection process. The basic source of the study’s collected data was “capital line data base”. The statistical tools like mean, standard deviation, tukey’s HSD and F-test (One-way ANOVA) are adopted to reach the final conclusion of the study. For the further refinement of the findings Pearson rank correlation coefficient and Regression between the aggressive/conservative working capital investment and financing policies are also computed. The hypotheses are tested through statistical measurement to arrive at systematic conclusion and contribute to the further research work regarding same perspective.

4. Aggressiveness of Current Assets Investment and Financing Policies:

To measure the degree of aggressiveness of investment in current assets, the current assets to total assets ratio is used.

$$AIP = \frac{TCA}{TA}$$

AIP = Aggressive Investment Policy
 TCA = Total Current Assets
 TA = Total Assets

A lower ratio indicates a relatively more aggressive current assets investment policy.

The total current liability to total assets ratio is used to measure the degree of aggressive financing policy.

$$AFP = \frac{TCL}{TA}$$

Where AFP = Aggressive Financing Policy
 TCL = Total Current Liabilities
 TA = Total Assets

A high ratio indicates relative aggressiveness.

5. Analysis and Interpretation:

Working Capital Policies:

Table 1: Ten Years Firms Means and Standard Deviation for Current Assets/ Total Assets and Total Current Liabilities/Total Assets

Companies	TCA/TA		TCL/TA	
	MEAN	SD	MEAN	SD
CIPLA	0.53	0.12	0.19	0.05
DR.REDDY	0.42	0.11	0.19	0.03
LUPIN	0.54	0.06	0.25	0.06
AUROBINDO	0.57	0.10	0.21	0.06
SUN PHARMA	0.24	0.08	0.11	0.05
CADILA	0.35	0.04	0.24	0.06
GLENMARK	0.36	0.17	0.21	0.11
TORRENT	0.53	0.16	0.31	0.06
GLAXOSMITH	0.64	0.52	0.20	0.04
IPCA LABS	0.56	0.04	0.25	0.03

SD: Standard Deviation

Table 1 presents the descriptive analysis of ten pharmaceutical firms from 2006 to 2015. The TCA/TA ratio and TCL/TA ratios are averaged for each firm for all ten years and standard deviation has been calculated. It is observed from the table that the mean values of TCA/TA ratios ranges from 0.24 to 0.64. Among ten companies mean values of TCA/TA ratios of four companies namely Dr. Reddy, Sun pharma, Cadila and Glemark do not exceed 0.50 indicating that they were aggressive investment policy. A look at the financing policies the average TCL/TA varies from 0.11 times in Sun Pharma to 0.31 times in Torrent. It is depicted from the above table that all firms are following conservative financing policy which implies more usage of higher cost of capital namely long term debt and equity in financing their working capital.

Differences in Policies:

To determine if significant differences exist among the working capital investment policies of the select companies, one-way ANOVA test is applied to the ten-year mean values of TCA/TA ratios of the ten companies. The null hypothesis framed for the test is – There is no difference in the investment policy across the pharmaceutical companies. The mean values were also subjected to the Tukey’s Honestly Significant Difference (HSD) test and the results are given in Table (2)

Table 2: Significance Levels for Company Mean Differences of the Current Asset / Total Asset Ratio (F Test and Tukey's HSD)

F Statistics = 1.02									
	CIPLA	DR.REDDY	LUPIN	AURO BINDO	SUN PHARMA	CADILA	GLEN MARK	TORRENT	GLAXOS MITH
DR.REDDY	1.55								
LUPIN	-0.06	-1.61							
AUROBINDO	-0.48	-2.03	-0.42						
SUN PHARMA	4.24	2.69	4.50*	4.72*					
CADILA	2.67	1.12	2.73	3.15	-1.57				
GLENMARK	2.53	0.98	2.59	3.01	-1.71	-0.14			
TORRENT	0.06	-1.49	0.12	0.54	-4.18	-2.61	-2.47		
GLAXOSMITH	-1.59	-3.15	-1.54	-1.11	-5.84*	-4.27	-4.13	-1.66	
IPCA LABS	-0.40	-1.95	-0.34	0.09	-4.64*	-3.07	-2.93	-0.46	1.20

* Significant at 5% level.

The resulting value of F-Test is 1.02 which is not significant at 5%, 1% and 10% level indicating that there is no significant difference exists between the firm's practices relating to aggressive / conservative investment policies. To further examine the strength of results of ANOVA, a TUKEY'S HSD test has also been applied to compare the firms mean value of TCA/TA on a paired sample basis. Among 45 pairs, only 4 pairs are statistically significant at 5% level. It is apparent from both ANOVA and TUKEY'S HSD test that significant difference does not exist among various firms' investment working capital management policies.

Table 3: Significance Levels for Company Mean Differences of the Total Current Liability / Total Asset Ratio (F Test and Tukey's HSD)

F statistic = 0.198									
	CIPLA	DR.REDDY	LUPIN	AURO BINDO	SUN PHARMA	CADILA	GLEN MARK	TORRENT	GLAXO SMITH
DR.REDDY	0.05								
LUPIN	-0.75	-5.02*							
AUROBINDO	-0.18	-5.44*	-4.64*						
SUN PHARMA	1.27	-0.72	0.08	-0.50					
CADILA	-0.67	-2.29	-1.49	-2.07	-3.51				
GLENMARK	-0.23	-2.43	-1.63	-2.21	-3.65	-1.71			
TORRENT	-1.76	-4.90*	-4.10	-4.68*	-6.12*	-4.18	-4.62*		
GLAXOSMITH	-0.04	-6.56*	-5.76*	-6.33*	-7.78*	-5.84*	-6.28*	-4.75*	
IPCA LABS	-0.80	-5.36*	-4.56*	-5.13*	-6.58*	-4.64*	-5.08*	-3.55	-5.27*

* Significant at 5% level.

ANOVA and HSD have also been applied to TCL/TA ratio to examine the differences in financing policies among firms over the study period. The results are presented in the table 3. the F-statistics is 0.198 is not significant at any level, which clearly indicates that there is no significant difference among firms regarding working capital financing policies. Table 3 also shows 21 pairs of firms that are negatively significant at 5% level. It is also clear now that significant firm's differences do not exist in the relative degree of the both aggressive/conservative working capital investment and financing policies.

Stability Between Policies:

Once the significant difference for working capital investment and financing policies are explored across firms, next to examine relative stability of these differences over the study period. For this purpose, a mean value for TA/TA has been calculated for each firm for each year and ranked from the highest to lowest ratio. Then the base year (2006) rankings were sequentially compared to the TCA/TA ranking of each succeeding year. The firms were also ranked from the lowest to highest for each year on the basis TCL/TA and their ranking were also compared with the base year of 2006. The rank order correlation coefficient is presented in the table 4.

Table 4: Rank order correlation between base year and each succeeding year for TCA/TA and TCL/TA

Year	CA/TA	TCL/TA
	Correlation	Correlation
2007	0.37	0.65*
2008	0.21	0.45
2009	0.10	0.08
2010	-0.14	0.16
2011	0.04	-0.14
2012	0.16	-0.26
2013	0.16	0.25
2014	0.07	0.25
2015	0.37	0.16

*Significant at five percent level

The results are presented in the table 4 indicates that there is an evidence of strong instability in their relative conservative working capital investment policy. So the firm follows conservative working capital policies with changes in the components of working capital due to manufacturing of more new products. After examine the stability of financing policy, it is found to be not significant in all the years expect 2007 ,the positive correlation between financing policies indicates that firms follows aggressive investment working capital policy, simultaneously follow aggressive working capital financing policy too.

Relationship between Investment and Financing Policies:

Table 5: Rank Correlation, Per Year, of Aggressive Asset Policies and Aggressive Financing Policies

Year	Correlation
2006	-0.27
2007	-0.50
2008	-0.33
2009	-0.35
2010	-0.77*
2011	-0.38
2012	-0.64
2013	-0.48
2014	-0.45
2015	-0.49

Moreover, the relationship between the working capital investment and financing policies is also examined in this study. The objective is to determine how an aggressive investment policy corresponds to aggressive financing policy. To validate this relationship, a year by year analysis has been conducted. The firms were ranked from low TCA/TA ratios to high, corresponding to ascending order of relatively aggressive policies. Ranking were also orderd,for the first year from high to low TCL/TA ratios, again corresponding to an ascending order of aggressiveness of working capital financing policy. Rank order correlation has performed on these policies for first year and all succeeding years subsequently. The results are presented in the table 5. It is evident from that expect all they correlation between two policies. During the ears are showing negative correlation and in the year 2010 it is negatively significant. From this it is clear that the firms adopted conservative investment policy corresponds with conservative financing policy during the study period.

Changes in Policies:

As it is ascertained that the policies of the companies change through the study period, the question arises whether the policies of all the companies change in the same direction and about the same time, indicating possible influence by some common macro economic factors. Regression analysis is used to examine the relationship in the changes among the firms.

Table 6: Regression between firms Current Asset / Total Asset Ratios for ten year period (R Squared and t values

FIRMS	CIPLA	DR.REDDY	LUPIN	AURO BINDO	SUN PHARMA	CADILA	GLEN MARK	TORRENT	GLAXO SMITH
DR.REDDY	6.23** (0.83)								
LUPIN	3.67** (0.63)	9.43** (0.92)							
AUROBINDO	3.81** (0.60)	6.64** (0.85)	11.50** (0.94)						
SUN PHARMA	-1.01 (0.11)	-0.14 (0.00)	0.10 (0.00)	-0.08 (0.00)					
CADILA	-0.49 (0.03)	-0.07 (0.00)	3.71** (0.63)	-0.15 (0.00)	3.71** (0.63)				
GLENMARK	-0.63 (0.05)	-0.23 (0.01)	10.62** (0.93)	-0.35 (0.02)	3.02** (0.53)	10.62** (0.93)			
TORRENT	-1.04 (0.12)	-1.03 (0.12)	2.25* (0.39)	-1.63 (0.25)	1.00 (0.11)	2.25* (0.39)	2.73* (0.48)		
GLAXOSMITH	-0.56 (0.04)	-0.29 (0.01)	2.86* (0.51)	-0.69 (0.06)	1.25 (0.16)	2.86* (0.51)	3.12** (0.55)	3.94** (0.66)	
IPCA LABS	0.10 (0.00)	0.21 (0.01)	0.10 (0.00)	0.02 (0.00)	1.30 (0.17)	3.06** (0.54)	3.10** (0.55)	2.78* (0.49)	5.08** (0.76)

* Significant at 5% level ** Significant at 1% level

The ten year current assets to total assets ratio for each firms are regressed against the ratios for each other firms. The results of regression of the 45 pairs of firms are presented in Table 6. It could be inferred the result exhibits both positive and negative relationship. The relationship is significant only in 22 pairs at five per

cent level and one percent level of significance. Aurobinda and Sun pharma are the only two firms which do not tend to change their working capital investment policies with other firms.

Table 7: Regression between firm's total current liabilities / total asset ratios for ten year period (R Squared and t values)

Companies	CIPLA	DR. REDDY	LUPIN	AURO BINDO	SUN PHARMA	CADI LA	GLEN MARK	TORRENT	GLAXO SMITH
DR.REDDY	2.15* (0.37)								
LUPIN	2.06* (0.35)	3.81** (0.64)							
AUROBINDO	0.09 (0.00)	2.58* (0.45)	3.11** (0.55)						
SUN PHARMA	-0.21 (0.01)	1.78 (0.28)	1.32 (0.18)	4.04** (0.67)					
CADILA	-1.25 (0.16)	0.82 (0.08)	0.86 (0.08)	3.36** (0.58)	3.17** (0.56)				
GLENMARK	-1.43 (0.20)	0.49 (0.03)	0.84 (0.08)	2.40* (0.42)	1.37 (0.19)	2.72* (0.48)			
TORRENT	0.91 (0.09)	0.93 (0.10)	1.85 (0.30)	1.79 (0.29)	0.73 (0.06)	0.55 (0.04)	1.54 (0.23)		
GLAXOSMIT H	0.11 (0.00)	1.02 (0.11)	1.01 (0.11)	2.11* (0.36)	1.26 (0.17)	2.22* (0.38)	1.73 (0.27)	2.16* (0.37)	
IPCA LABS	-0.45 (0.02)	0.95 (0.10)	0.65 (0.05)	2.04* (0.34)	1.68 (0.26)	3.69* * (0.63)	2.16* (0.37)	1.25 (0.16)	2.90* (0.51)

* Significant at 5% level ** Significant at 1% level

Regarding the changes in working capital financing policies only 17 regressions were significant at five percent and one per cent level of significance. The results are presented in the Table 7. Working capital financing policies of only Torrent is not correlated with that of any other firms. The lack of correlation between working capital financing policies of these companies appear to suggest that these are independent of any external factors. Changes in financing policies over time may depend more on industry factors than investment policy changes.

6. Conclusion:

This study looked at ten pharmaceutical companies to examine the relative relationship between their aggressive/conservative working capital policies. The result of the evaluation of working capital policies of the select companies show that majority of pharmaceutical companies are using conservative working capital investment policy. Similarly conservative financing policy is adopted in almost all companies. One-way ANOVA and Turkey's HSD test reveal that there is no significant difference exists in the adoption of both working capital investment policy and working capital financing policy across the selected companies. The examination of stability of the policies shows that working capital financing policies are more not stable over the period of study than working capital investment policy. Further, the assessment of how aggressive investment policy corresponds to aggressive financing policy shows that companies which pursue relatively aggressive or conservative working capital investment policy simultaneously follows relative aggressive or conservative working capital financing policy. The examination of relationship of changes in investment policies among the firms reveals that there is a relationship in the changes due to common economic factor. On the other hand changes in working capital financing policies are not due to common economic factor but due to company specific factors.

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