

EFFICIENT MANAGEMENT OF WORKING CAPITAL: A STUDY OF HEALTHCARE SECTOR IN INDIA

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Abstract:

Efficient management of working capital means management of various components of working capital in such a way that an adequate amount of working capital is maintained for smooth running of a firm and for fulfilment of twin objectives of liquidity and profitability. Also it is the most crucial factor for survival and solvency of a concern. The present paper attempts to measure the efficiency of working capital of firms in Healthcare Sector in India. The study reveals that most of the firms of this sector have efficiently managed their current assets for the purpose of generation of sales. Further more efficient management of working capital has a positive effect on Income to Average total assets.

Keywords: management working capital, healthcare sector

JEL Classification: G31

Introduction

Efficient Management of Working capital is one of the preconditions for success of an organization as Working Capital is the life giving force to an economic entity. Efficient management of working capital means management of various components of working capital in such a way that an adequate amount of working capital is maintained for smooth running of a firm and for fulfilment of twin objectives of liquidity and profitability. Also it is the most crucial factor for survival and solvency of a concern.

While inadequate amount of working capital impairs the firm's liquidity, holding of excess working capital results in the reduction of the profitability. But the proper estimation of working capital actually required, is a difficult task for the management because the amount of working capital varies across firms over the periods depending upon the nature of business, scale of operation, production cycle, credit policy, availability of raw materials, etc. For this significant amount of funds is necessary to invest permanently in the form of various current assets. For instance, due to time lag between sale of goods and their actual realization in cash, adequate amount of working capital is always required to be made available for maintaining the desired level of sales. Empirical results show that ineffective management of working capital is one of the important factors causing industrial sickness (Yadav, 1986). Modern Financial management aims at reducing the level of current assets without ignoring the risk of stock outs (Bhattacharya, 1997).

Efficient management of working capital is, thus, an important indicator of sound health of an organization which requires reduction of unnecessary blocking of capital in order to bring down the cost of financing. However, short-term assets and liabilities are important components of total assets and needs to be carefully analysed. Management of these 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). The optimal level of working capital is determined to a large extent by the methods adopted for the management of current assets and liabilities.

Review of Literature

Lyroudi and McCarty (1993) indicated that the cash conversion cycle was negatively related to the current ratio, to the inventory conversion period and to the payables deferral

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period, but positively related to the quick ratio and to the receivables conversion period. Moss and Stine (1993) indicated that larger retail firms had shorter CCCs, which implies that smaller companies should try to better manage their CCC. The relationship between the CCC and the current and quick ratios was found positive and significant, indicating that although strong current and quick ratios are generally desirable, they could imply a large investment in working capital which could lead to problems if not taken into consideration.

Pandey and Parera (1997) provided an empirical evidence of working capital management policies and practices of the private sector manufacturing companies in Sri Lanka. The authors found that most companies in Sri Lanka have informal working capital policy and company size has an influence on the overall working capital policy (formal or informal) and approach (conservative, moderate or aggressive). Moreover, company profitability has a strong influence on the methods of working capital planning and control.

Shin and Soenen, (1998) highlighted the relationship between the length of Net Trading Cycle, corporate profitability and risk adjusted stock return was examined using correlation and regression analysis, by industry and capital intensity. They found a strong negative relationship between lengths of the firm's net trading Cycle and its profitability. In addition, shorter net trade cycles were associated with higher risk adjusted stock returns.

Cote and Latham (1999) argued the management of receivables, inventory and accounts payable have tremendous impact on cash flows, which in turn affect the profitability of firms. Each of the WC items (i.e., cash, receivables and inventories) helps in the management of firms in its own particular way.

Fishazion, Von Eije and Lutz (2000) found that both human and financial resources of the firms in developing economies are also very limited to manage WC investments and short-term debt. Proper WCM is particularly important for the firms in developing countries in order to solve these problems.

Lyrودي and Lazaridis (2000) examined the cash conversion cycle (CCC) as a liquidity indicator of the food industry Greek companies and tried to determine its relationship with the current and the quick ratios, with its component variables, and investigates the implications of the CCC in terms of profitability, in debtness and firm size. The results indicated that there is a significant positive relationship between the cash conversion cycle and the traditional liquidity measures of current and quick ratios. The cash conversion cycle was positively related to the return on assets and the net profit margin but had no linear relationship with the leverage ratios. On the other hand, the current and quick ratios had negative relationship with the debt to equity ratio, and a positive one with the times interest earned ratio. Finally, there is no difference between the liquidity ratios of large and small firms.

Saravanan (2001) had undertaken a research on working capital management in non-banking finance companies. He observed that, medium and large size non-banking companies have efficiently made use of bank credit to finance their working capital requirements.

Anand and Prakash (2002) studied working capital management performance of Corporate India by using three financial parameters – Cash Conversion Efficiency, Days Operating Cycle and Days Working Capital and by assigning them different weights in the overall score, to rank and analyse their performance. These estimates were used in benchmarking and performance evaluation of working capital management of companies to help the Chief Financial Officers to manage their working capital better and thus, add to the firm's value. Similar study was made by Anand (2001).

Deloof (2003) tried to establish a relation between working capital management and corporate profitability by investigating a sample of 1009 large Belgian non-financial firms over a period of 1992-1996. Number of days of accounts receivable, inventories and accounts payable were used as a comprehensive measure of working capital. The analysis

through correlation and regression suggested that managers can increase corporate profitability by reducing the number of day's accounts receivable and inventories. The results found a negative relation between gross operating income and number of days accounts receivable, inventories and accounts payable of Belgian firms. Managers could create value for their shareholders by reducing the number of day's accounts receivable and inventories to a reasonable level.

Ghosh and Maji (2003 & 2004) attempted to examine the efficiency of working capital management of the Indian cement companies during 1992-93 to 2001 -2002. For measuring the efficiency of working capital management three index values-performance index, utilization index and overall efficiency index are calculated, instead of using some common working capital management ratios. Using industry norm as target -efficiency level of the individual firms, this paper also tests the speed of achieving that target level of efficiency by an individual firm during the period of study. Finding of the study indicates that the Indian Cement Industry as a whole did not perform remarkably well during this period.

Enyi (2005) studied working capital management from the perspective of net investment. To aid analysis, the research studied financial reports of 25 selected listed companies together with opinion surveys on (existing) practical applications on working capital management in some of them. The results from data analysis were validated using a student's 't' distribution test. The findings revealed that firms that considered relative liquidity performs better and have better growth prospect than others, while the study recommends the use of relative liquidity (relative solvency) for a more accurate estimation of working capital adequacy by organizations.

Lazaridis and Tryfonidis (2006) investigated the relationship between corporate profitability and working capital management using listed companies on the Athens Stock exchange. They discovered that statistically significant relationship existed between profitability and the cash conversion cycle. They concluded that businesses can create profits for their companies by handling correctly the cash conversion cycle and keeping each component of the cash conversion cycle (i.e. accounts receivable, accounts payable and inventory) to an optimum level.

Padachi (2006) examined the trends in working capital management and its impact on firms' performance to identify the causes for any significant differences between the industries. The dependent variable, return on total assets was used as a measure of profitability and the relation between working capital management and corporate profitability is investigated for a sample of 58 small manufacturing firms, using panel data analysis for the period 1998 – 2003. The regression results showed that high investment in inventories and receivables is associated with lower profitability.

Wieslaw and Marcin (2006) analyzed the profiles of six selected construction companies from the viewpoint of working capital formation and the management strategies applied to working capital management. Using financial ratios it was found that the selected companies differ in their levels of working capital and strategies of maintaining working capital in the organization. Most of the companies which were analyzed adopted a moderate policy of working capital management.

Afza and Nazir (2007) investigated the relationship between the aggressive/conservative working capital policies for seventeen industrial groups and a large sample of 263 public limited companies listed at Karachi Stock Exchange for a period of 1998- 2003. The study found significant differences among their working capital investment and financing policies across different industries. The study found a negative relationship among the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies. The study further investigated the

impact of the degree of aggressiveness of working capital policies on market measures of profitability i.e. market rate of return and Tobin's q as well as the risk of firms.

Appuhami (2008) investigated the impact of firms' capital expenditure on their working capital management. The author used the data collected from listed companies in the Thailand Stock Exchange. The empirical research found that firms' capital expenditure had a significant impact on working capital management. The study also found that the firms' operating cash flow, which was recognized as a control variable, had a significant relationship with working capital management.

Samiloglu and Demirgunes (2008) analysed the effect of working capital management on firm profitability. Empirical findings of the study showed that accounts receivables period, inventory period and leverage affect firm profitability negatively; while growth (in sales) affects firm profitability positively.

Sathyamoorthi and Dima(2008) analysed the working capital management of retail domestic companies Botswana Stock Exchange. The research findings revealed that the listed companies adopted a conservative approach in the management of their working capital and suggested that the working capital was not static overtime but varies with the changes in the state of economy.

Falope and Ajilore (2009) studied empirical evidence about the effects of working capital management on profitability performance for a panel made up of a sample of Nigerian quoted non-financial firms for the period 1996-2005. The study found a significant negative relationship between net operating profitability and the average collection period, inventory turnover in days, average payment period and cash conversion cycle for a sample of fifty Nigerian firms listed on the Nigerian Stock Exchange. Furthermore, the study found no significant variations in the effects of working capital management between large and small firms.

Nobanee and AlHajjar (2009)suggested more accurate measures of the efficacy of working capital management where optimal levels of inventory, receivables, and payables are identified, and total holding and opportunities cost are minimized and recalculating the operating cycle, the cash conversion cycle, and the net trade cycle according to these optimal points. In this regard, the authors suggested an optimal operating cycle, an optimal cash conversion cycle, and an optimal net trade cycle as more accurate and comprehensive measures of working capital management

Dănuțiu(2010) analysed the efficiency of working capital management of companies from Alba County. The relation between the efficiency of the working capital management and profitability was examined using Pearson correlation analyses and using a sample of 20 annual financial statements of companies covering period 2004-2008. The study concluded s that there is a weak negative linear correlation between working capital management indicators and profitability rates.

Dong and Su (2010) studied how working capital management plays an important role for success or failure of firm in business and its effect on firm's profitability as well on liquidity. The study made an attempt to investigate the relationship existing between profitability, the cash conversion cycle and its components for listed firms in Vietnam stock exchange. The finding showed that there is a strong negative relationship between profitability, measured through gross operating profit, and the cash conversion cycle. This means that as the cash conversion cycle increases, it will lead to declining of profitability of firm. Therefore, the managers can create a positive value for the shareholders by handling the adequate cash conversion cycle and keeping each different component to an optimum level.

Afza and Nazir (2011) evaluated the efficiency of the working capital management of cement sector of Pakistan for the period 1988-2008. Instead of employing the traditional ratios; working capital efficiency has been measured in terms of utilization index, performance index

and total efficiency index as suggested by Bhattacharya (1997). This paper also tests the speed of achieving the target level of efficiency by an individual firm during the period of study using industry norms as the target level of efficiency. Findings of the study indicated that the cement sector as a whole did perform well during the study period.

Alipour (2011) studied the relationship between working capital management and profitability. Cash conversion cycle was used as a tool to calculate the efficiency of working capital management. The results of the statistical test of the hypothesis indicated that there is a negative significant relation between number of days accounts receivable and profitability, a negative significant relation between Inventory turnover in days and profitability, a direct significant relation between number of day's accounts payables and profitability and there is a negative significant relation between cash conversion cycle and profitability. The results of the research showed that there is a significant relation between working capital management and profitability and working capital management has a great effect on the profitability of the companies and the managers can create value for shareholders by means of decreasing receivable accounts and inventory.

Al Debi'e (2011) examined the relationship between profitability and working capital management measures for industrial companies listed on Amman Stock Exchange in Jordan during the period 2001-2010. Industrial companies in Jordan invest significantly in working capital. Therefore, efficient working capital management is expected to enhance the profitability of these companies. The results showed that less profitable companies wait longer to sell their products, to collect credit sales, and to pay their supplies of goods. Moreover, the results showed that regardless of the level of profitability industrial companies in Jordan pay their suppliers before collecting credit sales. The control variables (Size, Leverage, and GDP growth) included in all regression models were significant and have the expected signs. Profitability increased with Size and GDP growth and decreased with leverage.

Haq et al (2011) empirically examined the relationship between working capital management and profitability by using data of fourteen companies in cement industry in the Khyber Pakhtonkhuwa Province (KPK) of Pakistan. The study was based on secondary data collected from financial reports which is listed in Karachi Stock Exchange for the period of six years from 2004-2009. The data was analysed using the techniques of correlation coefficient and multiple regression analysis. The study concluded that there is a moderate relationship between working capital management and profitability in the specific context of cement industry in Pakistan.

Nobanee Abdullatif and AlHajjar, (2011) investigated the relation between a firm's cash conversion cycle and its profitability. The authors used dynamic panel data analysis for a sample of Japanese firms for the period from 1990 to 2004. The study found a strong negative relation between the length of the firm's cash conversion cycle and its profitability is found in all of the authors' study samples except for consumer goods companies and services companies.

Owalabi (2011) investigated the relationship between liquidity and profitability in selected quoted companies in Nigeria. The results showed that while a trade-off existed between liquidity and profitability in the banking company, the two variables were positively correlated and also reinforced each other in the other companies. While each company sustained some level of liquidity at zero profitability, only the banking and manufacturing firms could sustain some level of profitability at zero liquidity. The performance measures exerted negative but insignificant effect on, and exhibited weak explanatory power in explaining changes in, each other. They exerted significant positive effect on, and strongly explained changes in, each other in processing firm. In the manufacturing firm, they exerted positive but insignificant effect on, and exhibited weak explanatory power in explaining changes in, each other.

Al-Mwalla (2012) investigated the impact of working capital management policies (aggressive and conservative policies) on the firms' profitability and value. Using annual data for 57 industrial firms listed in Amman Stocks Market for the period of 2001 to 2009, the results showed that following a conservative investment policy has a positive impact on a firm's profitability and value. However 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.

Islam and Mili (2012) attempted to study the financial health, strength and weakness of Pharmaceutical industry of Bangladesh by measuring financial performance and risks. The study observed that the liquidity, profitability and solvency position of most of the selected pharmaceuticals are in average position. The factors behind this position were unsound financial management, inadequate working capital, slow conversion of receivables and inventory into cash, lower position of sales, higher amount of debt, no professional distribution house, restrictions on patent right, fixed mark-up system, contrary policy of the government, vulnerability of environmental risk and increased cost of production.

Kieschnick, Laplante and Moussawi (2012) empirically studied the relationship between corporate working capital management and shareholder wealth. Examining U.S. corporations from 1990 through 2006, the authors evidence that a dollar invested in net operating capital is worth less on average than a dollar held in cash. The authors also found that the value of an additional dollar invested in net operating working is significantly influenced by a firm's future sales expectations, its debt load, its financial constraints, its bankruptcy risk, and future inflationary expectations. Also, additional investments in extending credit to one's customers exercise a greater effect than additional investments in inventories on shareholder wealth

Objectives

1. To measure the overall efficiency of working capital
2. To evaluate the efficiency of each firm under study to achieve the target level of efficiency.
3. To measure the relationship between efficiency of working capital and profitability.

Data Base

The present study has been conducted on firms in Healthcare Sector (on the basis of BSE 200 companies). The data has been taken from the PROWESS database of Centre for Monitoring Indian Economy. The study includes 13 manufacturing companies in respect of which data for 14 years i.e. from the year 2000-2001 to 2013-2014 has been taken.

Research Methodology

To measure Efficiency of Working Capital: For measuring the overall efficiency of working capital three parameters namely Performance Index of Working Capital, Utilisation Index of Working capital and Efficiency Index of Working capital have been calculated as follows:

• **Performance Index For Working Capital Management:** Performance index of WCM represents average performance index of the various components of current assets. A firm may be said to have managed its working capital efficiently if the proportionate rise in sales is more than the proportionate rise in current assets during a particular period. Numerically overall performance index more than 1 indicates efficient management of working capital.

$$PI_{(WCM)} = \frac{I_S \sum_{i=1}^n W_{i(t-1)} / W_{it}}{N}$$

Where:

I_S = Sales Index S_t / S_{t-1}

W_i = individual group of current assets

N = number of current asset group

$i = 1, 2, 3, \dots, N$

Total current assets has eight components---- raw material inventory ; work-in-progress inventory; finished goods inventory; stores and spares inventory ; debtors ; cash ; loans and advances ; other current assets.

• **Working Capital Utilization Index:** While performance index represents the average overall performance in managing the components of current assets, utilization index indicates the ability of the firm in utilizing its current assets as a whole for the purpose of generating sales. If an increase in total current assets is coupled with more than proportionate rise in sales, the degree of utilization of these assets with respect to sales is said to have improved and vice versa. This ultimately reflects the operating cycle of the firm. This can be shortened by means of increasing the degree of utilization. Thus, a value of utilization index greater than one is desired.

$$UI_{(WCM)} = \frac{A_{(t-1)}}{A_t}$$

where A = Current Assets / Sales

• **Efficiency Index of Working Capital**

Efficiency index is a measure of performance which reflects the combined effects of both the Performance index and the Utilization index.

$$EI_{(WCM)} = PI_{(WCM)} * UI_{(WCM)}$$

In financial analysis, the average performance of an industry is considered as the yardstick for performance evaluation of the firms belonging to that industry group. For calculating industry norm, any measure of central tendency, e.g. mean or median can be used. Following Robert Morris Associates and Dun & Bradstreet, mean values of each of the three indexes have been used as the industry norms for this study.

Efficiency in Achieving Targeted Level of Efficiency

In order to measure the firm's efficiency in achieving the targeted level of efficiency during the study period following regression equation has been used:

$$Y_i = \alpha + \beta X_i + e_i$$

$$\text{Where, } Y_i = Z_t - Z_{t-1}$$

$$X_i = Z_t^* - Z_{t-1}$$

Z_t = Index at time 't' for the firm and

Z_t^* = Average index of the industry at t-1

The estimated beta value (β) represents the speed of the individual firm in improving its efficiency in achieving the industry norms in this regard. $\beta = 1$ indicates that the degree of firms efficiency in the matter of managing working capital is equal to average efficiency

level of the industry as a whole. $\beta < 1$ signifies that the firm needs improvement for better managing its working capital. Efficiency Index is compared with industry norm for finding out performance. Following Robert Morris Associates' Annual statement studies (1975) and Dun & Bradstreet's Key Business Ratio (1975) calculations, average value has been taken as the target industry norms for the present purpose .

Relationship between Efficiency and Profitability

For testing the Relationship between efficiency of working capital management and profitability Pearson Correlation between the Efficiency Index of Working Capital and Profitability measured by Income to Sales and Income to Assets. Pearson's Correlation analysis is used for data to see the relationship between Efficiency of Working Capital Management and Profitability. R^2 has also been calculated. The significance of the ratio shall be tested at 5 % and 0.5% level of significance. If efficient working capital management increases profitability, one should expect a Positive relationship between Efficiency Index of Working capital and Profitability Variable.

Findings

Efficiency of working Capital: Table 1.1 shows the efficiency index of working capital. The table shows that most of the firms in the Health care sector have a Performance Index of more than 1. Dr Reddy's Laboratories Ltd have the highest index of 5.696 . Only 2 firms have an index of less than one indicating that these firms were not able to efficiently manage their current assets.

Overall Working Capital Utilisation Index is less than 1 which shows that the firms in this sector were not able to utilise current assets as a whole for generation of sales. Only Biocon Ltd, Lupin Ltd., Piramal Healthcare Ltd and Sterling Biotech Ltd have been able to utilise their current assets efficiently.

The overall Efficiency Index is 2.195 indicating that the firms in Healthcare sector have efficiently managed their working capital. Out of all firms under study, only 2 firms namely GlaxoSmithKline Pharmaceuticals Ltd and Sun Pharmaceutical Inds Ltd have not been able to manage their working capital efficiently. These two firms were inefficient in managing the individual components of working capital i.e Performance Index as well in managing current assets as whole for generation of sales i.e Working Capital Utilisation Index.

Table 1 - Efficiency Index of Working Capital

Company	Performance Index	Utilization Index	Efficiency Index
Healthcare (overall)	1.873311	0.983766	2.19587
Apollo Hospitals Enterprises Ltd.	1.0215	0.994	1.029
Biocon Ltd.	3.814	1.0156	7.199
Cipla Ltd.	1.028	0.960	1.0008
Divi's Laboratories Ltd.	1.939	0.951	2.456
Dr Reddy's Laboratories Ltd.	5.696	0.985	5.490
GlaxoSmithKline Pharmaceuticals Ltd.	0.953	0.864	0.856
Glen mark Pharmaceuticals Ltd.	1.453	0.979	1.482
Lupin Ltd.	2.291	1.092	2.532
Opto Circuits (India) Ltd.	1.594	0.960	1.717
Piramal Healthcare Ltd.	1.163	1.027	1.201
Ranbaxy Laboratories Ltd.	1.111	0.995	1.1379
Sterling Biotech Ltd.	1.308	1.003	1.451
Sun Pharmaceutical Inds Ltd.	0.975	0.958	0.989

Industry norms as target level of efficiency

In financial analysis, the average performance of an industry is considered as the yardstick for performance evaluation of the firms belonging to that industry group. For calculating industry norm, any measure of central tendency, e.g. mean or median can be used. Following Robert Morris Associates and Dun & Bradstreet, mean values of each of the three indexes have been used as the industry norms for this study. One main advantages of using mean as the industry norm is that the existence of any extreme value cannot affect the industry average.

In this sector Dr.Reddy's Laboratories Ltd with beta value of .727 was the most successful firm in achieving industry efficiency but its ability to achieve industry norm of utilisation of current assets is very low($\beta=.165$). In utilisation of current assets for generation of sales Glaxo SmithKline($\beta=.783$)was most successful followed by Lupin Ltd($\beta=.674$). In the overall efficiency norm Biocon Ltd has the highest index of .760 followed by Ranbaxy Labs with Beta value of .495.

Table 2 - Individual Efficiency to achieve target Efficiency: Performance Index

Company	Performance Index		
	Constant	Beta	R ²
Healthcare			
Appolo Hospitals	-.024(-.260)	.387(1.111)	.150
Biocon Ltd	1.574(.392)	.458(1.362)	.210
Cipla Ltd	-.023(-.178)	-.131(-.351)	.017
Divis Labs	.516(.305)	.416(1.211)	.173
Dr.Reddys Labs	-2.201(-.555)	.727(2.801)	.529
Glaxosmithkline	.008(.062)	.278(.766)	.077
Lupin Ltd	.442(.321)	.473(1.420)	.224
Opto Circuits	-.341(-.442)	-.532(-1.664)	.284
Piramal Healthcare	.003(.028)	.277(.761)	.076
Ranbaxy Labs	.074(.583)	.686(2.494)	.470
Sterling Biotech	.033(.082)	.330(.923)	.109
Sun Pharma	.056(.544)	-.581(-1.887)	.337
Glen Mark Pharma	.123(.224)	.424(1.240)	.180

Figures in parentheses indicate t values

Table 3 - Individual Efficiency to achieve target Efficiency: Utilisation Index

Company	Utilisation Index		
	Constant	Beta	R ²
Healthcare			
Appolo Hospitals	-.044(-.685)	.266(.730)	.071
Biocon Ltd	.073(.242)	-.288(-.797)	.083
Cipla Ltd	-.002(-.044)	.622(2.101)	.387
Divis Labs	-.018(-.178)	.396(1.140)	.157
Dr.Reddys Labs	.009(.075)	.165(.443)	.027
Glaxosmithkline	-.016(-.225)	.783(3.334)	.614
Lupin Ltd	-.035(-.386)	.674(2.415)	.454
Opto Circuits	.027(.305)	.567(1.821)	.321
Piramal Healthcare	-.006(-.075)	.097(.259)	.009
Ranbaxy Labs	.040(.338)	.063(.167)	.004
Sterling Biotech	-.009(-.064)	.541(1.702)	.293
Sun Pharma	.059(.405)	.410(1.189)	.168
Glen Mark Pharma	.031(.449)	.519(1.605)	.269

Figures in parentheses indicate t values

Table 4 - Individual Efficiency to achieve target Efficiency: Efficiency Index

Company	Efficiency Index		
	Constant	Beta	R ²
Healthcare			
Appolo Hospitals	-.065(-.507)	.435(1.279)	.189
Biocon Ltd	3.635(.557)	.760(3.094)	.578
Cipla Ltd	-.038(-.201)	-.251(-.685)	.063
Divis Labs	.482(.181)	.389(1.118)	.152
Dr.Reddys Labs	-3.797(-.782)	.434(1.274)	.188
Glaxosmithkline	-.030(-.161)	.079(.209)	.006
Lupin Ltd	.195(.126)	.419(1.220)	.175
Opto Circuits	-.215(-.206)	-.439(-1.292)	.192
Piramal Healthcare	-.030(-.280)	-.069(-.183)	.005
Ranbaxy Labs	.108(.479)	.495(1.508)	.245
Sterling Biotech	.014(.021)	.281(.774)	.079
Sun Pharma	.078(.471)	-.707(-2.648)	.500
Glen Mark Pharma	.078(.130)	.319(.890)	.102

Figures in parentheses indicate t values

Thus, on the whole, scope for the improvement in the matter of managing either the individual components of current assets or the current assets as a whole for generating increased sales revenue is found. A careful attention to this would help the firms in enhancing their efficiency in working capital Management. In the context of the present highly competitive market situation, these scopes should be properly utilised.

Relationships between Efficiency and Profitability

The profitability of a business concern depends upon the manner in which its WC is managed. The inefficient management of WC not only reduces profitability but ultimately may also lead a concern to financial crisis. Every organization, irrespective of its profit orientation, size and nature of business, needs requisite amount of WC. The efficient WCM is the most crucial factor in maintaining survival, liquidity, solvency and profitability of the concerned business organization. Considering the indisputable importance of efficient WCM, much managerial effort is expended in bringing non-optimal levels of current assets and liabilities back toward optimal level, a level in which a balance is achieved between risk and efficiency. In this context, WCM efficiency has a special relevance and a thorough investigation regarding WC practice in the industries is of utmost importance.

Table 5 - Correlation between Efficiency Index and Profitability

Name	Efficiency Index And Income to Current Assets	Efficiency Index And Income To Avg Total Assets
Appolo Hospitals	.738*	-.156
Biocon Ltd	-.563	-.061
Cipla Ltd	.194	.015
Divis Labs	.140	.135
Dr.Reddys Labs	.789**	.638*
Glaxosmithkline	.126	-.025
Glenmark Pharma	.036	-.131
Lupin Ltd	.205	.154
Opto Circuits	.514	.072
Piramal Healthcare	.116	.371
Ranbaxy Labs	.241	.034
Sterling Biotech	.210	-.089
Sun Pharma	.217	-.356
Overall	.04	.72

*significant at 0.05 level(2 tailed test)

**significant at 0.01 level (2 tailed test)

The pooled data of all the firms of all the industrial sector under study show a positive correlation of 0.72 between Efficiency index & income to average total assets. This means that proper management and utilisation of current assets results in higher generation of income for the organisation leading to profitability of the firm. The relationship between Efficiency index and Income to current assets is to the extent of 0.04 only. This shows that even though efficient management of working capital does affect the profitability but there are other factors also besides working capital management that influence the profitability.

Conclusions

In the present analysis of working capital measures the efficiency of working capital management. Three index values comprising of performance of various components of current assets, the degree of utilisation of total current assets in generating sales and efficiency in managing current assets has been computed. Using industry mean as the target level of efficiency for each individual company, an evaluation of the speed of achieving that target level has been evaluated. The relationship between efficiency of working capital management with the profitability has been established by calculating correlation between efficiency index & Income to Current assets and Efficiency Index & Income to Average total assets.

From the present study it can be concluded that most of the firms under study have performed well as far as the performance of working capital, utilisation of current assets to generate sales and efficiency of working capital is concerned. Some of the firms have very high indexes. These extreme indexes arrive only for those firms who have substantially increased investment in their current assets in two subsequent financial years. Keeping larger current assets not doubt increases the liquidity of the firms but it has been observed that these firms have been able to utilise the increased current assets in generation of sales in those years. This leads to lower efficiency index. Thereby, such firms need to put in efforts to utilise the current assets properly to as achieve effective management of working capital. In the matter of achieving the target level(industry norm) of efficiency by firms, it has been observed that most of the firms have the ability to achieve the targets. Thus, on the whole, scope for the improvement in the matter of managing either the individual components of current assets or the current assets as a whole for generating increased sales revenue is found. A careful attention to this would help the firms in enhancing their efficiency in working capital Management. In the context of the present highly competitive market situation, these scopes should be properly utilised.

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