



Working Capital Management in Aluminium Sector: A Case Study of NALCO

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Abstract: Working capital management is an integral part of overall corporate management. To a financial manager, a working capital sphere throws a welcome challenge and opportunity. In view of the multiplicity of factors exerting varied degrees of influence on working capital studies, a management has to be dynamic to the internal, external and environmental developments and constantly plan and review its working needs and strategy. Working capital management has been looked upon as the driving seat of a financial manager. Moves and actions in the operating fields of production procurement, marketing and services are ultimately interpreted and viewed in financial terms; hence the preoccupation with the financial implications of the management of working capital and its segments. In this research paper the authors tries to highlights the working capital management system at NALCO an public sector company.

Keywords: NALCO, Working capital Management, Corporate Management

INTRODUCTION:

The study of working capital management occupies an important place in the field of financial management without which it is indispensable and inevitable to continue the day-to-day operations of the business and hence it is considered as the life blood of any business. The investment decision of any business is concerned with the investment in the fixed assets as well as in the currents. The amount of finance required for fixed assets and current assets are called as fixed capital and working capital respectively. Fixed capital is required for the establishment of the business and helps in the revenue generation process where as working capital is required to utilise the fixed assets. Thus, working capital management involves decisions relating to current assets including decisions about how these assets are to be financed (Majumdar, 1996). It is very difficult to find a business concern which does not require any amount of working capital. The knowledge and

understanding of the working capital management practices plays a crucial role for large companies. These are presently not enough and many firms have gone into liquidation over the years as a result of running a deficit cash flow from operations.

Fact shows that relatively, only fraction of small and medium companies employ basic working capital management practices and they show a higher prevalence of subjective working capital decision-making. In line to the submissions of various researchers, the existence of 'finance gap' in the free enterprise economic system is one of the basic causes for the liquidation of small business. The focus of working capital management (WCM) is sustenance of the optimum balance of each of the working capital component. According to Peel and Wilson (1996), smaller company should embrace formal WCM practice with the hope of minimising the probability of business failure, as well as to enhance business performance. Cash deterioration affects the company's potential to finance

operation, reinvest and meet up with capital requirements and payments. It implies that whenever working capital drops too low, such business may be at risk; that is why it is very necessary for company to have effective management of working capital so as to keep its economy alive.

The principal focus of this work is to investigate the practice of working capital performance and factors responsible for inefficient working capital in large companies with special reference to NALCO and to explore means of improving the management of working capital in small and medium firms.

BACKGROUND AND PROBLEM DISCUSSION:

The efficient management of working capital is very vital for a business survival. This is premised on the fact having too much working capital signifies inefficiency, whereas too little cash at hand signifies that the survival of business is shaky.

PURPOSE OF THE STUDY:

The purpose of this research is to study the working capital management in the small and medium scale businesses, using National Aluminium Company as a case study, so as to establish factors influencing working capital performance; examine how cash management, inventory management and trade credit management affects working capital management; company effectiveness in converting working capital to ready money; how working capital management impacts on the problem of slow development and to offer recommendations on possible ways of improving working capital management.

REVIEW OF LITERATURES:

The efficient management of working capital is very vital for an organisation. This is premised on the fact having too much working capital signifies inefficiency, whereas too little cash at hand signifies that the survival of business is shaky. The concept of working capital management is all about the commercial and financial parts of credit, inventory, marketing, purchasing, royalty and investment policy. The greater the profit margin, the lesser is likely to be the level of working capital tied up in creating and selling titles. Many researchers have studied working capital form in different views and in different environment. Though there is a large number of studies on working capital management, so the following are the reviews have been studied for our research.

A study conducted by Singh (1988), on Managing Working Capital by Strategic Choice is innovative one which effectively requires an understanding of the processes underlying the cash cycle. Managers project and evaluate working capital needs using three different approaches — industry norms, economic model, and strategic choice. Singh illustrates the processes underlying working capital flow and discusses the problems in each of the three approaches to managing working capital. Some companies have shifted to using the strategic choice approach to gain competitive advantage. To solve the working capital related problem he has targeted the following objectives: to know the risk in WCM i.e. Liquidity Risk, Risk of opportunity Loss, Delay centers.

As submitted by Peel et al (1996) that for small companies to manage and control their working capital effectively; both internal and external working capital drivers must be taken into consideration, and also consideration of how sensitive such drivers are to changes in the business or market. Thus, a firm must be able to minimise

inventory, control supply and apply payment pressure on customers. Due to inefficient management of working capital, many corporations lose billions annually. A good example is the study published by REL Consultancy Group on IT companies in 2002. A problem that is exacerbated when the economy worsens as it did during 2001. REL examined operational data from 90 of the largest publicly traded IT companies in the United States, with annual minimum revenue of \$450 million. It took the companies an average of 69 days to convert sales into cash in 2001, nine days longer than the average in 2000, a lag that cost \$10 billion in lost cash flow, according to REL. This is to say, vendors took longer to collect on their sales.

As pointed out by Shin and Soenen (1998), a firm's working capital results from the time lag between the expenditure for the purchase of raw materials and the collection from sale of finished goods. According to their submission, this entails various areas of company's operational management that includes receivables, inventories management, management and use of trade credit, etc.

Harris (2005) submitted that for firms to minimise risk, effectively prepare for uncertainty and improve on overall performance, the core working capital drivers and the appropriate level of working capital must be understood.

The paper of Padachi (2006), examines the trends in working capital management and its impact on firms' performance.. The corporate profitability is investigated for a sample of 58 Small manufacturing firms, using panel data analysis for the period 1998 – 2003. The regression result shows that high investment in inventories and receivables is associated with lower profitability. The dependent variable, return on total assets is used as a measure of profitability. The independent

variables used in the analysis are inventories days, accounts receivables days, accounts payable days and cash conversion cycle. A strong significant relationship between working capital management & profitability has been found in previous empirical work. The findings also reveal an increasing trend in short-term component of working capital financing.

Bhunja(2007) carried out a study on liquidity management of public sector iron and steel enterprises in India. Two out of nine public sector enterprises in the field of iron and steel such as Steel Authority of India Limited and Indian Iron and Steel Company Ltd were selected for the study. Considering the study period of 12 years from 1991-92 to 2002-03 the study concluded that both the companies have a poor liquidity position and working capital position. Inefficiency in receivable was found in case of both the companies.

The study of Narender, Menon and Shwetha (2009) focuses on the Factors Determining Working Capital Management in Cement Industry. This paper investigates the use of net liquid balance (NLB) and working capital requirement (WCR) as measures of investing Working Capital Management of the industry. The authors studied the effect of dependent variable i.e. WCR and NLB that are influenced significantly by the size, debt-equity ratio, business indicator, firm performance, growth of the firm, operating cash flow. A sample of 50 companies has been considered for the purpose of the study. The data consist of companies in cement industry for period of ten years commencing from 1995 to 2006. The results of the study show that NLB is affected by two independent factors such as size and debt-equity ratio. On the one hand the WCR is considered as dependent variable where as the independent factors that impact significantly are size of the firm,

operating cash flow, business indicator, growth of the firm. From the study it can be concluded that only the size of the firm affects both of the NLB and WCR in the company's working Capital Management.

Chakraborty (2008) carried out a study on the relationship between working capital and profitability in the Indian pharmaceutical industry. The sample size of 25 companies belonging to private sector has been selected from 1996-97 to 2007-08 for the purpose of the study. The variables such as current ratio, inventory turnover ratio, and debtor turnover ratio were selected as the components of the working capital whereas profit before interest and tax margin and return on capital employed (ROCE) were selected as the measure of profitability.

Ramudu(2009) conducted an empirical study on Working Capital Structure and Liquidity position of Indian Commercial Vehicles Industry. As working capital plays a key role in the process of wealth maximization of shareholders, so the author attempted to study the effectiveness of structuring the working capital. The data relating to six variables such as current ratio, quick ratio, ratio of current ratio to total sales, current assets turnover ratio, and working capital turnover ratio, for a period of ten years (1995-2004) were used for the purpose of the analysis. Applying statistical tools like average, correlation and one-way ANOVA in the study, he concluded that inventories formed the highest percentage in the working capital structure followed by trade receivables and loans and advances whereas cash and bank balances formed very negligible part. Further, the study revealed the variation between current assets turnover ratio and working capital turnover ratio was very high across the industry, which in turn, implies the sample

companies achieved higher sales with less working capital.

Bardia and Kastia(2010) carried out a comparative study with respect to liquidity management in two leading pharmaceuticals of India, Torrent Pharma and Cipla. It covers a period of nine years (2000-01 to 2008-09) and uses six different liquidity ratios such as current ratio, quick ratio, inventory turnover ratio, debtor turnover ratio, current assets turnover ratio, working capital turnover ratio. The study result reveals that both the companies are following more or less same working capital practice. However credit and collection policy of Torrent is more effective than Cipla.

A study conducted by Chawala, Harkwat and Khairnar (2010), on Working capital management and its impact on profitability of the firm is a comprehensive one in the field of working capital management. In this study, they have selected a sample of 3 firms from petrochemical industry for a period of 5 years from 2004-2009. They have studied the effect of different variable of working capital management including the average collection period, inventory turnover in days, average payment period, cash conversion cycle (CCC) and current ratio on the gross operating profitability of the firms. Person's correlation and linear regression t-test are used for analysis. The results show that there is a strong negative relationship between variables of the working capital management (WCM) and profitability of the firm. It means that as the cash conversion cycle increases it will lead to decreasing profitability of the firm, and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. They found that there is a significant negative relationship between liquidity and profitability. They also found that there is a negative relationship

between net working capital of the firm and its profitability.

Negi, Sankpal, Chakraborty and Mathur (2010) carried out a study on Working Capital Management and firm's performance considering sample size of fifty manufacturing companies. The period of study was for five years i.e. from 2003-2008. The study was carried out by developing a regression model where operating profit margin is taken as dependent variable where as asset turnover ratio debt to total asset ratio current asset to total asset ratio, trade debtor to current asset ratio, current liability to total asset ratio, no. of inventory days, no. of days for accounts payable, current asset to current liabilities are considered as independent variable. The findings of the study indicate that current asset to total asset, total debtors to total asset and inventory days are directly related variables with working capital management and have significantly negative effects on firm profitability.

Agarwal (2011) carried out an empirical study on the management of working capital in Maruti Suzuki India Limited. Considering the data for a period of 9 years, the author focuses on the relationship between liquidity and profitability and risk. The study result discloses that there is no relation between profitability and liquidity while profitability has a positive relationship with risk. This indicates that the firm gives little importance to the liquidity issues related with working capital management.

Jain, Singh and Kapoor (2011) carried out a study on the working capital management practices in Reliance Industries Limited. Covering the period of ten years i.e. from 2001-2009 they sought to analyse the significance of debtor, cash, loans & advances, inventory and their Turnover Ratios in

the management of working capital. The study also focuses on the practice of zero working capital in Reliance Industries. The study result concluded that RIL has maintained satisfactory liquidity ratio, and at the same time, the components of current assets have not occupied substantial share, vis-a-vis, its total sales which may be an indication of its efficiency in managing its working capital.

OBJECTIVES OF THE STUDY

The problems and origins of the failure of the small, medium and large businesses have drawn a great deal of research. But in all, the central issue has remained finance. Meanwhile, finance as a factor has more often than not been viewed from the sourcing perspective. The issue of complexity stumbled upon by the small and medium businesses why sourcing for its medium and long term finance needs in the face of competition from the large business sector is the central focus of most researches, and thus is attracting the attention of more policy makers. Hence, it is imperative to look at other areas of consequence to the success or failure of the small, medium-scale businesses in general and large-scale businesses particular. According to Weston et al (1977), the management of working capital which represents more than half the total assets of a business is one of such areas. These objectives will be achieved through:

- The review of extant literature on working capital and its management
- To know the net working capital position of Nalco.
- To understand the impact of various component of current assets and current liabilities in working capital management of Nalco.

- To find out the significance of working capital management in profitability.
- To determine the relationship between working capital to sales
- Establish how cash management, inventory management and trade credit management affect working capital management.
- Establish how working capital management impacts on the development of the industry.

RESEARCH METHODOLOGY

This project is carried out by considering NALCO as the sample unit which is the largest aluminium producer in India. The report is completely based on the data collected from the secondary source which includes Annual Reports of the company. Efforts are also made to collect the data from Capitaline database and Moneycontrol.com database. Company annual reports are also used for collection of data. In order to accomplish the present study the data have been taken for a period of ten years i.e., from 2001-02 to 2010-11. At the first stage, the collected data is processed to make it suitable for analysis and then statistical tools such as Mean, Standard Deviation, and Correlation analysis is used to get findings from the study. The data were processed and analysed using MS Excel.

DATA ANALYSIS AND INTERPRETATION

Analysis of Current Ratio

Table-1 Current Ratio

Year	CA	CL	CR
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2001-02	1,138.45	719.2	1.582939377
2002-03	1,006.50	1,011.60	0.994958482
2003-04	990.51	864.28	1.146052205
2004-05	1811.04	806.39	2.245861184
2005-06	3297.08	940.15	3.506972292
2006-07	4974.08	1218.61	4.08176529
2007-08	5041.33	1540.88	3.271721354
2008-09	4560.41	1933.24	2.358946639
2009-10	5209.54	2219.93	2.346713635
2010-11	6045.17	2740.95	2.205501742
Mean			2.37414322
SD			1.004830693

Interpretation: The current ratio is the most frequent and most general test of liquidity denoting the cushion available for the current liabilities out of the current assets. The ratio was lowest in 2002-03 at 0.99 app. and highest in 2006-07 at 4.08 during the period under study. The mean value of current ratio is 2.37. It reveals that the industry maintain Re. 2.37 (One rupee twenty nine paise only) of current assets for every Re. 1.00 (Rupee one only) for current liabilities which is equal with banker's liquidity standard at 2:1. In the statistical value the standard deviation (S.D.) of current ratio

is 1 indicates insignificant variation in ratio during study period and the mean value of the ratio is mostly representing the overall liquidity position of the industry.

Analysis of Liquid Ratio:

$$\text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

Table-2 Liquid Ratio

Year	Liquid Assets	Current Liability	Quick Ratio
2001-02	654.13	719.2	0.909524
2002-03	517.25	1,011.60	0.511319
2003-04	510.03	864.28	0.590121
2004-05	1,281.98	806.39	1.589777
2005-06	2,706.30	940.15	2.878583
2006-07	4339.12	1218.61	3.560713
2007-08	4,354.68	1540.88	2.826099
2008-09	3,686.91	1933.24	1.907114
2009-10	4264.62	2219.93	1.921061
2010-11	4,986.70	2740.95	1.819333
Mean			1.851364405

SD			1.015332296
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Interpretation: Liquid ratio is more rigorous test of the liquidity which excludes inventories from the list of current assets for the unit. It ranges between 0.51 in 2002-03 and 3.56 in 2006-07 during the period of study. The mean value of liquid ratio is found at 1.85. In the statistical value the standard deviation (S.D.) is 1.01. The liquidity ratio position is observed to be unsatisfactory for all the years when viewed against the banker’s standard 1:1. It is clear that the liquid ratio fluctuated every year. It is further clear that the industry is not having better liquidity and credibility during the earlier part of the study of pushing the level of the ratio reared to unity.

Analysis of Working Capital Turnover Ratio

Table-3 Working Capital Turnover Ratio

Year	Sales	WC	Sales/WC
2001-02	2,225.33	1,138.45	1.954702
2002-03	2,563.79	1,006.50	2.547233
2003-04	3,125.92	990.51	3.155869
2004-05	4102.31	1811.04	2.265168
2005-06	4846.07	3297.08	1.469807
2006-07	5943.24	4974.08	1.194842
2007-08	4990.32	5041.33	0.989882

2008-09	5049.52	4560.41	1.107251
2009-10	5055.66	5209.64	0.970443
2010-11	5958.98	6045.17	0.985742
Mean			1.664093906
SD			0.775669166

Interpretation: The Gross Working Capital Turnover Ratio indicates the efficiency in the utilization of current assets. Normally higher the ratio, more efficient is the current assets utilization position and the vice-versa. It is visualised from the Table-3 that the mean value of the gross working capital turnover at 1.66 times. In the statistical value the standard deviation (S.D.) is 0.77. Low velocity of gross working capital of the unit clearly depicts less efficient utilization of current assets during the period of study.

Analysis of Current Assets to Fixed Assets

Current assets to Fixed assets =

$\frac{\text{Current Assets}}{\text{Fixed Assets}} \times 100$

Fixed Assets

Table-4 Current Assets to Fixed Assets

Year	CA	FA	CA/FA
2001-02	1,138.45	2,889.62	0.393979
2002-03	1,006.50	3,712.95	0.271078

2003-04	990.51	3,903.48	0.25375
2004-05	1811.04	4139	0.437555
2005-06	3297.08	3945.31	0.835696
2006-07	4974.08	3712.08	1.339971
2007-08	5041.33	3531.81	1.427407
2008-09	4560.41	4031.54	1.131183
2009-10	5209.54	4836.31	1.077172
2010-11	6045.17	5493.53	1.100416
Mean			0.826820884
SD			0.450975698

Interpretation: The ratio of current assets to fixed assets also provides a measure of liquidity of the industry. The trade off between risk and profitability is measured by varying the current assets and keeping constant the volume of fixed assets. It is cleared from above Table-4 the mean value of the total ratio of gross working capital to fixed assets is found at 82.68 percent. The ratio varies between 25.37 percent in the year 2003-04 and 142.74 percent in the year 2007-08 during the period of study. The investment in current assets is observed to be more the investments in fixed assets of the unit indicating the dominance of current assets in the total assets structure. In the statistical value the standard deviation (S.D.) is 45.09 percent.

Analysis of Current Assets to Total Assets

Gross working capital to Total Assets =

$\frac{\text{Current Assets}}{\text{Total Assets}} \times 100$

Total Assets

Table-5 Current Assets to Total Assets

Year	CA	TA	CA to TA
2001-02	1,138.45	4,788.69	0.237737
2002-03	1,006.50	4,634.48	0.217176
2003-04	990.51	4,411.06	0.224551
2004-05	1811.04	4697.81	0.385507
2005-06	3297.08	5892.67	0.559522
2006-07	4974.08	7695.22	0.646386
2007-08	5041.33	8874.45	0.568072
2008-09	4560.41	9769.81	0.466786
2009-10	5209.54	10,404.19	0.500716
2010-11	6045.17	11,179.49	0.540738
Mean			0.434719
SD			0.158992

Interpretation: Table- 5 indicates the Gross Working Capital to Total Assets of the unit has a mean value is 25.72. The ratio is, however, within 19.61 percent and 29.65 percent during the period under study. The standard deviation (S. D.) is at 0.15. The standard deviation value indicates that the ratio exhibits consistency during the period under study. The mean value of the ratio varies very insignificant. The unit has a lower volume of current assets in the structure of total assets.

Relation between Liquidity and Profitability

Table-6 Correlation Matrix

	ROCE	CR
ROCE	1	
CR	0.472026	1

Interpretation: To ascertain the direction of relationship between liquidity and profitability, Correlation analysis is used. Return on Capital Employed (ROCE) and Current Ratio (CR) are used as proxy for profitability and liquidity respectively. It can be inferred from the above table that ROCE has a positive relation with CR.

LIMITATIONS

In the course of the research certain problems were encountered which will likely have effect on the work. One of such constraint is time. Since this study is based on one company only, the findings might not be representative of what obtains in the whole sector. The study is based on the data collected from the secondary source. So it contains all the inherent limitations of the secondary data. Therefore having used the literature review as the

only control the result of the study is acceptable only to the extent the literature review is acceptable. Finally, the conclusions and recommendations are based on the data analysed, hence they are valid only to the extent of the validity of the data.

CONCLUSION:

The findings corroborate the postulation of Weston et al that a company's investment in working capital is a substantial percentage of its total investment. In case of NALCO, it is as high as 54 percent in the year 2010-11. An inefficient and ineffective management of this investment will result in slow pace of development and ultimately to the business failure. However, it is found from the study that the Company has tried to improve the cash position during the period of time and simultaneously improving the debtor position. The financial statements as interpreted reinforce the validity of this result. The liquidity ratios are high; the collection period is short; and the cash cycle is not quite expansive. This makes it possible to sustain sufficient cash flow for the smooth running of the business.

The management of working capital impacts on liquidity, investment portfolio and profitability. All these three factors are decisive in the growth or failure of a business. Hence, good performances in working capital management affects these decisive factors favourably and thus, contribute to growth and success of the business.

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