CHAPTER 9

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9.1 INTRODUCTION

9.1.1. In a developing economy like India, management of working capital holds the key to internal finance for capital formation. Land and building, plant and equipment and many other such fixed assets are no doubt needed to provide a strong structural base, but working capital is needed to make the fixed assets more effective and turnout what is most needed by the society. The mode of administration of working capital determines to a very large extent the success or failure of overall operations of an enterprise. Many times, shortage of working capital is the main cause to the failure of a business concern. So proper management of working capital is vital for the success of an enterprise.

9.1.2. Working capital management is one of the most important aspects of overall financial management. A firm must maintain a satisfactory level of working capital. Current assets should be large enough to cover current liabilities in order to ensure a margin of safety. Management of working capital involves deciding upon the amount and composition of current assets and how to finance these assets. In fact, the management of working capital is similar to the management of fixed assets in the sense of their effects on its profitability and risk. However, fixed assets management and working capital management differs in certain respects. Firstly, for managing fixed assets, time is very important.
Secondly, a large holding of current assets, especially cash, strengthen the liquidity position, but also reduces the overall profitability. Thirdly, though the levels of fixed as well as current assets depend upon expected sales, only current assets can be adjusted with sales fluctuation in the short-run.

9.1.3. A study of working capital is of major importance to internal analysts because of its close relationship with day-to-day operations of the business. The goal of working capital management is to minimise the cost of working capital while maximising the firm's profit. Besides this, the presence of an adequate working capital also helps a firm in maintaining and earning good reputation in business world. Working capital is like the heart of a business. If it becomes weak, the business can hardly prosper and survive. Just as the heart gets blood and circulates in the body, working capital funds are generated and are circulated in the business. Its proper circulation provides to the business the right amount of cash to maintain regular flow of its operation. As and when this circulation stops, the business becomes lifeless.

9.2 METHODOLOGY

9.2.1. In order to evaluate the efficiency of management in handling the working capital of the Aluminium Industry, we have adopted three major techniques of analysis: trend analysis, ratio
analysis and funds flow analysis. In the trend analysis, we have studied the year-wise growth trend of gross working capital, net working capital and components of current assets like inventory, cash and bank balances, sundry debtors or receivables and miscellaneous current assets.

9.2.2. The ratio analysis has helped us in evaluating the overall management of the working capital elements. The relevant ratios for working capital management are broadly divided into three categories: efficiency ratios, liquidity ratios and structural ratios. The efficiency ratios indicate the efficiency with which overall working capital as well as its various elements are being used. In this category, we have used working capital turnover ratio, current assets turnover ratio, inventory turnover ratio, cash turnover ratio, and receivables turnover ratio. Liquidity ratios indicate the extent to which current assets are liquid to meet the short-term obligations of the firm. These ratios include current ratio, acid-test ratio or quick ratio and cash ratio. The third set of ratio is used to study the structural health of working capital in the business. Working capital and its various elements should form a reasonable balance in the asset structure as well as financial structure. Most important ratios used are: current assets to total assets ratio, cash to sales ratio, cash to working capital ratios, current liabilities to total assets ratio, inventory to total assets ratio, inventory to capital employed ratio. Use of a single ratio may not be able to tell much to management. But taken together, these ratios indicate the areas of concern in the use of working capital that may either need further investigation or corrective action.
9.2.3. Fund flow analysis is the most important tool available to management practitioners to analyse liquidity position of the firm. In this analysis, we have studied the inflow and outflow of the funds that are experienced by the industry during the period of the study. The sources of inflow of funds have been categorised as short-term and long-term as well as external and internal. Then we have matched each of the sources of funds to their ultimate use. From this analysis, we found:

i) How much money invested in net working capital?

ii) How much change has taken place in net working capital over the period?

iii) How much funds are provided by business operations?

iv) The reasonability of the balance between funds from operations and other long-term sources.

v) The reasonability of the ratio between the sources of short-term finance and long-term finance.

9.3 LITERATURE OF WORKING CAPITAL MANAGEMENT

9.3.1 The literature of working capital management includes the concept, need, definition, determinants and the financial mix of working capital, level of financing of working capital along with the sources and uses of funds.
9.3.2 The concept of working capital has been a matter of great controversy among the financial wizards. Broadly speaking, different views on working capital can be categorised into two groups. Firstly, the gross concept of working capital, which refers to sum total of all current assets of the enterprise employed in the business process. Secondly, the net concept of working capital, which represents excess of current assets over current liabilities. It highlights the character of sources from which the funds have been procured to support that portion of current assets which is excess of current liabilities. In other words, it shows the sources of financing working capital needs.

9.3.3 The need for working capital cannot be overemphasised. Every business needs some amount of working capital. The need for working capital arises due to the time gap between time of production and realisation of cash from sales. There is an operating cycle involved in the sales and realisation of sales. There is some time gap in purchase of raw materials and production, production and sales, and sales and realization of cash. Thus, working capital is needed for the purchase of raw materials, components and spares, payment wages and salaries, meeting day-to-day expenses and overhead cost, such as fuel, power and office expenses etc., to meet the selling expenses like packaging and advertising etc., to provide credit facilities to the customers and to maintain the inventories of raw materials, work-in-progress, stores and spares and finished stocks.
9.3.4 The magnitude of working capital requirements and type of funds for working capital are determined by nature and character of business, size or scale of business, production policy, length of product cycle, seasonal variations, working capital cycle, credit policy, earning capacity and dividend policy, changes in price level, depreciation policy, production policy, etc.

9.3.5 Current assets and current liabilities are two components of working capital. Current assets include cash in hand and at bank, marketable securities and temporary investments, investments in deferred accounts and notes receivables, bills receivables, inventories, sundry debtors, prepaid expenses and accrued incomes, etc. Current liabilities include sundry creditors, bill payables, outstanding expenses, short-term loans and provision for taxation, etc.

9.3.6 Broadly speaking, there are two sources of funds, viz., long-term and short-term. Long-term sources include equity share capital, preference share capital, retained earnings, debenture capital and long-term loans from financial institutes. Short-term sources include trade credit, bank overdraft, short-term loans, etc.

9.3.7 The planning of working capital has two parts: the sources and the uses. The sources of the working capital are net
gains from operation, trade creditors, short-term bank loans and to some extent long-term funds. As per the suggestions of Chore Committee (the norm of lending recommended), a part of current assets should be financed by trade credit and other current liabilities. The remaining part of the current assets should be partly financed by the owner's fund and long-term borrowing and partly by the short-term bank credit.

9.4 TESTING OF HYPOTHESES

9.4.1. During the course of this study, a group of hypotheses has been formulated on the basis of theories of financial management and past studies. These hypotheses were tested with the analysis of a group of aluminium companies. The findings are enumerated here under.

Hypothesis 1:
Investment in current assets is generally made on regular basis in the liberalisation era.

9.4.2. This hypothesis was examined by using gross working capital statement analysis of a group of aluminium companies. From the statement, we find that the investment in current assets was increasing regularly during entire period of the study. The amount of gross working capital in the year 1991-92 was Rs
1769.3 crores while it increased to Rs 4343.9 crores in the year 2002-03 (Table 6.1). It clearly indicates that the group of companies invest their funds in current assets regularly. Thus, this analysis finds the hypothesis is valid for the Aluminium Industry of India.

Hypothesis 2:

Inventories occupies a major share in the constituent of the working capital in the Aluminium Industry in the post liberalisation era.

9.4.3. The hypothesis was tested for the group of aluminium companies. The current assets of the companies have got various components, such as inventories, loans & advances, sundry debtors, cash and bank balances and misc. current assets. In this case, the inventories constituted about 28.5 percent of the current assets as compared to 9.5 percent, 20.8 percent 41.2 percent respectively for cash and bank balances, sundry debtors and misc. current assets for the period of study (Table 7.3). Although miscellaneous current assets occupies 41.2 percent, inventory was the single largest component of current assets. Therefore, we conclude that, this hypothesis holds good for the group of companies during the period of study.
Hypothesis 3:

Working capital generally grows with increase in current assets and sales, and decrease in current liabilities.

9.4.4. This hypothesis was examined through the statistical tool of correlation analysis between working capital and current assets and between working capital and sales. The coefficient of correlation between working capital and current assets was +0.99 and also between working capital and sales was +0.99. This is statistically significant at 5 percent level of significance. Again, the coefficient of correlation between working capital and current liabilities was -0.98. This is also statistically significant at 5 percent level of significance. Thus, the hypotheses holds good for the group of companies.

Hypothesis 4:

Current ratio and quick ratio of the industry generally be 2:1 and 1:2 respectively.

9.4.5. This hypothesis was tested for the industry with the help of technique ratio analysis. In the industry the average current ratio was 3.03:1 (Table 7.4) and that of quick ratio was 2.11:1 (Table 7.5) during the period of study. Thus, from the above observations, it can be said that this hypothesis does not hold good for the industry. For this, the Industry should try to manage its quick assets and current liabilities more efficiently and profitably.
Hypothesis 5:

Higher inventory turnover rate normally reduce the need for working capital in the industry.

9.4.6 This hypothesis was tested for the industry with the help of funds flow analysis and ratio analysis. The higher the inventory rotates in a business to generate sales, the lesser will be the requirement of the working capital and vice versa. In other words, the increasing inventory turnover rate decreases the volume of working capital. However the inventory turnover ratio in case of the Alumirium Industry was 4.21 times in the year 1991-92 which increased to 5.56 times in the year 2002-03 (Table 8.5). Whereas the average net working capital volume of the industry was Rs.1129.9 crores in the year 1991-92 and it increase to Rs.2282.1 crores in the year 2002-03 (Table 7.2). Thus, this hypothesis does not hold good for the industry during the period of our study.

9.5 FINDINGS OF THE STUDY

9.5.1 The findings of the study are presented as follows.

The gross working capital position of Aluminium Industry of India was better in the liberalisation era. It shows an increasing trend except from the year 1998-99 to 2000-01 (Table 7.1).
The net working capital position of Aluminum Industry of India was better throughout the study period. It also shows an increasing trend except from the year 1998-99 to 2000-01 (Table 7.2).

The gross working capital constitutes four elements i.e., Inventory, Cash & Bank balances, Debtors or Receivables and Misc. Current assets. The proportion of inventory is maximum of 40.4 percent in the year 2002-03 and minimum of 24.2 percent in the year 1997-98. The proportion of cash and bank balances is maximum (18.1 percent) in the year 2002-03 and minimum (2.6 percent) in the year 1995-96. The debtors and receivables is maximum of 30.2 percent in the year of 1992-93 and minimum of 9.0 percent in the year 2002-03 whereas the miscellaneous current assets is maximum of 46.6 percent in the year of 1998-99 and minimum of 27.1 percent in the year 1992-93. On an average inventory, cash and bank balances, sundry debtors and miscellaneous current assets constitute 28.5, 9.5, 20.8, 41.2 percent respectively of the total current assets (Table 7.3).

The current ratio of Aluminium Industry shows a fluctuating trend. The ratio was maximum of 4.17:1 in the year 1997-98 and minimum of 3.11:1 in the year 2000-03. The average of the ratio for the period of study was 3.03:1.
The ratio was above the standards of 2:1 throughout the period of our study, indicating the unnecessary locking of current assets and its inefficient management (Table 7.4).

The analysis of quick ratio of Aluminium Industry also shows a fluctuating trend. The ratio was always more than the rule of thumb of 1:1. It was maximum of 3.16:1 in the year 1997-1998 and minimum of 1.26:1 in the year 2002-03 and the average for the period was 2.11:1. Therefore, we conclude that through the liquid position of the industry was satisfactory but it has hampered its profitability (Table 7.5).

Working capital turnover ratio of Aluminium Industry shows a fluctuating trend. The highest working capital turnover ratio was 3.92 in the year 2000-01 and the lowest was 1.79:1 in 1997-98. The average working capital turnover ratio for the period was 2.33. Even though, there is no rule of thumb for this ratio, each industry develops its own standard. The table 7.6 depicts that the net working capital relates on an average 7/3 times during the period of our study.

The current assets turnover ratio is maximum of 2.25:1 in the year 2002-03 whereas it was minimum 1.34:1 in the year 1993-94 and 1994-95. Average current assets turnover ratio during the study period was 1.59:1, which indicates the
the industry’s inefficiency as the sale is only 1.6 times of current assets investment *(Table 7.7)*.

- Currents assets to total assets ratio is maximum of 36 percent in the year of 1996-97 and 1997-98 and minimum of 23 percent in the years of 2000-01 and 2001-02. The average ratio for the period of our study is 29 percent. We have seen the ratio of current assets to total assets were very close to the average ratio for the period. It indicates that current assets constitutes almost 29 percent of the total assets *(Table 7.8)*.

- The ratio of current liabilities to total assets of Aluminium Industry of India for study period varied between 7.74 percent to 11.31 percent. The average of this ratio for the period is 9.6 percent. It shows about 9.6 percent of the total assets are financed by current liabilities *(Table 7.9)*.

- Funds from operation for the major source and investment in fixed assets is the major application funds for Aluminium Industry of India *(Table 7.10)*.

- The growth of the inventory in Aluminium Industry shows an increasing trend except in the year 2000-01. The highest investment in inventory of the industry was Rs 1754.9 crores in 2002-2003 and the lowest in the year 1991-92, i.e., 573.9 crores *(Table 8.1)*.
The ratio of inventory to current assets of Aluminium Industry shows that the size of inventory is about 28.5 percent of its current assets throughout the period. The highest ratio was in the year 2002-03 was (40.4 percent), whereas the lowest was 20.1 percent in the year 2000-01. So, we can say that inventory occupies more than one-fourth of total current assets (Table 7.3).

The ratio of inventory to total assets also shows a fluctuating trend. The highest ratio of inventory to total assets was 9.85 in the year 1996-97 whereas the lowest was 7.47 in the year 2000-01. The average of this ratio for the period was 8.81. It shows a good sign for the industry, because with the sufficient volume of inventory, the concern may not face any problem in continuing its transactions (Table 8.2).

The ratio of inventory to net working capital of Aluminium Industry of India was in fluctuating trend during the period of study. In the year 2002-03, the ratio was maximum of 76.9 percent whereas in the year 1997-98, the ratio was minimum of 31.86 percent. It indicates that percentage of inventory in net working capital is very high. In other words, other constituent of current assets like cash, etc. are insufficient, due to which, the industry may face difficulties in future (Table 8.3).
The ratio of inventory to capital employed shows a fluctuating trend during the period of study. In the year 2002-03, the ratio was 11.7 percent, which was maximum and in the year 2000-01, the ratio was minimum of 8.32 percent. The average ratio for the period was 9.82 percent (Table 8.4).

Inventory turnover ratio reveals an increasing trend. The highest inventory turnover ratio was 6.56 times in the year 2000-01 whereas the lowest is 4.21 times in 1991-92. The average ratio for the period of study was 5.30 times. The inventory conversion period is the highest in the year 1991-92, i.e., 86.7 days whereas the lowest in the year 2000-01 was 55.6 days taking the number of days in a year as 365. The average conversion period was 68.8 days. We conclude from this ratio and conversion period that inventory management is not satisfactory in Aluminium Industry of India, because it takes more than two months to dispose its average inventory. However, the industry's inventory management became good to better (Table 8.5).

The growth of sundry debtors or receivable of Aluminium Industry shows a fluctuating trend. The highest sundry debtors or receivables of the Industry was Rs.806.3 crores in 1997-98 and the lowest of Rs. 484.6 crores in 1991-92. The average growth index of sundry debtors is 133 during the period of study (Table 8.6).
The ratio of sundry debtors/receivables to current assets reveals a fluctuating trend, which is acceptable, but does not follow the credit policy properly. The highest ratio was 30.18 in 1992-93 and lowest was 9.0 in 2002-03.

The debtor's turnover ratio of the industry has a fluctuating trend throughout the period of study. The debtor's turnover ratio is the highest in the year 2002-03, i.e., 12.38 times and the lowest in 1992-93, i.e., 4.74 times. The average debtors turnover ratio of the industry was 7.08 (Table 8.7).

The average collection period was highest in the year 1992-93, i.e., 77 days and the lowest was 29.5 days in the year 2002-03 taking the number of working days as 365. This implies that the Industry is following a liberal credit policy for debtors and we conclude that its liquidity position is not at all satisfactory, because it takes on an average more than fifty days to collect dues from its debtors (Table 8.7).

The ratio of accounts receivable to sales is used for evaluating the efficiency of granting credit and collecting past due accounts. The average ratio for the period was 0.14. In the year, 1992-93, the ratio was maximum of 0.21 and in the year 2002-03 was minimum of 0.08 (Table 8.8).

The ratio of accounts receivable to net working capital indicates the steps taken by the industry for liberalising the credit
policy to customers. This ratio was maximum of 46.64 percent in 1992-93 as against the minimum of 26.31 percent in 1994-95. The average ratio for the period was 33.94 percent (Table 8.9).

The growth trend of cash and bank balances of the industry shows a fluctuating one. The growth trend of cash and bank balances was maximum of 617 in 2001-02 against 100 in the base year of 1991-92. The average growth trend for the period of study was 292.4 (Table 8.10).

From the analysis of cash position ratio, we found that the ratio was varied between 0.09 times to 0.50 times. The average cash position ratio for the period of our study was 0.26, which is below the standard rule of thumb of 0.5 times. Therefore, the cash position ratio is not satisfactory. The industry is holding more cash in hand, which might have been profitably used elsewhere (Table 8.11).

Cash to sales ratio implies the basis of sales either on cash or credit. From the analysis, we found that the ratio was maximum of 8.84 percent in 1993-94 and the minimum of 1.66 percent in the year 1995-96. The average ratio for the period was 5.19 percent. It is implied that the industry sales their product mainly on credit basis (Table 8.12).
The average cash to net working capital ratio for the period of our study was 12.51 and was varied between 6.06 percent and 25.02 percent. It means, the industry has lower amount of cash for the payment of day-to-day expenditure and meeting current liabilities (Table 8.13).

From the analysis of funds flow statement, we found that funds from operation is a major source of funds. Among the other sources issue of share capital, increase in current liabilities, and deferred liabilities and decrease in miscellaneous current assets, current assets and fixed assets constituted about 0.4, 3.3, 13.0, 1.5, 10.4, and 4.6 percent respectively of the total funds.

In the application of funds, the increase in fixed assets has major share of 47.1 percent. The other applications of funds are redemption of share capital, decrease in current liabilities, decrease in deferred liabilities, increase in misc. current assets and current assets of 3.3, 1.7, 8.4, 25.2 and 14.3 percent respectively.

We also used the statistical tool of coefficient of correlation to study the relationship between different
variables. We found the coefficient of correlation between current assets to net sales and current assets to net working capital of the industry +0.99 each and it is statistically significant at 5 percent level of significance. We also calculate the coefficient of correlation between different elements of working capital and net working capital. The coefficient of correlation between inventory and net working capital, receivables and net working capital as well as cash and net working capital were +0.946, +0.442 and +0.567 respectively. From this, we found that the coefficient of correlation of inventory and net working capital and receivables and net working capital are statistically significant at all levels. But the coefficient of correlation between cash and net working capital is statistically significant only at 10 percent level of significance.

With the help of regression analysis we can estimate the working capital requirements for the future. From our analysis, we found that the regression equation is $Y = 1996.3 + 0.12x$. Here, we assume $X$ as Sales and $Y$ as working capital requirements. Therefore, with the help of this formula, we can calculate working capital for different level of sales. But with the help of 't' test we found this equation is not acceptable.
9.6 SUGGESTIONS

9.6.1 A few suggestions are offered, basing upon, the findings of the study, to achieve more efficiency in the field of working capital management in the Aluminium Industry of India.

- The firm must balance the trade-off between the security of a stringent credit and the potential loss of volume of credit sales.

- It is suggested that the industry should plan a policy to maintain a definite proportion of inventory to avoid heavy investment in it. The industry should follow the economic order quantity (EOQ) for inventory control.

- The average collection period shows the decreasing trend. The average collection period in 1991-92 was 73.3 days, while in the year 2002-03 the period was 29.5 days. It is the good sign for the industry. However, Industry should take steps for more sales and quick collection of dues.

- Selective use of credit policy variables, like cash discount for prompt payments better collection efforts early payments can lead to reduction in the collection period.
The average current ratio of the industry was 3.03:1. It was above the rule of thumb of 2:1. It indicates the unnecessary locking of current assets and the current assets was not utilised properly.

The liquidity position of the industry is not satisfactory. It suggested that the industry should try to manage its quick assets and current liabilities more efficiently.

The average cash ratio for the industry for the period of our study was 0.26:1, which was below the standard norm of 0.5:1. It means the cash is not kept as per norm. It is also suggested that the company should improve its sales in form of cash sale and try for quick collection of receivables.

With regard to the component of current assets, inventory should be given prime importance to inventory, because it holds a major share. For efficient management of inventory, a separate department should be established. Different levels of inventory should be fixed on the basis of its real consumption and requirements.
Sundry debtors stand as one of the most critical components of current assets. Management should decide the right proportion of sundry debtors or receivables to current assets. Another important aspect of management of receivable is the collection period of debtors. For quick collection, cash discount should be offered to the customers.

For cash management, efficient system of budgetary control could be implemented. Importantly, efforts should be made to regularise the cash flows i.e., to match the inflows and outflows.

With regard to the constituents of current liabilities, the bank loans and sundry creditors occupy the major portion. Continuous efforts should be made with the creditors, to avail this credit facility for longer period and for higher amounts.