CONCEPTS AND REVIEW
CHAPTER II
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This chapter provides the meaning of various concepts applied in this study. An attempt is also made to review the earlier studies made in the same area.

2.1. CONCEPTS

Current Assets

It includes inventories of raw materials, stores, finished and semi-finished goods, cash and bank balances, receivables such as sundry debtors, advances, investments in marketable securities excluding those of in group companies.

Current Liabilities and Provisions

It includes sundry creditors, acceptances, interest accrued and due. Tax, dividends and other provisions form part of current liabilities and provisions. Short-term bank borrowings are also included in current liabilities.

Cost of Production

It includes total raw material expenses, power and fuel, 70% of wages and salaries other operating expenses, royalties, knowhow fees, repairs to plant and machinery and depreciation. The changes in the stock of semi-finished goods is adjusted from cost of raw materials.

Cost of Sales

It is the sum of costs of production and selling costs. Changes in stock of finished goods form part of cost of sales.

Risk-Value

It denotes the proportion of long-term funds used in the financing of current assets.
**Asset Management**

It denotes the difference between the asset turnover of the firm and the asset turnover of the industry, multiplied by the average profit margin of the industry.

**Cost Management**

It denotes the difference between the profit margin of the firm and the average profit margin of the industry, multiplied by the average asset turnover ratio of the industry.

**Prowess Database**

'Prowess ' Database is the most reliable and empowered corporate database. It contains a highly normalised database, built on a sound understanding of disclosures on well over 7000 companies in India. The database provides financial statements, ratio analysis fund flows, product profile, returns and risks on the stock market etc.

**2.2. REVIEW OF LITERATURE**

Working capital is the life-blood and nerve centre of an undertaking. The management of it is crucial for the success of an enterprise. Different authors have treated this subject in different ways. A brief review of the important studies undertaken by financial executives, theorists, and academicians both foreigners and Indians in the areas of working capital, liquidity and profitability is presented.

Walker (1964)\(^1\) in his study on the theory of working capital has projected propositions, which serve as a foundation of the theory of working capital. One such proposition states that 'The amount of risk that a firm assumes varies directly in accordance with the variation in the amount of working capital relative to fixed capital'. He further states that working capital is a function of output. According to him, a more conservative management will employ more working capital for a given volume of output than one, which is willing to assume risk. He has also indicated that in certain industries
there is a negative association between working capital and the rate of return. He points out that a decrease in working capital results in a larger gain than loss that results in a similar increase in working capital.

NCAER (1966)\(^2\) conducted a study on the structure of working capital by selecting 15 companies from the sugar industry, 9 companies from the cement industry and 8 companies from the fertiliser industry. The period of investigation was from 1959 to 1963. The study revealed that internal sources have not contributed much towards the financing of working capital, and in all the industries inventory constituted a major portion of the working capital. Moreover, the cement and fertiliser industries are seen to have a more efficient utilisation of working capital. In the sugar industry, due to accumulation of stock the working capital utilisation is found to be low.

Van Horne (1969)\(^3\) in his study has examined the level of the firm's liquid assets and the maturity composition of its debt to illustrate the respective trade off between risk and return. Risk is defined as the probability of technical insolvency, which occurs when a firm is unable to meet its cash obligation. According to the researcher, to minimise the risk, a high proportion of liquid assets is to be maintained, and the longer the maturity schedule of debt, the less risky would be the debt financing of the firm, and costlier the financing. He has also discussed the effect of changes in liquid assets and debt composition individually. He has suggested combining the two factors for evaluating the alternatives that would show different risk return trade-off.

Paul Welter (1970)\(^4\) has a different view of working capital management compared to the earlier studies. This study emphasizes the fact that working capital originates because of the delay centres located throughout the production and marketing function. According to Welter, the firms should first specify the delay centres along with
costs borne by them. Thereby the working capital blocked in each delay centre can be found out. The study concentrates only on delay centres and the steps to be taken to reduce the delay, but it ignores the concept of Net Working Capital.

Knight (1972)⁵ in his study argues that optimising models dealing with single working capital accounts independently may produce inconsistent results as compared to models that give simultaneous treatment to each working capital account such as inventories, receivables and cash. He points out that not only receivables and inventories are interdependent on each other but also on net sales and profits.

The linkages between different components of working capital and their relationships with the variables like sales, cost of capital, earnings and cash flows have been evaluated by Meiville and Tavis (1973)⁶ in their study entitled ‘Optimum Working Capital Policies; A chance constrained programming approach’. The study points out that the current assets and current liabilities of a firm are the stock reflections of closely inter-related operational and financial cash flows, and unless the net effect of these combined flows is recognised, the search for optimal credit, inventory or short term borrowing policies cannot become complete.

Chakraborty (1973)⁷ points out in his study that excessive working capital will lower the capital turnover ratio, and so bring down the overall return on the capital employed. Too small an amount of working capital may yield an immediate higher return on capital employed, but over a long period it may reduce the earning capacity of the fixed capital employed.

Smith (1974 a)⁸ has discussed the dual goals of profitability and liquidity in his research work, and has suggested that the job of a financial manager is to achieve a trade-off between the two. He uses rate of return as a measure of profitability and net working
capital and current ratio as measures of liquidity. Smith (1974 b)\textsuperscript{9} The second study made by Smith discusses the individual and collective effects of accounts receivable, inventories, accounts payable and other accruals on profitability and liquidity. The study observes that a tightened inventory policy reduces unnecessary borrowings to a lower level than the faster collection of receivables or slower payments of current liabilities.

Misra (1975)\textsuperscript{10} has studied the problem of working capital in a selected six public enterprises for a period of 1960-61 to 1967-68. The important findings of the study are: (1) Selected enterprises are not able to utilize working capital efficiently. (2) In all enterprises excess inventory is noticed which is due to a lack of inventory control, defective inventory management, and also due to uncongenial organisation. Inordinate delays in the release of foreign exchange and issue of import licenses are also some reasons for overstock of inventory. It is found that receivable turnover ratio is very low due to generous credit granting and inadequate collection policy. In all the selected enterprises, the size of cash is found to be very much high on account of improper planning and control of cash.

An attempt to inter-relate working capital and capital structure decisions with working capital was made by Bierman, Chopra and Thomas (1975)\textsuperscript{11} have studied the effect of ‘ruin’ on optimum working capital and capital structure. According to the authors, the loss of working capital can be termed as ‘ruin’, and whenever loss takes place it reduces the equity base and to compensate it a firm tends to borrow, and thereby returns to the optimum working capital position. The dividends can be paid only after the interest on long-term debts is paid and also after the optimum working capital position is reached. But the main drawback of the study is the vague meaning of the term ‘ruin’. Moreover, the study does not consider the growth of the firm and the possibility of using retained earnings to add to the working capital.
Bhattacharya and Raghavachari (1977)\textsuperscript{12} have made a study on the determinants of effective working capital management by applying discriminant analysis. The study is conducted on 72 large Indian companies, and 14 large Indian banks and financial institutions. To find out the significantly influencing variables, they have used eleven ratios viz., quick ratio, average finished goods inventory as number of days sales, average raw materials inventory as number of days of raw materials consumption, average receivables as percentage of sales, cash flow as percentage of sales, creditors as percentage of raw materials consumed, profit after tax as percentage of raw materials consumed, profit after tax as percentage of sales, sales as number of times of total assets, profit after tax as percentage of total assets, and debt as percentage of equity. The study reveals that the following variables are significantly influencing and determining the efficiency of working capital management: (1) profit after tax as percentage of sales (2) sales as number of times of total assets (3) quick assets as percentage of current liabilities and (4) average receivables as number of days of sales.

Lambrix and Singhvi (1979)\textsuperscript{13} in their study point out that a firm can shorten the working capital cycle and improve cash flow by reducing the time-frame of the physical flow from receipt of raw materials to shipment of finished goods, and by minimising the time involved in paper work. The cash flow can also be increased by improving the terms on which a firm buys and sells goods and also by improving the effective receipt or disbursement of cash. The researchers have suggested that the Pre-determined decision level of working capital must be examined in relation to profitability measured by the return on net assets.

Vijayasaradhi (1980)\textsuperscript{14} has highlighted the problems of working capital management based on the study of aggregate financial data of public enterprises covering the period of 1971-77 and also by conducting case studies of individual units. The important findings of the study are as follows:

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1. The share of inventories in the total current asset investment is the highest, forming over 60 per cent of the total current asset investment.

2. The capital goods groups has the highest inventory of 11.5 months value of production.

3. Receivable management is better from 1974, which is responsible for good liquidity.

But the study does not take into account the current liabilities.

Kulshrestha (1980)\textsuperscript{15} has stressed the importance of adequate corporate liquidity by pointing out the evils associated with excess liquidity and too little liquidity. According to him, too much of liquidity will lower profitability, result in deterioration in managerial efficiency through complacency, increased speculation and unjustified expansion, and too liberal credit and dividend policies.

Bhabotosh Banerjee (1982)\textsuperscript{16} in his study on ‘Corporate liquidity and profitability in India’ has identified the relationship of liquidity with profitability by analysing the trend of liquidity position of medium and large public limited companies in India covering the period 1971-78. His study reveals that in industrial groups belonging to publishing, ferrous and non-ferrous metal products and shipping, a rise in liquidity has led to a rise in profitability and vice versa. But, in other industry groups like that of tobacco, silk and rayon textiles, a rise in liquidity has been found to result in a decline in profitability.

Agarwal (1983)\textsuperscript{17} in his study of working capital management in selected large manufacturing and trading public limited companies during the period 1966-67 to 1976-77 has given the following findings:
1. In most of the industries the working capital per rupee of sales and cash turnover ratio has shown a declining trend. An upward trend is noted in cash to current asset ratio.

2. The receivables turnover ratio has shown that firms in trading sector have a slower turnover as compared to firms in manufacturing industry groups.

3. There is overstocking of raw materials in most of the industries.

4. The long term funds as a percentage of total working capital has registered an upward trend in most of the industries.

Sharma and Reddy (1985)\(^\text{18}\) have made a study on the liquidity position of Nizam Sugar factories Ltd. for the period 1972-73 to 1981-82 to identify factors influencing liquidity. The study concludes that government policy with respect to input and output affects the liquidity of the companies.

Parashar (1986)\(^\text{19}\) in his study has discussed business liquidity, and has provided insights into contemporary liquidity management perception policies and practices in vogue in selected business units. The techniques of liquidity monitoring, cash flow control tactics have also been discussed.

Ghanashyam Panda (1986)\(^\text{20}\) has analysed the working capital problems of small manufacturing companies. The study extends over the period 1966 to 1974 for a sample of fifty companies. It is found that small companies had limited access to long-term sources and the proportion of current assets to total investment is 48 per cent. Moreover, a significant and close association is found between sales and current assets, and between sales and working capital gap.

Pradhan (1986)\(^\text{21}\) in his study has examined the working capital management of selected manufacturing public enterprises of Nepal. It is found that most of the selected enterprise have been achieving a trade off between risk and return. A discriminant
analysis has been applied based on current and liquid ratio to discriminate between high risk and low risk firms. The study reveals that the economies of scale have been the highest for inventories followed by cash and gross working capital, receivables and net working capital.

Reddy (1988) in his study has emphasized the importance of proper management of working capital in co-operative sugar mills. He observes that absence of net working capital is a grave danger for mills. He observes that there should be sufficient amount of net working capital to avoid technical insolvency.

The Reserve Bank of India (1988) has conducted a study on the finances of Public Limited Companies in 1987-88. The study covers 1953 Public Limited Companies organised in 17 industry groups. The study reveals that overall the current assets as a percentage of total capital employed is 54.1 per cent, the inventories as a percentage of current assets is 44.18 per cent, debtors and loans and advances to current assets is 44 per cent, quoted investments to current assets is 5.54 per cent, and cash to bank balance is 6.28 per cent. The study reveals that inventories and receivables play a significant role in the management of working capital.

Jain (1988) in his study has analysed the problems of working capital management, which is considered to be the problem of national resource allocation, and its effective and proper utilisation to subserve the micro-enterprises and the macro natural objectives.

A study of the management of working capital in a single business enterprise has been done by Sharma (1988). The study points out that a very important reason for the failure or sickness of the textile mills is the mismanagement of working capital and misuse of bank credit in unauthorised and undesirable channels.
Harbir Singh (1990) in his study has stated that the financial health of a company can be improved if stringent control is exercised on raw materials, stores and spares, and also by reducing the unprofitable investment blocked in current assets. The cash flow can be regulated if the companies prepare weekly cash flow statement and also if cash budget is prepared on a regular basis.

The study of working capital management of the Petroleum industry in India has been undertaken by Verma (1994). He has analysed the comparative working capital positions of the reputed oil companies in India and has given valuable suggestions to improve the management of the key components of working capital.

Joshi (1995) has focussed on working capital management in the area of capital-intensive industries covering sixty-four medium and large private and public enterprises. The study has brought out the problem of inefficiency in the management of current assets in the cement industry, and has also highlighted the dominant position of inventories in total working capital.

Linn (1996) has stressed the importance of cash flow cycle as a key ingredient in managing the business liquidity. According to him, the cash flow cycle is 1) the investment of cash in raw material and product, (2) the sale of the product and 3) the receipt of cash payment for the sale. He points out that the liquidity of a company is directly affected by the timing differences in cash transactions for each activity.

Vijaykumar (1996) has studied the short-term liquidity position in twenty-eight selected sugar factories in co-operative and private sectors. A discriminant analysis has been undertaken to distinguish the good risk companies from poor risk companies based on current and liquidity ratios. Discriminating Z scores have been calculated with the help of discriminant function and according to the Z scores the companies are ranked in the order of liquidity.
Vijayakumar and Venkatachalam (1996)\textsuperscript{31} in their study have analysed the different aspects of working capital performance in respect of Tamil Nadu Sugar Corporation. The study reveals that moderate approach is followed in investing the funds in working capital. The impact of working capital ratios on profitability has shown both positive and negative trends.

George Schilling and Schulling (1996)\textsuperscript{32} in their article have illustrated how investments in working capital establish the liquidity position of the company which is critical to its survival. They have pointed out that the working capital management is about establishing an optimum liquidity position by managing the resources invested in the day-to-day operation of the business. According to them, the optimum liquidity position requires that cash conversion cycle be kept as short as possible but at the same time to be consistent with the current level of business activity.

Syed Zabid Hussain and Habibur Rahman Akon (1997)\textsuperscript{33} have analysed the financing of working capital in their case study on Bangladesh Textile Mills Corporation. It is found that a large amount of short-term finance is used in financing fixed assets in addition to financing current assets leading to the risk of financial insolvency. An aggressive financing policy is seen to be adopted. The study also reveals that there is unbalanced composition of working capital finance, resulting in liquidity problems.

Beaumont Smith and Begemann (1997)\textsuperscript{34} studied the data set of 135 firms for the years 1984-1993 to identify the association between working capital and operating profit. He has associated traditional working capital position ratios, working capital activity ratios, traditional working capital leverage ratios and new liquidity concepts with operating profit. He has found out that current liabilities divided by funds flow accounted for most of the variability in operating profit.

Beaumont Smith (1997)\textsuperscript{35} has applied thirteen working capital measures to test the hypothesis of significant sector effect in the working capital measures employed by
industrial firms listed in South Africa. The Kruskal-Walls test scores are applied, and the result of the test reveals that there are significant sector effect in ten out of the thirteen working capital measures.

Desai (1997)\(^36\) has made a comparative study of a few cotton mills of Ahmedabad in respect of their liquidity performances, their relationship with profitability, the pattern of financing of current assets and the turnover of working capital. The selected firms are classified into three groups based on the size of the firms, and it is statistically tested to determine how far the observations of the study can be taken as a valid useful measure for future policy framework. It is observed that the liquidity and profitability of the firms are not influenced by the size.

Chandra Bose and Sankaranarayanan (1997)\(^37\) in their study have discussed the concept of operating cycle to estimate the working capital requirement. They have concluded by stating that management of working capital is synonymous with management of inventory in view of the large proportion of inventory in the current assets.

Vijayakumar (1998)\(^38\) has studied the relationship between size, profitability and growth of six major industrial groups viz., steel, power, petroleum, fertilisers, chemicals and textiles by applying the multiple regression analysis. The study which covers a period from 1980-81 to 1995-96 reveals that growth is significantly associated with profitability.

Hyun - Han Shin and Luc Soenen (1998)\(^39\) have investigated the relationship between a firm's net trade cycle and its profitability. The relationship is examined using the correlation and regression analysis by industry and working capital intensity. It is found that a strong negative relation existed between the length of a firm's net trade cycle and its profitability. In addition the researchers have found that shorter net trade cycles are associated with higher risk - adjusted stock returns.

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Amit Mallick and Debasish Sur (1998)\textsuperscript{40} have studied the impact of working capital on the profitability of the industry, and have identified certain ratios having significant positive and negative association with return on investment. Out of the nine ratios selected for study, working capital ratio, acid test ratio and current assets to sale ratio are found to have significant negative association with return on investment. Similarly, current assets to total assets ratio and working capital turnover ratio are found to have significant positive association with return on investment.

Cote and Latham (1999)\textsuperscript{41} in their study have combined three current and liability accounts ratio into a single ‘merchandising ratio’ in order to measure the net effect of a firm’s working capital management strategy. The merchandising ratio according to the researchers is composite of the three turnover ratios viz., accounts receivables turnover ratio, inventory turnover ratio and accounts payable turnover ratio. The relationship between merchandising ratio and traditional ratios are tested and positive correlation between return on assets and merchandising ratio, and between long term debt to total assets ratio, and merchandising ratio are identified. According to them, the lengthening of the cash conversion cycle cannot be sustained without a negative impact on profitability.

Carol Lancaster and Jerry Stevens (1999)\textsuperscript{42} in their study have tested whether industry differences exist in relationship among liquidity, accrual income and cash flow. It is found that irrespective of the industrial grouping the accrual income has no incremental explanatory power for changes in the cash conversion cycle. For the financial services and service industries none of the accrual or cash flow measures is seen to have any significant incremental explanatory power for the cash conversion cycle. Measures of working capital from operations and cash flow from operation are found to have a significant incremental explanatory power for some industries only. The study has established the existence of industry differences in relationship between liquidity, accrual income and cash flow.
Andrea Kirkby (1999) in his study has suggested the strategy to be adopted by firms to survive a downturn in business. According to him, the customers have to be pressurised for earlier payment. It is advisable to have a solid diverse base of customers to maximise the risks from a single customer going out of business. Similarly, the firm should try to avoid sudden disruption in the supply of materials by dual sourcing critical inputs. Investments have to be ruthlessly prioritised by looking at the return that can be made on cost cuts by using more productive equipment.

The importance of cash gap which is the number of days between a business payment of cash for the goods bought and the receipt of cash from its customers for the goods sold is brought out in the article by Germain Boer (1999). He has illustrated the concept with a simple diagram, by depicting four bars on a time line, the first one representing days of inventory, the second the days of payables, the third the days of receivables and the fourth determined by the relationship between the first three representing the cash gap. He has stressed that the growing companies must monitor the cash gap along with their sales growth and profit margins.

Kanka and Chinmoy Roy (1999) have studied four central public enterprises in paper industry with specific reference to their working capital policies and practices during the pre-liberalisation and post-liberalisation eras. It is found that the growth rate on current assets has been higher than that in sales or output for the second half of the study period. Faulty credit management, poor collection policies and weak working capital management practices have characterised the sample enterprises throughout the study period from 1986-87 to 1995-96.

Chundawat and Shurveer Singh Bhanawat (2000) in their study on working capital management practices in IDBI assisted tube and tyre companies have made the following observation: Approximately one-third of the current assets have been invested.
in the form of inventory and about 60 per cent of the current assets have been invested in the form of trade receivables by tube and tyre industry. To check the efficacy of working capital management the Y score model developed by Srivastava and Yadav has been applied. The multiple discriminant analysis has been carried out by using four ratios viz., cash flow / total tangible assets, current assets / current liabilities, net sales / total tangible assets and defensive assets / total operating expenses. The sample companies have the Y score above the cut-off point of 1.7068 indicating efficient working capital management.

Gallinger (2000) has in his article discussed the quality of earnings by preparing a cash flow statement under indirect method, and has applied it to Salton Inc. for the years 1993-97. He has found out that cash from operations is very much lower than accrual profit. According to him, the difference between adjusted net income and cash profit is called quality of earnings. If the difference is high, the quality of earnings is said to be low.

Rajeswari (2000) in her case study of the liquidity management of Tamil Nadu Cement Corporation Ltd., Alangulam has found that the liquidity position of TANCEM is not stable during the period 1993-94 to 1997-98. The conclusion regarding liquidity is arrived at based on current ratio, liquid ratio and absolute liquid ratio.

Sivaram Prasad (2000) has discussed the results of his study in respect of twenty-one selected paper mills covering a period from 1983-84 to 1992-93. The study reveals that working capital forms 47.2 per cent of the total net assets and the management of receivables and inventory are not on modern lines. Moreover, there is a poor planing of cash balances in the sample mills.

Gallinger (2000) has analysed the financial distress models by applying them to a specific company called Salton Inc. He has applied Altman's Z scores and lambda indices to suggest the liquidity risk associated with the company. The Altman's Z score is
applied by considering predictor variables such as EBIT/Total assets, networking capital / total assets, equity / debt and retained earnings / total assets. Each of these ratios is multiplied by a co-efficient, which is derived from a statistical procedure called multiple discriminant analysis. Similarly, lambda indices are arrived at by adding cash, marketable securities and unused lines of credit with the average free cash flow and the whole is divided by the standard deviation of the free cash flow.

Anjan Kumar Ghatak (2000)\textsuperscript{51} in his study has stated that there is a positive relationship between working capital and sales. According to him, the ideal level of working capital is one that equilibriates return from investment in working capital with the firm's ability to assume risk. He has argued that the type of capital used to finance working capital directly affects the amount of risk that a firm assumes and also the opportunity for gain or loss.

Narasimhan and Balasubramanian (2000)\textsuperscript{52} have analysed the quality of earnings and its composition in respect of a sample of 296 Indian companies. The quality of earnings according to them is the return required to compensate for the business and financial risks. A model for computing the quality of earnings has been given in the article published by them. According to them, the quality of earnings can be improved by improving the asset management, cost management and leverage management.

Joseph Chang (2001)\textsuperscript{53} in his study on chemical industry has emphasized the importance of free cash flow in judging the financial health of a firm. According to him, free cash flow is defined as net income plus depreciation, and amortization minus capital expenditures minus change in working capital. The free cash flow in turn shows how much actual cash the business generated and reflects the quality of the cash flow generated by the firms.

Mukhopadhyay (2001)\textsuperscript{54} in his study has given a theoretical framework regarding the role of the financial manager by explaining the operating cycle and the working
capital forecast. He has discussed the utility of ratios in judging the efficiency of working capital management, but has not provided any empirical evidence in support of his argument.

Shanmugam and Poornima (2001) have studied the working capital management system and procedures adopted by twenty-eight spinning mills in Coimbatore by gathering views expressed by the Finance Executives on different aspects of working capital management. The data have been collected through interview schedule. It is found that the raw material market is the dominating factor in working capital estimation.

Debasish Sur (2001) has made a comparative analysis of the liquidity management in electricity generation and distribution industry by using Motaal's comprehensive test. The closeness of association between liquidity and profitability of the companies is measured by computing Spearman's Rank correlation co-efficients. He has used current assets to total assets ratio as the liquidity indicator and the return on capital employed has been taken as the profitability measure. Positive association between liquidity and profitability is noted in two companies, and in the other two companies the association is found to be very low.
References


