

CHAPTER - III

METHODOLOGY OF THE STUDY

3.1 INTRODUCTION

For carrying out the study of the working capital management of the selected large scale public limited industrial companies of Jordan, it is imperative that an appropriate procedure should be followed. And for a study involving data on different aspects, appropriate methods of collecting data have to be devised. Therefore, this chapter attempts at providing an overall design of the study with procedural details of the research undertaken. The statement of the problem, objectives of the study, delimitation of the study, sample of the study, sources of data and data collection, methods of analysis in the present study, specific ratios followed in the study, working capital gap and bank finance recommended by the Tandon Study Group, and operational definitions of the terms used in the study will be highlighted in this chapter. Thus, this chapter will be chiefly concerned with showing how the cardinal objective of the study has been fulfilled.

3.2 STATEMENT OF THE PROBLEM

A Study on the Working Capital Management of the Selected Large Scale Public Limited Industrial Companies of Jordan.

3.3 OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

- I. To study the structure of the working capital and each of its components like inventory, receivables, cash and bank balances, and working capital finance.
- II. To evaluate the composition of inventory and its adequacy in each of its components like raw materials, work-in-process, finished goods, spare parts and stores, and miscellaneous goods.
- III To determine the impact of receivables management and its adequacy in each of its components like accounts receivable, and loans and advances.

- IV To verify the availability of cash and bank balances as per operational requirements, and liquidity and solvency of the selected industrial companies
- V. To analyse the adequacy of working capital finance, its various sources and availability of bank credit.
- VI. To analyse the efficiency of working capital management in the selected industrial companies of Jordan from 1987 to 1996.

3.4 DELIMITATION OF THE STUDY

The present study has been delimited with respect to the following points:

- i The present research is delimited to the study of working capital management relating to inventory, receivables, cash and bank balances and working capital finance of the selected large scale manufacturing public limited industrial companies of Jordan.
- ii. The present study confines to the period of one decade i.e., from 1987 to 1996.
- iii. Another delimitation is regarding the size of the sample. In the present study, out of 36 large scale manufacturing industrial companies listed in Amman Financial Market on or before 1987, only 21 industrial companies have been selected. Initially, it was planned to cover all the large scale manufacturing industrial companies but the rest of the companies could not be included in the sample due to the lack of availability of appropriate data
- iv. The present study is mainly based on the annual audited balance sheets, profit and loss accounts, official records of the industrial companies, the audited annual reports of the industrial companies and other related data published by the industrial companies of Jordan. Cross verification has been made, where necessary, through reference to primary figures and personal discussions with the financial executives of the concerned

companies. Data for the weekly or monthly variation in the inventory level, receivables, cash and working capital finance level would have been more appropriate and useful for the study, but in the absence of such data, this researcher has relied on the yearly basis data which are used to reveal the working capital requirements and its utilisation. The limitations of the financial statements for the purpose of such an analysis are well known. Despite its weaknesses, it continues to be the only major source of data for a micro-analysis of an industrial company's behavior.

3.5 SAMPLE OF THE STUDY

For the purpose of an indepth analysis of various aspects of the working capital management and their implication on managerial effectiveness, a set of twenty-one industrial companies have been selected following purposive sampling. Jordan's industrial companies are mainly composed of "manufacturing" and "mining and quarrying companies". In 1996, there were 87 manufacturing, and mining and quarrying industrial companies listed in Amman Financial Market.⁽¹⁾ But this investigator, for its feasibility, has selected only the manufacturing large scale industrial companies, which were 36 in number as shown in Table 3.1. The mining industrial companies were excluded from the present study as the Government of Jordan holds more than 51 per cent of their ownership ratio. For an accurate result of analysis as well as due to the unavailability of adequate and reliable information of data for some of the manufacturing industrial companies this investigator has narrowed down and selected only 21 major large manufacturing industrial companies for the purpose of the present study. The selected industrial companies have been divided into seven sectors. In order to maintain a homogeneous selection and to maintain an accuracy with satisfactory result, this investigator has selected three major industrial companies under each sector according to the availability of data.

The given table 3.1 reveals the position of 36 manufacturing industrial companies and 21 selected industrial companies of Jordan during 1996 with regard to paid-up capital and number of workers.

TABLE 3.1

**TABLE SHOWING PERCENTAGE OF SELECTED INDUSTRIAL COMPANIES
IN RELATION TO OVERALL INDUSTRIAL COMPANIES LISTED IN
AMMAN FINANCIAL MARKET OF JORDAN DURING 1996**

Particular	Overall Industrial Companies	Selected Industrial Companies	Percentage of the Selected Industrial Companies to the Overall Industrial Companies
Number of company	36 *	21	58.33
Paid up capital (JD in thousand)	333,287	168,612	50.60
Number of workers (thousand)	22,002	11,633	52.87

** This number indicates the overall industrial companies of Jordan which were chosen according to four conditions: first, the chosen number of overall industrial companies comprise only the manufacturing industrial companies; second, the company has to be listed in Amman Financial Market, third, the company has to be established in Jordan before 1987 and still existing and functioning up to the end of the period of study i.e. 1996; and fourth, the company had to have more than 19 employees according to the definition of Statistical Department of Jordan for the large scale company ⁽²⁾*

Table 3.1 reveals that the selected industrial companies cover 58.33 per cent of the overall industrial companies, 50.60 per cent of the paid up capital and 52.87 per cent of the workers of the selected industrial companies of Jordan during 1996.

The present study is confined to the period of one decade i.e., 1987 to 1996. The reason behind selecting this period is the availability of data, which the investigator found most recent and appropriate for the study. Another important reason for selecting this time period is that, it is long enough to analyse the change in behavior and the efficiency of working capital, and to see how far it is maintained from different angles. Moreover, this time period has witnessed two economic crises: the devaluation of Jordanian Dinar in 1988 and the Gulf war in 1990-91.

The selected industrial companies for the purpose of the present study are as follows:

1) CHEMICAL AND PETROLEUM INDUSTRIAL SECTOR

- a) Jordan Petroleum Refinery Company Limited
- b) Intermediate Petrochemical Industrial Company Limited
- c) Jordan Sulpho-Chemicals Company Limited

2) CONSTRUCTION INDUSTRIAL SECTOR

- a) The Jordan Cement Factories Company Limited
- b) The Jordan Ceramic Industrial Company Limited
- c) Jordan Rockwool Industrial company Limited

3) CONSUMABLES AND FOOD INDUSTRIAL SECTOR

- a) The Industrial Commercial and Agricultural Company Limited
- b) Arab Investment and International Trade Company Limited
- c) The National Industrial Company Limited

4) PHARMACEUTICALS INDUSTRIAL SECTOR

- a) The Arab Pharmaceuticals Manufacturing Company Limited
- b) Dar AL-Dawa Development and Investment Company Limited
- c) The Arab Center for Pharmaceuticals and Chemicals Limited

5) ENGINEERING INDUSTRIAL SECTOR

- a) Arab Aluminum Industrial Company Limited
- b) National Cables and Wire Manufacturing Company Limited
- c) The Jordan Pipes Manufacturing Company Limited

6) TEXTILE INDUSTRIAL SECTOR

- a) The Jordan Worsted Mills Company Limited
- b) Jordan Tanning Company Limited
- c) The Woolen Industrial Company Limited

7) PAPER AND PACKING INDUSTRIAL SECTOR

- a) Jordan Paper and Cardboard Factories Company Limited
- b) The Arab Paper Converting and Trading Company Limited
- c) Jordan Printing and Packing Company Limited

3.6 SOURCES OF DATA AND DATA COLLECTION

The study is primarily based on the analysis and restructurisation of data contained in the annual balance sheets and profit and loss accounts of the industrial companies of Jordan. The data used in the present study are mainly of two types:

(1) Primary Data, and

(2) Secondary Data.

(1) Primary Data

The primary data is collected through questionnaire and personal interview. The questionnaire was framed keeping in mind the main objectives of the study and to initiate further details of the information lacking in the published documents. The questionnaire included both open ended and close ended items. Close ended items were of Yes / No type as well as multiple choice type. In case of open ended items, space was provided in the questionnaire for the respondents to provide relevant information.

The investigator prepared the questionnaire on the lines suggested by experts in research methodology. Their contents, validity and objectivity have been duly taken care of. The questionnaire focused on four areas:

- (a) Inventory management in the industrial companies.
- (b) Receivables management in the industrial companies.
- (c) Cash management in the industrial companies.
- (d) Working capital finance management in the industrial companies.

After preparing the first draft, it was given to some teachers, who are experts in the field to assess its content validity and language clarity as well as to determine its adequacy and appropriateness. In the light of their comments, the questionnaire was modified and thus the final version of the tool was ready. The final version was distributed by the investigator personally interacting with the person concerned for each of the selected industrial companies. (This questionnaire is given in Appendix XI).

The investigator in order to cross-validate the information obtained through the questionnaire as well as to elicit an indepth information which the investigator felt was lacking in the questionnaire, an unstructured interview was conducted. The investigator interviewed them during their working hours. In the unstructured interview, there was no preconceived hypothesis for which the information was to be elicited. The interview did not follow any particular

format. It also varied from case to case as the interaction patterns of the respondents differed significantly from person to person. The interviews were carried out from the cues obtained through the information of the questionnaire made by the respondents.

(2) Secondary Data

The secondary data consisting of the annual balance sheets, profit and loss accounts and audit reports of the industrial companies were collected from the industrial companies by visiting the companies personally. Other relevant secondary data which are not available in the annual balance sheets and profit and loss accounts, were taken from the various records of the industrial companies as well as from the various issues of Annual Reports and other monthly, quarterly, annually published bulletins like Jordanian shareholding companies guide, the Ministry of Industry and Trade, Ministry of Planning, Department of Statistics, Amman Financial Market, Government and Semi-Government Agencies, Central Bank of Jordan, etc.

Apart from all these, the investigator referred to various relevant materials available in the library in order to supplement the data further.

3.7 METHODS OF ANALYSIS USED IN THE PRESENT STUDY

The present study is an attempt to analyse working capital management of the selected industrial companies of Jordan. The approach adopted is basically analytical and interpretative in nature. Before deciding about the broad approach or methods of analysis for the present study, literature on research methodology and research studies related to the working capital management were reviewed (as mentioned in chapter II). On the basis of the review and the objectives of this study, it was decided to employ quantitative descriptive methods of analysis and investigation of the empirical data on the working capital management in the industrial companies of Jordan. As stated earlier, the present study is based on diverse financial data available in the annual reports of the industrial companies. The analytical and descriptive approach is followed because of the fact that it seeks to analyse and interpret

the working capital management over a period of time, i.e., from 1987 to 1996. Such an approach has been followed by many experts like Mishra⁽³⁾, Sharma,⁽⁴⁾ Agrawal,⁽⁵⁾ etc. The present study would be basically different from other studies. This study is mainly limited to the time series analysis and cross-section analysis of the empirical data comparing the average of each company with their related sector's average and the sector-wise average with the overall industrial average during the period under study i.e., from 1987 to 1996.

Time Series Analysis

Time series analysis is concerned with the behavior of a given ratio over the period of study. It is a set of observations taken at specified times, usually at equal intervals. The analysis of the series is of great significance because of the fact that it helps to have a trend analysis which involves computing the ratios of a particular company for several years and comparing the ratios over time to see whether the company is improving or deteriorating.⁽⁶⁾ Cross-section analysis involves comparison between the average of each sector and the overall industrial average, and also the average for each company under the respective sector with the sector's average.

Financial ratios are widely used at the international level under the auspices of the United Nations Organisation for the purpose of compiling and distributing information covering significant ratios within different industry sectors.⁽⁷⁾ Experts on accounting theory prescribe two important tools for a proper analysis of the working capital. These tools are as follows:

- (a) Fund Flow Analysis, and
- (b) Ratio Analysis.

(a) Fund Flow Analysis

Fund flow analysis helps in finding the destiny of a business by enabling the executives to visualize the movement of funds taking place. This helps in detecting the sources for financing the heavy accumulation of inventory and accounts receivable. This shows the changes in working capital components between two dates. But the fund flow statement fails to clarify the significance of movements in the working capital structure. It throws no light on the efficient

uses of working capital or the trend of improvement of the current financial position of the company

(b) Ratio Analysis of Working Capital

A ratio is a simple expression of one figure in comparison with another figure. It is defined as the quotient of two mathematical expressions and as relationship between two or more things.⁽⁸⁾ Ratio analysis is a powerful tool of working capital analysis. In financial analysis, a ratio is used as an index or yardstick for evaluating the financial position and performance of a company⁽⁹⁾ It is calculated in three ways:⁽¹⁰⁾

- a. By dividing one number by the other.
- b. Showing one as percentage of the other.
- c. Showing one in terms of the number of times a particular item has turned over in relation to another.

It involves comparison for a useful interpretation of each and every aspect of working capital analysis. Myer,⁽¹¹⁾ Omar,⁽¹²⁾ Weston,⁽¹³⁾ Kuchhal,⁽¹⁴⁾ Choudhary,⁽¹⁵⁾ Johnson,⁽¹⁶⁾ Gole,⁽¹⁷⁾ Bogen,⁽¹⁸⁾ Dories Lillian,⁽¹⁹⁾ Bliss,⁽²⁰⁾ Alexandar,⁽²¹⁾ Ramamoothy,⁽²²⁾ Rao,⁽²³⁾ Baruch,⁽²⁴⁾ Kennedy,⁽²⁵⁾ Nigam,⁽²⁶⁾ Bolton,⁽²⁷⁾ Guthman,⁽²⁸⁾ Horrigan,⁽²⁹⁾ Tandon Study Group,⁽³⁰⁾ Reserve Bank of India,⁽³¹⁾ Howard,⁽³²⁾ Pandey,⁽³³⁾ Vanhorne,⁽³⁴⁾ Beaver,⁽³⁵⁾ Gibbs,⁽³⁶⁾ Hampton,⁽³⁷⁾ Robbins,⁽³⁸⁾ Chakrabarty,⁽³⁹⁾ Varanasy and Murthy,⁽⁴⁰⁾ Gitman,⁽⁴¹⁾ Foulke,⁽⁴²⁾ Johnson,⁽⁴³⁾ have recommended the ratio analysis technique in checking the efficiency of working capital management.

3.8 SPECIFIC RATIOS FOLLOWED IN THE STUDY

The efficiency with which working capital is employed in running a business is a test of the effectiveness of financial management. One measure of the efficiency is the number of times the working capital is turned over during a given period. The criteria for measuring the efficient uses of working capital are the rate of net profit and loss on working capital and the turnover of gross working capital employed in the companies.⁽⁴⁴⁾ The efficiency of capital is measured by the speed with which the capital of the business moves through

the various business processes, i.e., inventory, receivable and cash. The speed is measured through the turnover of working capital.⁽⁴⁵⁾ The gross working capital turnover reflects the productivity of working capital employed in business.⁽⁴⁶⁾

3.8.1 ADEQUACY OF INVENTORY

In order to test the adequacy of inventory in the industrial companies, different ratios have been used in the present study. Inventory turnover ratio indicates the efficiency of the company's inventory management. Turnover of an inventory means the number of times the inventory was sold and replaced during an accounting period. It shows how rapidly the inventory is turning into receivable through sales. This ratio is derived by dividing the net sales by the value of the aggregate inventory at the end.⁽⁴⁷⁾ Generally, a high inventory turnover is an indication of a good inventory management and a lower inventory turnover implies an inefficient inventory management.⁽⁴⁸⁾ A low inventory turnover indicates excessive inventory levels, i.e., too large an inventory in relation to sales. A high level of sluggish inventory leads to unnecessary blockage of funds, impairment of profit and increased costs. A very high inventory turnover indicates that the concern has run out of stock and the production lines are coming to a close. The rate of inventory turnover is significant because of the following reasons.⁽⁴⁹⁾

- a) An opportunity for profit arises when capital invested in inventory is turned over through sales.
- b) The more rapid the turnover of inventory, the lesser the chance of loss through obsolete materials.
- c) The more rapidly an inventory is turned over, the more closely the business approaches a cash position and the lower is the current ratio upon which it can operate safely.
- d) A rapid turnover means a close control of inventory and the minimization of investment in inventory.

Inventory in Terms of Months' Cost of Production.

The excessiveness and the dominant character of inventory become more explicit if they are expressed in terms of number of months' cost of production. Cost of production is divided by the inventory at the end of the year. If the inventory in terms of a months' cost of production shows increasing trend, it indicates the excessive accumulation of inventory and vice-versa. Inventory in terms of number of months' cost of production is an important way of controlling the inventory. Inventory turnover and inventory in terms of a months' cost of production depend on the turnover of the components of inventory, i.e., raw materials, work-in-process, finished goods, spare parts and stores.⁽⁵⁰⁾

Turnover of Raw Materials

This ratio is derived by dividing raw materials consumed for production by closing raw materials ⁽⁵¹⁾ It shows the number of times the raw materials are replaced during a year. A low turnover ratio indicates that excessive raw materials have been procured while a high turnover ratio reveals that proportionately less raw materials are held in order to continue production. For judging the adequacy of raw materials, additional two more ratios have been analysed.

- a) Percentage of raw materials to aggregate inventory
- b) Raw materials inventory in terms of a months' value of raw materials consumption ⁽⁵²⁾

Turnover of Work-in-Process

This ratio shows the relationship between the cost of production and the value of goods in process lying at the close of a fiscal year. The cost of production is divided by work-in-process for computing the ratio. The higher the turnover, the lower is the inventory accumulation and the lesser the working capital finance tied up in stock. A declining turnover implies that excessive accumulation of work-in-process is existing because of laxity in controlling the productive processes or some external factors has hampered management

cycle.⁽⁵³⁾ The other ratios followed for judging the adequacy of work-in-process are as follows:

- a) Percentage of work-in-process to aggregate inventory.
- b) Work-in-process in terms of a months' cost of production.⁽⁵⁴⁾

Turnover of Finished Goods

This ratio is obtained by dividing sales by the finished goods at the end of the fiscal year.⁽⁵⁵⁾ A higher turnover indicates a large volume of sales, while a lower turnover implies that the volume of sales is lower or the management requires more finished goods. The adequacy of finished goods inventory has been tested through the computation of additional two ratios, namely:

- a) Percentage of finished goods inventory to aggregate inventory
- b) Finished goods inventory in terms of a months' cost of sales ⁽⁵⁶⁾

Turnover of Spare Parts and Stores

This ratio reveals the utilisation of working capital in the spare parts and stores by relating the volume of spare parts and stores consumed to the value of stock of spare parts and stores at the end of the fiscal year. Like the raw materials turnover, high turnover of the spare parts and stores is the indication of the management's efforts to reduce the working capital investment in this component. On the other hand, a declining spare parts and stores inventory over the various years of study implies that excessive working capital finance has been accumulated in this segment of inventory.⁽⁵⁷⁾ The adequacy of spare parts and stores has also been judged through the calculation of percentage of spare parts and stores to aggregate inventory and spare parts and stores in terms of a months' value of spare parts and stores consumed.

3.8.2 ADEQUACY OF RECEIVABLES

Financial analysts employ two ratios to judge the efficiency of receivable management. One is the accounts receivable turnover and the other is the average collection period.⁽⁵⁸⁾ The same ratios have been followed in the present study.

Accounts Receivable Turnover

The accounts receivable turnover is derived by dividing annual credit sales by total customer receivables.⁽⁵⁹⁾

Accounts receivable turnover indicates the number of times the average debtors turnover each year. Generally, a rising turnover of accounts receivable indicates efficient management of receivables. It also reveals the tightening of the credit policy or eliminating the slow paying customers, while a decline in receivables turnover leads to blocking up of funds in receivables which enhance the working capital requirements of the concern, or in other words, an increasing turnover of receivables reflects a relatively lower investment of working capital in receivables; and a decreasing turnover of receivables indicates that a relatively larger portion of net working capital is invested in receivables.⁽⁶⁰⁾ The turnover of receivables represent a valuable test of the collectability and nature of receivables. It is also an excellent supplementary check to be used in judging the adequacy of current ratio. The slower the collection, the larger would be the net working capital required, and the greater would be the uncollectable accounts expense and collection expense.

Average Collection Period

Average collection period brings out the company's credit policy and the quality of the debtors more clearly. It represents the average number of days for which the company must wait after making a sale before collecting cash from the customers. It indicates the rapidity of collectability. The shorter the average collection period, the better the quality of debtors, as a short collection period implies the prompt payment by the debtors. While an excessively long collection period implies inefficient credit and collection performance. This delays the collection of cash and impairs the company's debt paying capacity. On the other hand, a low collection period is not necessarily favourable. It indicates a very restrictive credit and collection policy. This needs to be relaxed to enhance the sales level and increase the profitability of the company.

However, other significant ratios are used for expressing the adequacy of receivables. They are as follows:

- a) Percentage of accounts receivable to sales.
- b) Accounts receivable in terms of a months' value of sales.

3.8.3 ADEQUACY OF LOANS AND ADVANCES

Loans and advances have been analysed in each of its components, i.e., advances, deposits, percentage of loans and advances to total receivables, percentage of advances to total loans and advances, and percentage of deposits to total loans and advances have been shown separately.

3.8.4 ADEQUACY OF CASH

The adequacy of cash has been measured through the following ratios.⁽⁶²⁾

- (a) Cash in terms of operational requirements for cash.
- (b) Current ratio.
- (c) Liquid ratio
- (d) Percentage of net cash flow to current liabilities.
- (e) Coverage of current liabilities.
- (f) Percentage of liquid funds to current liabilities

Cash is a liquid asset which is of great importance for the daily operations of business companies. The effective control of cash is one of the most important requirements of successful financial management. Cash is the life-blood of business enterprise, and its steady and healthy circulation throughout the entire business operation has been shown separately to be the basis of business solvency.⁽⁶³⁾

Cash in terms of number of days' operational requirements is an important measure to assess the sufficiency of cash. It is not practical to suggest any standard ratio to determine the adequacy of cash. It is influenced by the company's cash flow return, maturity schedule of its current obligations and its ability to procure extra funds in case of need. But financial analysts

have concluded that a business enterprise should keep its cash and near-cash reserves equal to 30 days' normal expenditure. If cash and near-cash reserves are more than this limit, that would be excessive cash

According to Brigham,⁽⁶⁴⁾ adequacy of cash may be measured through current and liquid ratios. Traditionally 2:1 current ratio and 1:1 liquid ratio are taken as satisfactory standard for the purpose. The current ratio indicates the extent of the soundness of the current financial position of the company and degree of safety to creditors, while the latter ratio reveals the ability of a company to settle all of its current obligations in a specific period.

Walter⁽⁶⁵⁾ suggests that for the purpose of judging the liquidity and solvency of the business, matching of the current obligations with net cash flow would be better than the use of current ratio and liquid ratio. Current liabilities indicate the outstanding obligations on a particular date which are continuously being replaced.

The planning and control of cash in the industrial companies has been judged through the following ratios:

- (a) Percentage of cash to current assets.
- (b) Turnover of cash.
- (c) Rate of growth in cash and sales.

3.8.5 ADEQUACY OF WORKING CAPITAL FINANCE

The adequacy of working capital finance has been judged through the comparison of two ratios which are as follows:⁽⁶⁶⁾

- 1) Working capital finance in terms on months' cost of production
- 2) Working capital finance in terms of months' value of sales.

Comparative analysis of the rate of growth in working capital finance, value of sales and value of production has been shown to indicate the relation between working capital finance, the value of production and the value of sales during the period under study.

Sources of Working Capital Finance

For analysing the sources of working capital finance, percentage of cash credit, long-term loan and funds from operations to working capital finance has been shown in the present study. The excess bank borrowings by the industrial companies have been found comparing the actual bank borrowing with the permissible bank borrowings as per the first method and the second method of financing of working capital of the Tandon Study Group. While analysing the adequacy of internal finance, the profitability of the industrial companies has been analysed through gross profit and loss on capital employed, net profit and loss on capital employed, gross margin, net margin, earning power and turnover of capital employed of the industrial companies during the period under study.

Fund Flow Analysis

The analysis of fund flow is an effective management tool to study how funds have been procured for the business and how they have been employed. The statement of variations in working capital is based fundamentally on the same approach used for the preparation of fund flow statement. This technique helps to analyse changes in working capital components between two dates. The comparison of current assets and current liabilities as shown in the balance sheet at the beginning and end of a specific period shows changes in each type of current assets, as well as the sources from which working capital has been obtained.⁽⁶⁷⁾

3.8.6 THE EFFICIENCY OF WORKING CAPITAL

For the purpose of judging the efficiency of working capital, the following two ratios have been followed:⁽⁶⁸⁾

- (i) Turnover of working capital.
- (ii) Percentage of net profit and loss of working capital.

(i) Turnover of working capital

This ratio is measured by dividing the cost of goods sold alongwith the operating and other expenses by working capital. The lower the turnover, the

worst is the utilisation of working capital. The higher the turnover, the better is the utilisation of working capital.

(ii) Percentage of net profit and loss on working capital

Net profit and loss is divided by working capital which shows the rate of profit and loss on working capital. The higher the percentage of net profit, the greater would be the efficiency in the use of working capital and vice-versa.⁽⁶⁹⁾

The efficiency of working capital management depends on the efficient use of working capital in inventory, receivables and cash.⁽⁷⁰⁾ This requires the analysis of the efficiency of the use of funds in their segments which have been made in the following ways.

Uptil now, the specific ratios followed in the present study have been discussed. Now, comes the question of the technique of analysis. The following analyses have been done

- i. The ratio trend analysis of the relevant data on working capital has been made for the period under study.
- ii. The overall average of the total industrial companies under study has been analysed.
- iii. The average ratio of each sector with the overall industrial average has been studied separately.
- iv. The average for each company under the respective sector was calculated and compared with the sector's average by working out specific ratios on working capital.
- v. The sector-wise average of the inventory, receivables, cash and working capital finance have been calculated and compared with overall industrial average, and also the average for each company for each sector has also been calculated.

3.9 WORKING CAPITAL GAP AND BANK FINANCE RECOMMENDED BY THE TANDON STUDY GROUP

The Reserve Bank of India⁽⁷¹⁾ appointed a study group in July 1974 under the chairmanship of Prakash L. Tandon, the then chairman of the Punjab

National Bank, to make a thorough review of the existing system of the follow-up of bank credit and suggest measures to remedy its defects. The study group submitted interim report in October 1974 and the final report in August 1975. The final recommendations of the Tandon Committee study group cover five main aspects of working capital financing in the 15 industries. Out of the five aspects, the investigator has referred to and used "Approach to Lending" which is suitable to the present study of the industrial companies of Jordan.

The study group recommended that the borrower should have a reasonable level of current assets in relation to his production requirements. Banks should bridge the working capital gap. This gap would be financed partly from his owned funds and long-term borrowings and partly by bank borrowings. The maximum bank borrowings are as follows in three different stages

- a) The borrower will have to finance a minimum of 25 per cent of the working capital gap from long-term funds, i.e , owned funds and long-term borrowings.
- b) The borrower will have to finance a minimum of 25 per cent of the total current assets from long-term funds.
- c) The borrower's contribution from long-term funds will be upto the entire core current assets and a minimum of 25 per cent of the balance of current assets.

Any excess over the finance under the norms will have to be reduced progressively by transferring the excess to term loan, to be repayable over a suitable period .The maximum permissible limit for bank finance should be 75 per cent of the working capital gap thus making the current ratio down to 1.5:1. A beginning may be made with the first method, placing all borrowers in this category within a period of one year. But successively all borrowers should move from the first to the third stage which the study group terms as the ideal method of calculating the borrowing limits.

3.10 OPERATIONAL DEFINITION OF THE TERMS USED IN THE STUDY

For the purpose of the present study, the following definitions have been followed :

Current Assets: Current assets are the assets which can be converted into cash within an accounting year and include total inventories, accounts receivable, loans and advances, cash and bank balances in the industrial companies of Jordan.

Current Liabilities: Current liabilities are those claims of outsiders which are expected to mature for payment within an accounting year and include borrowings from banks for working capital needs; trade dues and other current liabilities; sundry creditors, others including advances received, provision for taxation, net of advance of income tax and other current provisions.

Working Capital Finance: Working capital finance means the current assets minus current liabilities and provisions excepting short-term bank borrowings. This is also termed as working capital gap or working capital finance required.

Trade Credit and Provision: It includes the liabilities for goods supplied and works done, liabilities for expenses, liabilities for other finance and workers' profit participating fund.

Inventory: The term inventory is used to designate the aggregate of those items of tangible personal property which are held for sale in the ordinary course of business, or which are in the process of production, or which are to be currently consumed in the production of goods or services to be available for sale. In other words, inventories are the stocks of the product an industrial company is manufacturing for sale and the components that make up the product. The various forms of inventories are raw materials, work-in-process, finished goods, spare parts and stores, and miscellaneous goods.

Receivables: The term receivables is a designation applicable to all claims held against others for the future receipt of money, goods and services. It represents the extension of credit on an open account by the company to its customers. In other words, receivables include accounts receivable, bills receivable, and loan and advances in the industrial companies during a particular period of time.

Loans and Advances. Loans and advances include amounts advanced against purchase of raw materials, spare parts and stores, letter of credit and deposits and expenses, prepaid expenses, security deposits, the share of deposit with the customers and other authorities and other prepayments

Cash. Cash includes cash on hand and cash balances in bank in the current account and short-term deposit.

Liquid Funds: Liquid funds refer to cash and short-term investment. In absence of short-term investment only cash is taken as liquid funds

Capital Employed: Capital employed means total assets consisting of net block plus capital work-in-progress and gross working capital

Net Block: It refers to the total value of fixed assets minus depreciation and allowances at the end of the accounting year and takes into account additions there-to and deductions there-from.

Cost of Sales: This includes all expenses on production/ operation excluding interest, selling and other administrative expenses and plus / minus decretion / accretion to stocks of finished goods and work-in-process.

Cost of Production: It comprises raw materials including consumable stores and other items used in the process of manufacture, power and fuel, direct labour, repairs and maintenance, other manufacturing expenses and depreciation.

Cost of Goods Sold: Cost of goods sold is the sum total of cost of sales plus interest and administration expenses but before providing for selling and distribution expenses.

Gross Profit. Gross profit represents the excess of income over expenditure after providing for depreciation and charges pertaining to previous years but before providing for interest, selling and other administrative overhead

Net Profit Net profit represents the figure arrived at after deducting from gross profit, interest on loan, selling and administrative overhead, but before

appropriation to reserves.

Net Sales: Net sales represent sales net of rebates, discount, excise duty and less inter-departmental and other transfers within the same company

Operating Profit: This includes net profit produced by operating assets before taxes and the item of non-operating expense such as interest payment on loans.

Net Cash Flow It is the sales minus cost of sales plus non-cash charges like depreciation etc

Earning Power: Earning power is the multiplication of net margin and turnover of capital employed Turnover of capital employed is the net sales divided by capital employed and the net margin is found out by dividing net operating income or loss by sales.

Total Cost of Sales: It is the aggregate of cost of sales plus interest, administration and selling expenses

Gross Margin: It is calculated by dividing the gross profit by sales.

Net Margin It is found by dividing the net operating profits by sales

A detailed account of the theoretical framework of the present study is discuss in the following chapter

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