CHAPTER IV

METHODOLOGY OF THE PRESENT STUDY

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INTRODUCTION

This chapter deals with the constitution of the sample, the time frame of study, sources of data, methods of analysis, specific ratios followed in the study and techniques used for the analysis of the total sample. The last section of the chapter deals with the terms used in the present study for the working capital management of the pharmaceutical companies in the State of Maharashtra.

CONSTITUTION OF THE SAMPLE:

Keeping in view the need for an indepth analysis of the working capital of the pharmaceutical companies, a group of 13 large size pharmaceutical public limited companies with their registered offices in the State of Maharashtra have been selected on the basis of judgement sampling method. The sample is selected from the State of Maharashtra because out of the total number of the pharmaceutical units working all over India, majority of the units are located only in the four States namely Maharashtra, Gujarat, West Bengal and Tamilnadu[1]. Out of these four States, the highest number of units of the industry is concentrated in the State of Maharashtra. Thus it was felt appropriate to select the sample from Maharashtra State, as it is the most representative one.

For selecting the sample, the list of companies in the pharmaceutical industry was drawn from the "Bombay Stock Exchange Official Directory". According to this directory, there are 32 bulk drugs and formulations, produced by public limited companies; out of which 13 large size pharmaceutical public limited companies with their registered offices in the State of Maharashtra have been selected on the basis of the judgement sampling method for a period of ten years from 1989-90 to 1998-99. This sample works out to 40.62% of the total number of public limited companies registered in the State of Maharashtra. On the basis of the paid up capital and sales, the sample accounts for approximately 49% and 62% respectively. Considering theses factors, the size of the sample seems to be quite representative for drawing inferences which could applied to a large extent the pharmaceutical industry of the State of Maharashtra. In this study, the companies engaged solely in trading, producing exclusively ayurvedic, homeopathic, and unani medicines are excluded. Other companies producing allopathic drugs and pharmaceutical medicines less than 50% of the total production have also been excluded.

The sample companies are classified into three categories according to age. The companies which have completed 25 years of operation as on 1989-90 are treated as new; the companies which have completed more than 25 years of operation but below 50 years are treated as moderately old. But the companies which exceed 50 years of operation as on 1989-90, are treated as old companies. The following section present the classification:

Period of Incorporation	Category	Number of Companies and its Percentage total sample
1964-1989	New	2 (15.38%)
1939-1963	Moderately old	8 (61.54%)
Prior to 1939	Old	3 (23.08%)

Out of the 13 sample units 15.38% are categorised as new, 61.54% as moderately old and 23.08% as old companies. The composition of sample reflects that majority of the selected units are well-established companies.

For the purpose of this study, only large size public limited companies having tangible assets more than Rs. 5 crores in the year 1989-90 have been selected[2]. The purpose of selecting such companies is that it constitutes a major share of the total assets of all the public limited companies in that year. The study of a small group of companies controlling a major share is believed to be a good representative of the whole sector and therefore has been chosen for the study.

THE TIMEFRAME OF STUDY:

The study covers a period of one decade from 1989-90 to 1998-99. There are several reasons for selecting the period of study. This period has witnessed many economic and political changes. The Central Government had adopted a policy of liberalisation and globalisation from 1985 which accelerated from 1991 on wards. Corporate activity had undergone rapid changes in the last decade due to many policy decisions relating to capital markets, banking sector, industrial licensing policy, corporate laws, taxation laws, Foreign Exchange Regulation Act, etc. The first Narsimaham Committee was appointed in November 1991 to suggest various measures for financial reforms. Government accepted and implemented many of their recommendations. The major recommendation are reduction in the Statutory Liquidity Ratio (SLR), reduction in the Cash Reserve Ratio (CRR), Phase out of directed credit, deregulation of interest rates in a phased manner, attainment of capital adequacy norms by the banks, tightening of prudential norms, entry of private banks and easing of controls on foreign banks, sale of bank equity to the public, easing of regulations on capital markets, combined with the entry of Foreign Institutional Investors (FIIs) and better supervision[3].

In the light of the liberalised economic policies initiated, the Government of India repealed the Capital Issues (Control) Act on the 29th May,1992 and the office of the controller of the capital issues was subsequently abolished. In place of Controller of Capital Issues, Securities Exchange Board of India (SEBI) was established in 1992. SEBI took number of steps to improve the existing practices and bring absolute transparency in capital market. It removed control over prices and premium on issue of shares, relaxed the guidelines for the issue of bonus shares. SEBI also issued a new take over code and brought UTI under its regulatory jurisdiction. To improve the scope of investment by mutual funds, they were permitted to underwrite public issues and the guidelines of its investment were also relaxed. SEBI allowed foreign institutional investors to have access to the Indian capital market. Indian companies were allowed to have an access to international capital markets through EURO equity shares. Investment norms for non-resident Indians were also liberalised[4]. Over the Counter Exchange of India (OTCEI) started its operations in 28th November 1992[5]. On the recommendations of Pherwani the Committee 1991, National Stock Exchange of India was set-up in 1993 to encourage stock exchange reforms through a system of modernisation and competition [6]. The Depositories Act which came in to force during 1995-96 is a milestone in the development of capital market[7].

Major amendments were also made in the Companies Act 1956, for the smooth operations of buy back of shares, inter-corporate investments, equity are some of them. During this period, Indian companies witnessed a large numbers of amalgamations and mergers.

Government appointed various committees viz. Nayak Committee in 1991, Jillani Committee in 1992, Vaz Committee in 1993. They suggested far reaching changes for working capital financing by the commercial banks to the industries. Lending norms for banks were liberalised and banks were given freedom to decide levels of holding individual items of inventories and receivables. Term lending financial institutions, Industrial Finance Corporation of India (IFCI), Industrial Credit and Investment Corporation of India (ICICI) were converted to companies and allowed to go to public for raising share capital. Convertibility clause is now no longer obligatory for assistance sanctioned by term lending institutions[8]. In order to integrate non banking financial companies within the main stream of overall financial sector, the Reserve Bank initiated a comprehensive programme of reforms for the finance companies.

In the wake of globalisation the Government reduced the rates on indirect taxes. The government also reduced the rates of custom duties as India is one of the countries who signed treaty on WTO and GATT in the year 1994-95. Government also reduced the rate of income tax on corporate assesses from 50% in 1989-90 to 35% in 1998-99. During the period selected for study income tax rates on all other categories of assesses had also declined substantially. Further important changes in the Income Tax Act, 1961 were introduction of corporate dividend tax, minimum alternative tax, etc. In the year 1998 the Government abolished the Gift Tax Act.

New industrial policy and drug policy was announced in the year 1991. Government also modified the drug policy in 1994 wherein number of items of drug under the price control was reduced from 142 items to 73 items.

These are some of the factors that the selection of 1989-90 as the first year of study. The period of study was confined to 1998-99 because it was the last year of the millennium. The period of study includes two major five-year plans such as the Eighth and Ninth Five Year Plans of the national economy.

SOURCES OF DATA AND DATA COLLECTION:

The study is based on the analysis of data from the annual balance sheets, profit and loss accounts and audit reports of thirteen pharmaceutical companies in the State of Maharashtra. The data used in the present study are mainly of two types: primary data and secondary data. The primary data consists of the questionnaire which was administered done through correspondence with the management of the selected pharmaceutical companies. The questionnaire was framed keeping in mind the main objectives of the study and to gather details which were lacking in the published reports. While the secondary data consists of the annual balance sheets, profit and loss accounts, directors and auditor's reports of the pharmaceutical companies of the State of Maharashtra, this was collected by personal visits to the companies and also through correspondence to the registered offices of the respective companies. The other relevant data which is not available in the published annual reports and accounts of the sample companies for the purpose of study have been obtained from Bombay Stock Exchange Official Directory and Kothari's Industrial Directory of India.

The data relating to the financial position of 'Pharmaceutical Industry in India' and 'All Industries in India' have been gathered mainly from the Reserve Bank of India Bulletin published by the Reserve Bank of India and CMIE. Other publications and magazines were also used for the purpose of comparison were viz., Chartered Secretary, Economic Times, The Chartered Accountant, The Management Accountant, The Journal of Finance, Finance India, The Indian Journal of Finance and Research and The Indian Economic Journal.

SAMPLE OF THE STUDY:

For the purpose of an indepth analysis of various aspects of working capital management and their implications on managerial efficiencies,.thirteen drugs and pharmaceutical companies have been selected using the judgement sampling method.

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

1. BURROUGHS WELLCOME LTD.
2. CIPLA LTD.
3. DUPHAR-INTERFRAN LTD.
4. E. MERCK LTD.
5. FULFORD LTD.
6. GERMAN REMEDIES LTD.
7. GLAXO LTD.
8. HOECHST MARION ROUSSEL LTD.
9. KNOLL PHARMACEUTICALS LTD.
10. PARKE-DAVIS LTD.
11. PIFZER LTD.
12. RPG LIFE SCIENCES LTD.
13. UNICHEM LABORATORIES LTD.

METHODS OF ANALYSIS AND STATISTICAL TECHNIQUES USED IN THE PRESENT STUDY:

The present study is mainly based on the analysis of the problems of working capital management. The approach adopted is basically analytical and descriptive in nature. Before deciding on the broad approach or methods of analysis for the present study, relevant literature on the 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 objectives of this study, it was decided to use the ratio analysis technique to analyse the problems of working capital management of the selected pharmaceutical companies of the State of Maharashtra. The ratio analysis technique is used because it is universally accepted as a technique for the analysis of the working capital of the companies. Statistical measures like average, coefficient of variation, coefficient of correlation, and trend analysis have also been used.

RATIO ANALYSIS OF WORKING CAPITAL

This is the most commonly used technique which deals practically with each and every aspect of working capital analysis. Ratio analysis is the most useful 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 firm[9]. It involves comparison for a useful interpretation of each and every aspect of working capital analysis. In this technique, certain ratios are computed and then compared with the guidepost. Myer[10], Weston[11], Kuchhal[12], Choudhary[13], Johnson[14], Gole[15], Bogen[16], Ramamoorthy[17], Rao[18], Baruch[19], Guthman[20], Tandon Study Group[21], Reserve Bank of India[22], Howard[23], Gibbs[24], Hampton[25], Varseny and Murthy[26], Gitman[27], Vanhorne[28], Pandey[29], Foulke[30], Bolton[31], Beaver[32], Omar[33], Robbins[34], Chakraborty[35], Horrigan[36], Kennedy[37], Doris Lillian[38], Bliss[39], Alexander[40] recommended the ratio analysis technique in evaluating the problems and efficiency of working capital management.

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 a given period. 'The criteria for measuring the efficient uses of working capital are the rate of net profits and loss on working capital and turnover of the gross working capital employed in the companies[41]. The efficiency of the capital is measured by the rate at which the capital of the business moves through the various business processes i.e. inventory, receivable and cash. Theis rate is measured through the turnover of working capital[42]. The gross working capital turnover reflects the productivity of the working capital employed in the business[43].

For the purpose of analysing the working capital management of the pharmaceutical companies in Maharashtra, mainly following specific ratios are used:

INVENTORY:

1) Total inventory as a percentage to total current assets.
2) Total inventory turnover ratio and holding period based on cost of goods sold and sales.
3) Raw materials as a percentage to total inventory
4) Raw materials turnover ratio and holding period
5) Semi finished goods as a percentage to total inventory

6) Semi finished goods turnover ratio and holding period
7) Finished goods as a percentage to total inventory
8) Finished goods turnover ratio and holding period
9) Stores and spares as a percentage to total inventory
10) Stores and spares turnover ratio and holding period

RECEIVABLES:

1) Total receivables as a percentage to total current assets
2) Total debtors to total receivables
3) Debtors more than six months and less than six months as a percentage to total debtors
4) Loans and advances as a percentage to total receivables
5) Other receivables as a percentage to total receivables
6) Accounts receivable turnover ratio and debt collection period
7) Bad debts as percentage to total sales and total debtors.

CASH:

1) Cash as a percentage to total current assets
2) Cash position ratio
3) Cash to sales ratio
4) Cash in terms of days' operational requirements for cash.
5) Current ratio
6) Liquid ratio
7) Cash flow Statements of each individual selected company
8) Net cash flow to current liabilities
9) Coverage of current liabilities

WORKING CAPITAL FINANCE:

1) Working capital finance in terms on months' cost of production.
2) Working capital finance in terms of months' value of sales.
3) Short-term bank borrowings as a percentage to total working capital finance.
4) Funds from operation as a percentage to total working capital finance.
5) Long-term funds as a percentage to total working capital finance.

WORKING CAPITAL MANAGEMENT:

1) Turnover of working capital.

2) Percentage of gross working capital to total capital employed.

3) Percentage of each component of current assets to net working capital

The detailed analysis of the above mentioned ratios is discussed at various places in the study.

TECHNIQUES OF ANALYSIS:

In the analysis, a comparative study of the relative position of different components of working capital for the period 1989-90 to 1998-99 with the overall decennial average of each of them has been made. The following techniques of analysis have been employed.

1. Overall decennial average percentage of inventory, accounts receivable and cash to total current assets have been studied individually.

2. Decennial average percentage of each constituent of inventories such as raw materials. semi finished goods, finished goods and stores & spares, as the proportion to total inventory is analysed individually.

3. Decennial average turnover and holding period of total inventory and each of its constituent have been studied individually.

4. Decennial average percentage of each constituent of receivables such as trade debtors, loans and advances and other receivables as the proportion to total receivables is looked at individually.

5. Decennial average turnover and debt collection period of total debtors has been examined individually.

6. Decennial average percentage of current assets to current liabilities and quick assets to current liabilities are analysed individually.

7. Decennial average turnover of cash and number of days' operational requirement for cash has been studied individually.

8. Gross margin, net margin, earning power, assets turnover ratios has been analysed to test the funds generating capacity of the selected pharmaceutical companies.

9. Decennial average percentage of different sources financing working capital requirements, such as short-term bank borrowings, funds from operation and long-term funds are examined individually.

10. Decennial average percentage of each component of current assets and its constituent has been compared with the data of 'Pharmaceutical Industries in India' and 'All Industries in India'.

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