CHAPTER III

METHODOLOGY OF THE PRESENT STUDY

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INTRODUCTION:

This chapter attempts at providing an overall procedural details of the research undertaken. The method adopted for selection of sample, the time frame of the study, sources of data, methods of analysis, specific ratios followed in this study and techniques used for analysis of the total sample are also highlighted. The last section of the chapter defines some of the terms used in the present study of the financial appraisal of medium and large size multinational drugs and pharmaceutical companies in Mumbai.

CONSTITUTION OF THE SAMPLE:

It is highly impossible task to include the entire sample for the purpose of any study. Since the aim of the study is an in-depth analysis of financial appraisal of multinational drugs and pharmaceutical companies, a group of 11 medium and large size multinational drugs and pharmaceutical companies with their registered offices in Mumbai and those which are listed on Bombay Stock Exchange have been selected on the basis of judgment sampling method. As majority of the multinational drugs and pharmaceutical companies operating in India are located in Mumbai, it was felt appropriate to select the sample from Mumbai, as it is the most representative one

For selecting the sample, the list of companies in the pharmaceutical industry was drawn from "PROWESS" database of Centre for Monitoring Indian Economy (CMIE) According to this, there are 29 multinational drugs and pharmaceutical companies operating all over India with their main activity as drugs and

pharmaceuticals. Out of these, 22 companies i.e. 76% have their registered offices in Mumbai From this, 11 medium and large size multinational drugs and pharmaceutical companies have been selected on the basis of judgement sampling method for a period of ten years from 1990-91 to 1999-00. This sample works out to 50% of the total number of multinational drugs and pharmaceutical companies registered in Mumbai. On the basis of paid up capital and sales, the sample companies account for approximately 68.97% and 87.86% respectively. Considering these factors, the size of the sample companies seem to be representative for drawing inferences, which could be applied, to a large extent to all the multinational drugs and pharmaceutical companies operating in India. The study excludes all those companies engaged solely in trading and producing exclusively ayurvedic, homeopathic and unani medicines. Other companies producing allopathic drugs and pharmaceutical medicines, which have less than 50% of their total production, have also been excluded.

For the purpose of study, only medium and large size multinational drugs and pharmaceutical companies having paid up capital of more than Rs. 1 crore in the year 1990-91 have been selected.[1] The rationale for selecting such companies is that it constitutes a major share of the total paid up capital of all the multinational pharmaceutical companies during that year Hence a study of small group of companies controlling a major share is judged to be a good representative sample for the whole sector and therefore form part of the present study.

CLASSIFICATION OF SAMPLE:

The sample companies selected for the present study have been classified in terms of size and age The different classifications are discussed below

Size:

The size of the company was determined taking in to account the paid up capital & investment made in its net tangible fixed assets as on 1990-91. The classification of the companies taking into account the paid up capital as on 1990-91 is as follows:

TABLE NO. M - 1

CLASSIFICATION OF COMPANIES ON BASIS OF PAID UP CAPITAL

AMOUNTS OF PAID UP CAPITAL (Rs. In Crores)	SIZE	NO. OF COMPANIES AND IT'S PERCENTAGE TOTAL SAMPLE
1. Less than 1	Small	Nil
2. Between 1 & 5	Medium	02 (18.18%)
3 5 & above	Large	09 (81.82%)

Large sized companies having paid up capital of more than Rs 5 crores are found to be maximum constituting 81 82% of the total sample units, whereas medium size companies comprises of 18.18%, while none of the sample companies falls in the category of small size.

The size of company has also been classified taking into account the investment in net tangible fixed assets as on 1990-91. The classification is as follows.

TABLE NO. M - 2

CLASSIFICATION ON BASIS OF INVESTMENT IN FIXED ASSETS

INVESTMENT IN NET FIXED ASSETS AS ON 31.3.1991 (Rs In Crores)	SIZE	NO. OF COMPANIES & IT'S % IN TOTALSAMPLE
1 25 and above	Very big	04 (36 36%)
2 Between 5 & 25	Big	06 (54 54%)
3 Less than 5	Small	01 (09 09%)
TOTAL		11

The big companies having investment between Rs. 5 & 25 crores in their net tangible fixed assets are found to be maximum constituting 54.54% of the sample. The very big companies with an investment of more than Rs.25 crores and small companies with less than Rs. 5 crores investments in net tangible fixed assets represent 36 36% and 9.09% of the sample respectively.

Age:

The sample is classified into three categories according to age. The companies, which have completed 25 years of operation as on 1990-91, 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 1990-91, are treated as old companies. The following section presents the classification:

TABLE M - 3

CLASSIFICATION OF COMPANIES ON BASIS OF AGE.

PERIOD OF INCORPORATION	CATEGORY	NUMBER OF COMPANIES & IT'S PERCENTAGE TOTAL COMPANIES.
1965-1990	New	01 (9.09%)
1940-1964	Moderately old	08 (72.73%)
Prior to 1940	Old	02 (18.18%)

Out of eleven sample units, 9.09% are categorised as new, 72.73% as moderately old, and 18 18% as old companies The composition of the sample reflects that majority of the selected units are well established

TIME FRAME OF STUDY:

The period of study has been confined to the years between 1990-91 and 1999-00 covering a decade i.e. in the 1990's. The selection of this time period for the present study was based on several reasons. This decade experienced many economic and political transformations. Economic reforms in India started in 1985, which accelerated from 1991 onwards. In 1991 new industrial policy was announced which aimed at liberalisation, globalisation and privatisation. The new industrial policy brought about a sea change in the management of corporate activities due to many policy decisions such as foreign investments being made simpler and allowed in many sectors, import licensing abolished, tariff rates reduced, export regulatory framework dismantled, industrial policy virtually removed, direct and indirect taxes being lowered, privatisation of public sectors initiated, raising capital in domestic and foreign markets made easier, foreign portfolio investments were encouraged and so on. Many multinational companies had set up their production basis in India during the period 1990-91 to 1999-00.[2]

Under the new industrial policy, the industrial approval system in all industries has been abolished except for 18 strategic or environmentally sensitive industries. In 34 high priority industries foreign direct investment up to 51% is approved automatically if certain norms are satisfied.[3]

In the light of liberalisation, The Monopolies and Restrictive Trade and Practices Act has also been amended to remove the threshold limits to assets in respect of MRTP companies and dominant undertakings. This eliminates the requirements of prior approval of the Central Government for expansion establishment of new undertakings, managers etc , and for appointment of certain directors [4]

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 were reduction in statutory liquidity ratio (SLR), reduction in 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 (FII) and better supervision.[5]

The office of Controller of Capital Issues was completely dismantled and in its place Securities Exchange Board of India (SEBI) was established in 1992. The existing and new companies could now issue shares at a price fixed by themselves without prior permission from any authorities provided they follow a few SEBI regulations with respect to transparency of the prospectus. [6] SEBI also issued the takeover code and brought UTI under its regulatory jurisdiction. Indian securities market was also opened to register foreign institutional investors (FII) subject to a certain ceilings.[7] In addition to this, in September 1992 Indian companies were permitted to tap the Euro market instruments such as GDR and Euro Convertible bonds. Further, in tune with the process of liberalisation and reforms in the primary market, SEBI in 1994 came out with revised guidelines for bonus issue and had done away with certain restrictive requirements such as profitability test and residual reserves etc. Over the counter exchange of India started its operations on 28th November 1992 [8] On the recommendations of Pherwani Committee 1991, National Stock Exchange of India was set up in 1993 to encourage stock exchange reforms through a system of modernisation and competition.[9] The Depositories Act, which

came in to force during 1995-96, was also a landmark in the development of capital market [10] For the smooth operation of buy back of shares, inter corporate investments, equity etc., major amendments were also made in the Companies Act of 1956.

The Government of India modified the Drugs and Prices Control Order in 1995 wherein the number of drugs under price control was reduced from 142 to 76.

On 8th January 1993 the government also promulgated an ordinance to amend the Foreign Exchange Regulation Act 1973 (FERA). [11] Later on, in the year 1999 the FERA Act was replaced by a new act known as Foreign Exchange Management Act (FEMA).

The Government of India appointed various committees such as Nayak Committee, Jillani Committee, Vaz Committee to suggest far reaching changes in the working capital financing by commercial banks to the industries. Lending norms for bank were liberalised and they were given freedom to decide the levels of holding individual items of receivables and inventories. Term lending financial institutions such as ICFI and ICICI were converted to companies and allowed to go to public for raising share capital. Convertibility clause is now no more obligatory for assistance sanctioned by term lending institutions.[12] In order to integrate non-banking financial companies within the main stream of overall financial sector, the Reserve Bank of India initiated a comprehensive programme of reforms for the finance companies

These were some of the reasons for selecting a period of ten years starting from 1990-91 and ending in 1999-00. Moreover the period of study includes Eighth and Ninth Five-Year plans of the national economy

SOURCES OF DATA AND THEIR COLLECTION:

The study is based on the analysis of secondary data from the annual balance sheets, profit and loss account and audit reports of eleven multinational drugs and pharmaceutical companies in Mumbai. The data is collected by personal visits and through correspondence with the registered offices of the respective sample companies. The other relevant data, which is not available in the published annual reports and accounts of the sample companies, have been obtained from the Bombay Stock Exchange Official Directory and Kothari's Industrial Directory of India. The secondary data related to the overall growth and development of pharmaceutical industry in India is collected from annual reports of Organisation of Pharmaceutical Producers of India, Indian Drugs Manufacturing Association Bulletins, Drugs and Pharmaceutical Industry Highlights, Eastern Pharmacist, and The Pharmaceutical Guide.

The statistics related 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 used for the purpose of comparison are viz., Chartered Secretary, Economic Times, Economic and Political Weekly, Abhigyan, Indian Management, The Chartered Accountant, The Management Accountant, The journal of Finance, Finance India, Financial Analyst, The Indian Journal of Commerce, Company News and Notes, The Indian Journal of Finance and Research, Journal of Corporate Finance, The Indian-Economic journal, and The journal of Accounting and Finance.

SAMPLE OF STUDY:

For the purpose of an extensive study on various facets of financial performance, eleven multinational drugs and pharmaceutical industry have been selected using the judgment sampling method.

The Multinational Drugs and Pharmaceutical Companies selected for the purpose of the present study are as follows:

1. ABBOTT LABORATORIES (INDIA) LTD.
2. AVENTIS PHARMA LTD.
3. BURROUGHS WELLCOME (INDIA) LTD.
4. DUPHAR-INTERFRAN LTD.
5. E MERCK (INDIA) LTD.
6 GERMAN REMEDIES LTD.
7 GLAXO INDIA LTD
8 KNOLL PHARMACEUTICALS LTD
9 NOVARTIS INDIA LTD.
10 PARKE-DAVIS (INDIA) LTD.
11 PFIZER LTD.

METHODS OF ANALYSIS AND STATISTICAL TECHNIQUES USED:

The present study is an attempt to appraise the overall financial performance of the selected sample companies. The approach adopted is basically investigative and interpretive in nature. Before deducing on the methods of analysis for the present study, relevant literature on research methodology and research studies related to various facets of financial management were reviewed (as mentioned in Chapter II) On the basis of the review and the objective of study, the data collected

from the financial statement of the companies are analysed with the help of different accounting and statistical tools. The accounting techniques like ratio analysis, common size statement analysis, comparative statement analysis, trend analysis and funds flow analysis have been used for the financial appraisal of medium and large multinational drugs and pharmaceutical companies in Mumbai. Statistical measures like measures of central tendency (average), co-efficient variation, co-efficient of correlation, regression analysis, index number, chi-square test, 't' test, and time series analysis (least square method) have also been applied. Moreover diagrammatic and graphical representation of data has also been made.

TECHNIQUES OF FINANCIAL APPRAISAL:

(a) RATIO ANALYSIS:

The ratio analysis is a principal technique of financial appraisal, which is used, in modern times. A ratio is simply one number expressed in terms of another. It is an expression of relationship spelt out by dividing one figure with the other. " A ratio is the relation of one amount X, to another amount Y, expressed as the ratio of X to Y or X : Y or as a fraction, or number or percentage. [13] "Ratios are simply a means of highlighting in arithmetical terms the relationship between figures drawn from financial statements."[14] In the words of J. Batty, the term "accounting ratios" are used "to describe significant relationship which exist between figures shown on a balance sheet, in a profit and loss account, in a budgetary control system or in any other part of accounting organisation "[15]

The ratio analysis is a device to diagnose the financial disease of an enterprise. It points out whether the financial condition of the firm is very strong, good, partly good, questionable or poor. Through ratios, an analyst can x-ray the financial growth, development and the present condition of a business enterprise. [16] In

financial appraisal a ratio is used as yardstick for evaluating the financial position and performance of the firm. The ratio analysis is a process of determining and interpreting numerical relationship based on financial statement. "It provides guidelines and clues especially in spotting trends towards a better or poor performance, and in finding out significant deviation from any average or relatively applicable standard."[17] It helps the analyst to make quantitative judgement with regards to companies' financial position and performance. It is worked out in the following three ways: [18]

1. The phrase method such as "two for one" or " one and half to one".
2 The percentage method such as 200 percent etc.
3. The rate method such as 4 times in a year or once in every 13 weeks.

The phrase method and rate method has an advantage in that it may develop facts which will be easily remembered. The percentage scheme has the advantage of greater precision.

Although ratio analysis is used widely but it should be kept in mind that "no one ratio will give the entire picture, but they tend to give indications, which cumulatively assist considerably in appraisal of the financial position and operations of the organisation."[19]

(b) COMMON SIZE STATEMENT ANALYSIS:

Common size statements is one of the most important tools of financial appraisal and helps in studying key changes and trends in the financial position of a business concern They are often called "component percentage" or '100 percent' statements or 'vertical statements'. It is a technique under which each item is stated as the percentage of total of which that item is a part Percentage of each item indicates the relation of the individual item to its respective total. It is useful in

vertical financial analysis and comparison of two-business enterprise at a certain date. Actually this type of analysis first converts each individual rupee amount in percentage of the total amount or the group it belongs to " As a result the relative importance of each individual amount stands out clearly." [20]

(c) COMPARATIVE STATEMENT ANALYSIS:

Conclusions can be drawn from financial statements. However, from the analysis point of view one year's statement is not sufficient for constructive decisions. To have a better analysis and results, the financial statements of more than one year are compared. For this purpose comparative statements such comparative balance sheet, comparative income statements and comparative statement of retained earnings are prepared.

Comparative financial statements are statements of the financial postion of a business so designed as to provide time perspective to the considerations of various elements of financial postion embodied in such statements.

Many times, instead of the present position on a particular date, the past history of the concern plays a more significant role. Comparative financial statements are very useful to an analyst because they not only contain the data appearing in a single statement but also information necessary for the study of financial and operating trends over a period of years. These indicate the direction of the movement with respect to the financial position and operating result.

A comparative statement may also show, in addition to data for several consecutive periods, cumulative figures and annual average for the period. Financial statement, which shows annual average, are valuable from the point of levelling of the item over several years, i e data for periods of high and low business activity are averaged.

(d) TREND ANALYSIS:

Financial appraisal of a concern for a short period would not convey in true sense its nature of operation. Trend analysis makes it easier to understand the changes in items or a group of items over a period of time and to draw conclusions regarding the changes in data. Kennedy and McMullen remarked that " For the purpose of financial appraisal an effective use of financial ratios can be made by observing the behaviour of ratios over a period of time. As one of the management tools, the importance of looking into trends and tendency of events between the financial statements prepared at different periods cannot be lost sight of where the business was?, where the business is?, and the where the business will be? - all these are being clearly revealed through trend analysis."[21] For the purpose of trend analysis, a base year is chosen and the amount of that item relating to base year is taken equal to 100 and index numbers are calculated for other years based on the amounts of that item in those years. It is a dynamic method of analysis showing the changes over a period of time. For a proper trend analysis, the trend should be studied at least over a period of five or more years. This method of analysis indicates the direction in which a concern is going and on this basis future forecast can be made.

(e) FUNDS FLOW ANALYSIS:

This technique is used to find out the sources of funds and their applications The meaning of "Fund Flow" or "Flow of Funds" illuminates the concept of funds flow clearly The statement, which analyses the movement of funds i.e. the reasons for changes in working capital, is "Funds Flow "statement. It provides complete information regarding the financing of activities, applications of resources during a specified period and effect on the liquidity position of the firm.

Funds flow as a statement, either perspective or retrospective sets out the sources and applications of the funds of an enterprise The purpose of the statement is to indicate clearly the requirement of funds, how they are proposed to be raised, their efficient utilisation and application of the same [22]

The importance of fund flow statement lies in the fact that, the information which is provided by it is neither provided in the balance sheet nor in the income statement. It is a very useful tool in the analytical kit of the management. The funds flow statement helps the analyst to appraise the impact and quality of the management decisions in the business activities during a given period of time.

(f) MEASURES OF CENTRAL TENDENCY:

For the purpose of analysing financial statements one needs a value out of the collected data, which represents the whole data. This is possible only with the use of one or more measure of central tendency. In the words of Britle, '" The most useful way of locating the data is to compute a measures of central tendency. The measures of central tendency will give us summary statistics indicating the location of the data.[23] Measures of central tendency give us what we can expect a typical or middle data point to be.[24] As defined by Riggleman and Frisbee, " An average is a single value which is taken to represent a group of values. Such a representative value may be obtained in several ways, for there are several types of averages. [25] Out of the averages, the arithmetic mean is the most widely used and generally understood. As observed by Riggleman and Frisbee, 'Probably the most commonly used average is the arithmetic average, or the arithmetic mean. This is an average obtained by adding the values of the cases and dividing it by the number of cases.[26]. For the financial appraisal of selected sample companies, the arithmetic mean is used in the relevant chapters.

(g) CO-EFFICIENT OF VARIATION:

The co-efficient of variation is used for comparing variability of two or more than two series. That series (or group) for which the co-efficient of variation is greater is said to be more variable or conversely less consistent, less uniform, less stable or less homogeneous. On the other hand, the series for which co-efficient of variation is less is said to be less variable or more consistent, more uniform, more stable or more homogeneous. Co-efficient of variation denoted C.V. is obtained as follows:

C.V. = Standard Deviation / Mean x 100

(h) REGRESSION ANALYSIS:

With the help of regression analysis, an analyst can estimate or predict the unknown values of one variable from the known values of another variable. It helps in finding out the average probable change in one variable given a certain amount of change in another. Regression analysis is a technique to study the functional relationship between the variables for forecasting the value of the dependent variable on the basis of the value of the independent variables. The variable which is to be predicted is known as the dependent variable and the variable which influences the magnitude of the dependent variable is known as independent variable. Mathematically, the analysis indicates inherent casual relationship between the variables, e.g., the regression analysis is presented in mathematical form as:

$$Y = ax_1 + bx_2 + cx_3 + dx_4$$

Where Y is dependent variable, x_1, x_2, x_3 x_4 are independent variables and a, b, c, d ..are the weights attached to various factors known as regression

coefficients. The relationship between the variables forming part of the education is qualified by using past data and the analysis is used as forecasting device.

(i) CORRELATION ANALYSIS:

Correlation analysis is a technique used to test the association between two sets of paired data. Correlation analysis is a method of determining whether two sets of data are related in a manner such that they increase together, or if one increases, the other decreases. Most of variables like sales & gross profit, sales & net profit, debt & equity, working capital & sales, fixed assets & sales etc., show some kind of relationship with each other. The study of correlation between such variables is of immense importance in business life. Correlation analysis helps in determining the existing relationship and measuring it. It contributes to the economic behaviour, helps to locate the critically important variables on which others depend, reveals to the analyst the connection by which disturbances spread and suggest the paths through which stabilising forces become effective. The present study makes use of the technique of Karl Pearson's co-efficient of correlation, which is applied for financial appraisal of medium and large size drugs and pharmaceutical companies in Mumbai.

(j) *'t'* --- TEST:

To further confirm the relationship drawn by the coefficient of correlation of different variables, help of 't' test is taken The value of 't' at 5 % level of significance is calculated at (n-2) degree of freedom, where n =11 If the calculated value of 't' exceeds the tabular value at 5% level of significance the value of 'r' is significant But if the calculated value of 't' is less than the tabular value 'r' it is not significant

(k) CHI-SQUARE (χ^2) TEST:

The chi-square (χ^2) test is one of the simplest and most widely used non-parametric tests in statistical work. This helps to find out whether a given discrepancy between theory and observation can be attributed to chance or whether it results from the inadequacy of the theory to fit the observed facts. If χ^2 is zero it means that the observed and expected frequencies completely coincide. The greater the value of χ^2 the greater would be the discrepancy between observed and expected frequencies. The formula for computing Chi-square is

$$\chi^2 = \sum(O-E)^2/E$$

Where *O* is observed frequency and *E* is expected or theoretical frequency.

The calculated value of χ^2 is compared with the table value of χ^2 for given degrees of freedom at specified level of significance. If the calculated value of χ^2 is greater than the table value, the difference between the theory and observation is considered to be significant. On the other hand, if the calculated value of χ^2 is less than the table value the difference between theory and observation is not considered significant, i e. it could have arisen due to fluctuations of sampling The technique of Chi-square is applied for the financial appraisal of selected multinational pharmaceutical companies.

(l) TIME SERIES ANALYSIS:

Time series analysis is used to detect patterns of change in statistical information over regular intervals of time These patterns are projected to arrive at an estimate for the future. As defined by Levin, " Time series analysis is the quantitative method we use to determine patterns in data collected over time. [27] As

observed by Greenwald, "A time series is a temporal sequence of distribution with the observations chronologically arranged. Since time is present explicitly as a variable, time series analysis is often considered a study of dynamic variability. [28] According to Wessel, Willet and Simone, " The variation of time series is usually broken down into four component elements: secular trend seasonal variation, cyclical variation and random or irregular influences." [29] The changes in data are the result of the combined impact of these four components. Thus, one can say that the original data (Y) is equal to the sum of components:

$$Y = T + S + C + I$$

Where Y= Original data, T = Secular trend, S = Seasonal Variation, C = Cyclical Variation and I = Irregular influences.

This is the additive model or an expression of the original series in the elements of the times series. The process of analysis of times series is intended to isolate and measure the separate effects of these forces as they appear in a given series over a period of time.

For the purpose of financial appraisal of selected multinational pharmaceutical companies the secular trend values computed by the method of least squares at relevant places.

(m) DIAGRAMMATIC AND GRAPHIC PRESENTATION OF DATA:

Diagrams and graphs are visual aids, which give a bird's eye view of a given set of numerical data. They present the data in simple, readily comprehensible and intelligible form. Graphic presentation of statistical data gives a pictorial effect to what would otherwise be just a mass of figures Diagrams and graphs depict more information than the figures shown in the table These clarify the existing trend in figures and the changes taking place In the words of Mills, " When the results of

observations or statistical investigations have been secured in quantitative form, one of the first steps towards analysis and interpretation of the data is that of presenting these results graphically.[30]

· In the present study form the techniques of diagrammatic as well as graphical presentation of data is used for presenting the data in a simple, readily comprehensible and intelligible form. Under the technique of diagrammatic presentation of data the methods of simple bar diagram, subdivided bar diagram and pie charts, line diagrams are proposed to be used.

SPECIFIC RATIOS FOLLOWED IN THE STUDY:

The financial appraisal of medium and large multinational drugs and pharmaceutical companies in Mumbai is based on financial statements. One of the most important techniques available for appraisal of financial statements is The Ratio Analysis. The main purpose of ratio analysis is to evaluate profitability, liquidity and solvency position of a business concern. The different categories of ratios used for the purpose of the present study are as follows:

1. **Profitability ratios:** The survival and growth of a company is dependent upon its earning of profits which depend upon its ability to generate revenue at minimum costs. The profitability of the sample companies has been judged through two angles, firstly in relation to sales and secondly in relation to investments. Profitability on sales has been judged through ratios such as gross profit margin, operating ratio, operating expenses ratio, and net profit margin, while profitability on investment has been judged through ratio such as return on total assets ratio, return on capital employed, return on equity, earnings per share and dividend payout ratio

2. **Leverage ratios:** If a company has a very high proportion of debt to equity, there is a danger of its not being able to meet the principal or interest obligations, which may ultimately result in becoming insolvent company. Thus solvency of a company depends upon its ability to satisfy long-term obligations. Moreover highly debt-burdened company will find difficulty in raising funds from creditors and owners in future. On the other hand the use of debt is advantageous for shareholders as they can retain control over the company with limited stake and their earnings will be magnified when the company earn a rate of return on capital employed greater than the interest rate on capital employed. Thus the leverage ratios are used to measure the financial risk and the ability of the sample companies in using debt to the shareholders advantage. The test of leverage of sample companies has been judged through debt equity ratio, proprietary ratio, long term to total capitalisation ratio and interest coverage ratio.
3. **Liquidity ratios:** The ability of an industry to meet its current obligation depends largely on its liquidity position. A company is said to be liquid if a high proportion of its assets are held in form of liquid assets. The extent of the companies' liquidity in this sense gives an indication of its ability to meet its short-term obligations quickly enough to satisfy creditors and to avoid bankruptcy. In the present study the liquidity position of the sample companies has been analysed through current ratio, quick ratio and cash turnover ratio
4. **Activity ratios:** Activity ratios indicate the efficiency or speed with which the capital employed is rotated in the business Funds of creditors and owners

are invested in various assets to generate sales and profits. The higher the turnover of funds blocked in assets, the larger the amount of sales. Thus, to evaluate the efficiency with which the management of the selected sample companies manages and utilises their assets, activity ratios such as inventory turnover ratio, debtors turnover ratio, debt collection period, total assets turnover ratio, net working capital turnover ratio etc., have been used for the purpose of the study.

Moreover, the ratios related to the financing of fixed asset such as fixed assets to net worth and fixed assets to long-term debt have also been calculated. To analyse the investment policies of the sample companies' ratio such as current assets to fixed asset ratio has also been calculated in the present study

TECHNIQUE OF ANALYSIS:

Over and above the specific ratios followed, the following technique of analysis has also been employed for a comparative study of the relative position of different facets of financial appraisal for the period 1990-91 to 1999-00.

1. Decennial average percentage of each of the profitability ratio has been compared with the data of ' Pharmaceutical Industries in India' and ' All Industries in India'
2 Decennial average percentage of each of the capital structure ratios has been compared with the data ' Pharmaceutical Industries in India' and ' All Industries in India'
3. Decennial average percentage of each of the working capital ratios has been compared with the data ' Pharmaceutical Industries in India' and ' All Industries in India'

4. Decennial average percentage of each of the fixed assets appraisal ratios has been compared with the data ' Pharmaceutical Industries in India' and ' All Industries in India'
5. Moreover, decennial average percentage of various sources and uses of funds, different sources of financing working capital requirements such as short term bank borrowings, funds from operation and long term funds are examined individually.

BASIC TERMS DEFINED:

Some important terms used in the study are briefly explained with a view to avoid ambiguity in understanding. It is also intended here to explain the way certain items have been computed and used in the study.

Gross Profit:

Gross profit represents the excess of sales over the cost of goods sold.

Cost of Goods Sold:

It comprises of all expenses on production including raw materials, packing charges, stores and spares consumed, purchase of finished goods, direct labour, energy power, fuel charges, excise duties, depreciation, other manufacturing expenses and plus/ minus decretion/accretion to stocks of finished goods and work in progress Opinion differs regarding the inclusion of depreciation in the cost of goods sold. Some do not included in the cost goods sold. Roy A. Foulke [31] and Professor S B.Choudhry [32] have included it in cost of goods sold. The rationale for including depreciation in cost of sales in the opinion of Professor Choudhry is: " Depreciation at least to the extent to which it means physical deterioration of the assets must be a charge on cost of sales as truly as are fuel and labour. When

depreciation is not included in the cost of sales the price cannot be said to be really reflective of the cost."[33]

Net Operating Profit: (Profit Before Interest & Taxes)

Net operating profit represents the figure arrived at after deducting operating and non-operating expenses and adding non-operating income to the gross profit margin

Operating Expenses:

The term operating expenses comprises general & administrative expenses and selling & distribution expenses.

Operating Cost:

The operating cost is an aggregate of cost of goods sold and the operating expenses

Net Profit:

Net profit represents the figure arrived at after deducting interest and taxes from the net operating profit but before appropriation to reserve.

Total Assets:

The term total assets refer to the entire right hand side of the balance sheet. It comprises of net fixed assets, investments and current assets including loans and advances.

Net Worth:

It represents the paid up share capital plus reserves and surplus net of accumulated losses and deferred revenue expenditure remaining unamortised It is also termed as proprietor's funds, shareholders equity or owner's equity

Paid Up Share Capital:

The paid up share capital consists of only equity share capital. This

comprises of capital paid up on all shares whether issued for cash or for consideration other than cash or as bonus shares.

Reserves and Surplus:

The term reserves and surplus is inclusive of all types of reserves and surplus such as revaluation reserves, premium on shares, development rebate reserves, debenture redemption reserves and any other reserves including accumulated balances of profit and loss account

Debt:

The term debt comprises of long term secured and unsecured loans This term is also referred as long-term debt in the present study

Net Fixed Assets:

It refers to the total value of fixed assets minus cumulative depreciation and allowance tills the end of the accounting year and takes into account addition there-to and deduction there from

Current Assets:

Current assets refer to asset, which are either held in the form of cash or are expected to be realised in cash within an accounting year period or operating cycle of the business. It includes cash and bank balances, sundry debtors, other receivables and inventories of the sample companies.

Quick Assets:

The term quick assets refer to current assets, which can be converted into, cash immediately or at a short notice without diminution of value. Included in this category of current assets are cash and bank balance, debtors and other receivables

Current Liabilities:

Current liabilities are those claims of outsiders, which are expected to mature for payment within an accounting year or operating cycle of the business. It includes short-term bank borrowings other than those against debentures and other mortgages, sundry creditors, miscellaneous current liabilities, provision for tax, provision for dividend and other provisions.

Net Working Capital:

Net working capital is the difference between current assets and current liabilities

Gross Working Capital:

Gross working capital refers to the total of all current assets including loans and advances.

Secured loans:

Any amount raised by creation of mortgage or pledge of the assets of the company or any part thereof is known as secured loans. Secured loans include debentures, loans and advances from banks and financial institutions.

Unsecured Loans:

It represents any sums of money received by way of loan or deposits by company without giving any security to the lenders They include fixed deposits, foreign borrowings, and loan from corporate bodies, government sales tax deferrals and other borrowings.

Cost of Production:

It consists of raw material consumed, stores and spares, energy power and fuel expenses, direct wages, repairs and maintenance and other manufacturing expenses

Capital Employed:

The term capital employed refers to long-term funds supplied by the creditors and owners of the companies In the present study the capital employed comprises

of secured loans plus unsecured loans plus shareholders equity. The term is also referred to as total capitalisation

Inventory:

Inventory includes raw materials, finished goods, semi finished goods and stores and spares held by the sample companies.

Working Finance:

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

Financial Appraisal:

Financial appraisal refers to a process of scientifically making a proper and comparative evaluation of the profitability and financial health of medium and large size multinational drugs and pharmaceutical companies in Mumbai.

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