CHAPTER - I :

I N T R O D U C T I O N

I. IMPORTANCE OF THIS STUDY :

Since independence, India has been in the midst of a vigorous and qualitative industrial transformation. Consequently, Indian Industries underwent significant structural changes. With the adoption of the policy of mixed economy, the Indian Government gave recognition to the continuation and existence of private sector, side by side public sector. Hence, economic activities left to the private sector are expected to work under more or less competitive forces, though some regulatory forces would still be in existence. Therefore, profitability which is the yardstick for judging the efficiency of private enterprises should be given due importance and place in the working of private sector.

After the break-out of Ist World War and the great depression of 1929, the world has experienced the lack of tranquility, lucidity and harmony, on which the economists emphasized very highly. The economic systems working under

the perfectly competitive markets with price-profit mechanism broke-down. The world of non-perfection was experienced which resulted in the intervention of the Goverrment in the functioning of the economy, in emergence of the giant corporations - monopolies and cartels etc. The profit rate which occupied a unique place in traditional theories appeared to be losing its ground over this period. However, except for a few communist countries, the rest of the world still retains 'profit motive' as an incentive, with some modifications, for its effective functioning. This is so because majority of the countries still have an unshakable faith in the sanctity of the private property. Hence complete oustation of the institution pf private property and the dethronement of profit motive could not be achieved. However, the disturbing impacts of world war first and the great depression of 1929 forced the strong believers of price-profit mechanisms to search for an approach which would be a golden means between the two polar extremes (i.e. no competition under communism and free competition). Consequently, a compromise approach was evolved wherein a State could direct the course of productive activities in some fields where the automatic mechanism fails to bring about the desired results, while, the normally competitive fields are left to be governed by

the profit motive, with necessary regulations. This approach is commonly known as 'mixed economy'. Thus, the Indian Government with the adoption of 'mixed economy' actively participates in some sectors and exclusively controls those sectors of the economy where individual and social interests diverge widely, while the remaining sectors are left to the free forces of price-profit mechanism, where they can contribute relatively better in furtherance of social welfare. It is with respect to this sort of mixed environment that the study of different aspects of profitability of different Indian Industries is warranted. This study is confined to the private sector only and the results derived have to be interpreted against this background. The present situation in a country like India where the profit criterion is not the indispensible force in guiding the whole economy, diverges a lot from the environment in which the classical economists conceived the role of profit as a regulator of economic activities.

In the world where future can be perfectly anticipated, there would be hardly any dispersion among profit rates of various industries because every opportunity for gain would be seized and every threat of loss evaded. The entire impact of the changes would reflect in shifting rates of investment of various industries. However, in the world of

non-perfection, where changes are bound to affect the whole economy, and where, no change would be expected, the first impact of change would be on the profit rate which ultimately affects the distribution of wealth and the growth of the economy. G.J. Stigler very skillfully brings this out as follows : "And in the opposite world, where no change would ever be expected, the first impact of every change would be on rates of return: every surge of demand would find the industry unprepared and its prices and profit rates would rise; every cessation of demand would find the industry over expanded and its output selling at distress prices."[1] In short, in the dynamic world, an industry has to cope with a number of forces such as : changing consumers incomes, competition with foreign producers, prices of inputs, discovery of new resources, production techniques and new products etc. All these changes and the adjustments made to them are portrayed in two basic data of each industry: its capital stock, and the rate of return on this capital.

Further, profits play dual role in the investment process of the economy. On the one hand profits are an incentive for investment and on the other hand they are the

1 Stigler, G.J.: Capital and Rates of Return in Manufacturing Industries : A Study by National Bureau of Economic Research, Princeton University Press, New York, 1963, p.4.

source of investment. Profits is the principle motivating force in the normal commercial business. It is so to say a fulcrum around which the entire business activity rotates. A high rate of profit in a particular branch of economic activity attracts new investment, and, the low rate of profit or loss on one hand repels any fresh inflow of investment, and, on the other hand encourages the existing capital to quit towards the fields of higher returns. However, profits alone are not of much use when the question of inter-firm or inter-industry comparison is faced. Hence the necessity of relating profits to some common base and then examining the structure of profit rates of different industries.

II. OBJECTIVES:

The profitability of a concern indicates the financial stability and tends to enhance the income earning capacity of the concern. Besides, it provides for the growth of the concern and thus contributes to the growth of the whole economy. However, profit rate is a concept derived from two concepts viz., profits and capital which are not free from measurement and conceptual problems. The profit has different meanings to businessmen, accountant,

tax collectors, workers and economists so has 'capital' too. Hence, different groups of people are interested in profit rates for different reasons.

Current rate of profit is an indicator of expansion of a business through reinvestment and through attracting and absorbing new capital in the industry. Hence, investors are interested in knowing the profitability of a concern over time and of many concerns at a given moment of time. Further, profit, an income of an entrepreneur, is a good source of revenue to the Government. Hence, from the point of view of framing the taxation policy, the government is interested in knowing the profit rates of different industries at a particular moment of time and of one particular industry over a period of time. Moreover, economists have academic interests in examining the inter-industry or inter-firm profitability ratios at a given moment of time or of an industry over a period of time. Their aim is to empirically test different hypothesis about profit rates.

However, it is rather difficult for an individual research workers to probe into all these aspects and do full justice to the numerous problems involved. Hence, the following issues are taken up in the present study.

III. PROBLEMS STUDIED :

The study is aimed at examining the following hypothesis and the related issues.

(A) Concept and Measurement of Rate of Profit :

Profit rate is a concept in which different groups of people are interested for different reasons. It is derived from two concepts, viz., 'Profits' and 'Capital' which are highly controversial. Moreover, it is observed that different groups of people define rate of profit in different ways according to their objectives. Hence, the choice of rate of profit to be used for this study depends upon the purpose of the inquiry.

One of our objectives is to study the profit rate which represents the returns on the entrepreneurs capital, i.e. Net Profit Rate. This would enable us to provide guidelines for the investors. However, this concept of profit rate (Net) leaves the characteristics of capital lenders (i.e. borrowed capital) unexplained. Our second objective is to examine the performance of the industry as a whole, which needs to take into account the returns which accrue to the total amount of capital employed in the

industry. Hence the need for studying return on total capital employed i.e. gross profit rate. This would not only reveal the total earnings accruing to an industry through employing certain amount of capital, but will explain the nature of both entrepreneurial and lenders capital.

Considering a number of definitions adopted by different institutions, we have ultimately chosen two concepts of profitability for our study, viz., Net Profit Rate and Gross Profit Rate. While making this choice, we have considered various problems involved in defining and measuring rate of profit, and various uses to which these concepts can be put.

In short, we have made use of both these concepts of profit rate throughout our study and examined their significance accordingly.

(B) Equalising Tendency of Rates of Profits Among Different Industries Over Time :

Inter-industry Variations in earnings rates at a given moment of time has been studied to test the hypothesis that industries in private sector are working more or less, under competitive forces. In other words, we intend to examine whether most important generalisation postulated by classifical economists regarding the celebrated tendency of profit rates to equality, between various branches of economic activity hold good in the present

industrial structure of India.

(C) Profitability Trends :

Industry-wise examination of profit rates over a period of 25 years is undertaken with an aim of studying the time trends in profitability ratios of different industries. Do the profit rates of different Indian Manufactures industries (individually) have a tendency to rise over time?

(D) Profitability and Growth :

According to classical economists there existed some relation between profitability and growth of the firm till the firm approaches equilibrium position. Once the equilibrium was reached, the firm had no incentive to grow and the relationship between profitability and growth vanished. This relationship was formulated on the basis of free competition resulting in stationery state in the long run. However, the economic history of different countries has proved that the stationery state was never reached. The technical progress, increasing substitution of capital for labour, changes in the economic and business institutions are some of the factors responsible for this. In short, the growth profitability relationship formulated by classical economists was the result of entirely different

environmental economic conditions than of 20th century conditions. The dynamic factors causing imperfections in the economic system therefore call for the re-examination of the growth: profitability relationship of different industries.

The growth of an industry depends upon the growth of the firms in the industry. The growth of the firms in any industry is influenced, in general, by economies of scale, market structure, market demand, supply of inputs and supply of factors of production, cost of borrowing, financial policy of firms, and in particular by managerial skills and investment policies of firms and profitability of the firm. Moreover, in a mixed economy like India, the government policy also has its effects on the expansion of the firms as well as the whole industry.

However, the growth of the firms is mainly affected by the "ability" of the firm to grow and its "willingness" to grow. The ability of the firm to grow in turn depends upon the profitability of the firm. Higher the level of profitability, more the capital available to reinvest and to attract new capital. Given the technology and the internal efficiency, the management decisions regarding diversification, market share, prices etc. also considerably affect

the profitability of concern, which in turn affects the growth of the firm.

As far as willingness to grow of the concerns is considered it varies between different firms at a given moment of time and varies over a period of time for the same firm. However, given the ability to grow, the rationality on the part of entrepreneur assumes the willingness to grow too. We have on these basis assumed the existence of positive correlation between growth of the industry and its profitability. Does increasing profit rate indicate increase in growth of the industry? A number of regression models have been fitted to find out the growth-profitability relationship in Indian Manufacturing Industries.

The growth of the industry is expressed in terms of growth of physical assets (Gross Fixed Assets and Inventories) valued at Constant prices (1950-51 prices).

(E) Determinants of Profitability :

Finally, we have attempted to explain the prevalent structure of profit rates and the trends in these over time with respect to Indian Manufacturing Industries. This has been done through following two methods :

(i) General Factors : We have examined in this section of our thesis general factors which are expected to affect

the profitability of each of the industry studied. We have considered important factors like availability of raw materials, type of technology adopted in production, power shortage, labour problems, capacity utilization, etc. in the light of government policy, particularly with respect to different controls imposed on industries and the general effects of these factors on the production and profitability of industry.

(ii) Explanatory Factors : Regression Analysis : In order to explore the specific factors influencing the profitability of industries, we have adopted the technique of regression analysis. Considering the possibility of quantifying the following explanatory variables, We have formulated a number of hypotheses regarding the relationship between each of these specific variables and profitability (gross and net each separately). The Linear Multiple Regression Model is fitted to both Time-series and Cross-section data. Following factors are considered as determinants of profit rate.

(1) Turnover Assets Ratio : (x_1) : This ratio indicates the turnover of sales per unit of assets employed in the industry. Hence, net sales divided by total net assets i.e. Net Fixed Assets Plus Current Asseting (both in lakhs of Rs.) represent the Turnover Assets Ratio. It is assumed that larger the sales per unit of assets, larger

would be profits per unit of assets and vice-versa. Hence a positive relationship is assumed to exist between this ratio and profitability.

(2) Net Fixed Assets as Proportion of Total Net Assets: (x_2) : This ratio indicates the extent of investment in fixed assets. Prof. Marshall, in his analysis argues that, firms having higher proportion of fixed assets in total, take longer time to adapt to new technology compared to those having lower ratio. Hence, a negative association is assumed to exist between this ratio and profit rate. The ratio taken here is a financial one.

(3) Capital-Output Ratio: (x_3) : The Capital-Output Ratio is a measure of Capital intensity of an industry. However, the concept of capital referred to in this ratio differs from that of Total Capital Employed (Total Assets) considered for earlier two explanatory variables. Here capital comprises of value of fixed assets (Buildings, Plant and Machinery & Other Fixed Assets) adjusted for price variations and the value of inventories while Total Capital Employed or Total Assets comprise of Net Fixed Assets Plus Current Assets.

The Relative intensity of an industry is reflected through this ratio, hence Capital-Output Ratio is given

Central place while choosing different techniques of production or while allocating the investment in different industries. For a country like India, where capital is scarce while labour is abundant, a low capital intensive technology is more advisable. This is so because it would enable to increase the rate of flow of output per unit of capital available to the maximum possible extent. In short, Capital-Output Ratio is significant factor in determination of investment decisions and choice of techniques used. Hence, any individual investor interested in knowing whether it is profitable to undertake investment in a particular industry or not, would be interested in knowing the productivity of capital which is denoted by inverse of Capital-Output Ratio i.e. Output-Capital Ratio. Generally, the higher the productivity of capital, the higher would be the profitability of the industry and vice-versa. Capital-Output Ratio being the inverse of capital productivity, is assumed to be negatively associated with profitability of the industry.

However, when we come to the measurement of this ratio we have to define both the concepts involved in it i.e. Capital and Output. The term capital would represent that amount which would be used in production of one unit of

output while output would refer to that amount which is produced by a given unit of capital. Hence the need of defining and measuring capital in terms of value of productive capital.

Capital as defined in economics refers to the produced means of production and hence comprises of fixed assets and inventories only. Moreover, land being a free gift of nature can not be termed as capital. Further, the value of capital given in R.B.I.* published data on Joint-Stock Company Finances is at historical prices and therefore does not give the correct value of capital. An attempt has therefore been made to convert the gross value of fixed assets into current prices. The inventories are valued at current prices and hence are added to these estimated fixed assets at current prices. Thus, the total productive capital in the industry is defined in terms of value of physical assets at current prices. As far as the definition and measurement of output is concerned, we defined it in terms of gross value added. It is derived by summing up the incomes accruing to different factors of production, e.g. rents, profits, wages and salaries, interest and depreciation (Since our capital is gross of depreciation, our output defined in terms of gross value added is also gross of depreciation). When this capital stock at current prices

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* R.B.I. is Reserve Bank of India.

is divided by gross value added, it represents the capital-output Ratio, i.e. inverse of capital productivity. We repeat our hypothesis that a negative association exists between Capital-Output Ratio and Profitability of different industries.

(4) Index of Production : (x_4) : Profits result from the difference between sales revenue and, the total expenses incurred on the production of the commodity. It is therefore, directly related to the physical output of an industry. Since RBI data relates to company finances it does not provide information on the output of the industry. However, if value of production, which is at current prices, is expressed at constant prices, it works as a proxy for real production. This is beause price variations are eliminated. Hence, an attempt has been undertaken to express value of production at constant (1950-51), prices with the help of appropriate price indices. These are then expressed in terms of index numbers, giving us the growth of output. A positive relationship is assumed to exist between this variable and profit rates.

(5) Rate of Inflation : (x_5) : It is generally assumed that the business community, mainly the firms, benefits the

most during the time of inflation. This implies that inflationary trend leads to rising profitability of industries over time. Hence, we assume a positive association between Rate of Inflation and Profitability of different industries overtime. The national income deflator in India[2] has been worked out and is expressed as the price index with 1950-51 as the base year. This price index has been used to express the Rate of Inflation in India.

(6) Rate of Growth of Capital : (x_6) : Our objective here is to relate Rate of Growth of Industry measured in terms of real value of fixed assets and inventories (at 1950-51 prices), to the profitability of different industires in order to examine the hypothesis forwarded separately by Marris R.[3] and Penrose, E.T.[4] about the converse functional relationship between profitability and growth, resulting in negative association between the two.

However, as far as Indian Industries are concerned, majority of these have a very recent origin. This implies that these industries are on way towards expansion and have

2 White Paper on National Accounts Statistics, Central Statistical Organisation, (C.S.O.), Calcutta, 1976.

3 Marris, R.L. : Economic Theory of Managerial Capitalism, Macmillan & Co., London, 1964, Ch.II.

4 Penrose, E.T.: The Theory of the Growth of the Firm. Basil Blackwell, Oxford, 1972.

not yet reached saturation point of expansion. Hence we do not expect the negative association to exist between profitability and growth of these industries. Considering these points we wish to test the validity of the hypothesis forwarded above with respect to Indian Manufacturing Industries.

(7) Debt-Equity Ratio : (x_7) : This ratio indicates the proportion of borrowed capital to owned capital. Since interest charges on borrowed capital are set off from the profits assessed for income tax[5], debt financing is assumed to be a cheaper source of finance than equity capital. Based on this argument, a positive correlation is assumed to exist between Net Profit Rate and this ratio.

In short, this study examines the trends in and structure of the profit rates of different Indian Manufacturing Industries, growth profitability relation between them with real growth of capital, and, determinants of profitability (General Factors and Specific factors) for 21 Indian Manufacturing Industries for which required data and information are available from RBI published volumes on 'Financial Statistics of Joint-Stock Companies in India'.

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5 Ramchandran, H. : Financial Planning and Control. S. Chand & Co. Pvt.Ltd., Delhi, 1972, p.104.

~~Based on the argument, a positive correlation is assumed to exist between the [illegible] Profit Rate and their [illegible]~~

(iv) Sources and Coverage of Data :

In the light of problems mentioned above we examine the different aspects of profitability. The study is based on the series of combined accounts (Balance sheets. Income statement, etc.) of different industries published by Reserve Bank of India in its publication on "Financial Statistics of Joint-Stock Companies in India (in 3 volumes).[6] Only large and medium public limited companies are covered. Companies with paid-up capital of Rs.5 (five) lakhs* or more are covered in this study. The data are given for 31 industries belonging to this subsector out of which 21 manufacturing industries are selected for the study. Only those manufacturing industries for which the data are available for the whole period under study i.e. 1950-51 to 1974-75, are selected (with the exception of Match Industry for which data are not available in the latest published volume for the period 1970-71 to 1974-75). The detailed classification of these industries is given in Appendix III.I at the end of [illegible] Chapter III.

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6 For details regarding the concepts, methodology of processing data and the limitation, see "Financial Statistics of Joint-Stock Companies in India, 1950-51 to 1962-63, 1960-61 to 1970-71 and 1970-71 to 1974-75, Reserve Bank of India, published in years: Feb.1967, August 1975 and August 1977 respectively.

* One Lakh = 100,000.

The number of companies covered by the 21 industries has been gradually increasing and data are revised every five years from 1950-51 onwards. Since our aim is to examine the profitability ratio of the whole industry, we are interested in including as many companies as possible. Hence, number of companies covered as increased from 419 (55.9%) in 1950-51 to 574 (57.3%) in 1955-56, 756 (56.7%) in 1960-61, 923 (61.5%) in 1965-66 and 1068 (64.7%) in 1970-71 to 1974-75.[7]

Most of the companies covered in earlier series have been covered in latter series also. Attempts were made to include in latter series as many companies as possible which went into production during the 5-year period preceding the commencement of latter series.

Notwithstanding the difference in the numbers of public ltd. companies covered, the coverage has been kept around 80% in terms of paid-up capital of all the non-governmental, non-financial public limited companies, at the commencement of the each of the series. Companies with paid-up capital of Rs. 5 lakhs each or above are classified as medium or large

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7 Figures in bracket indicate the percentage of companies covered in this study out of the total number of companies covered in this subsector in RBI Sample i.e. out of 750 companies in 1950-51, 1001 in 1955-56, 1333 in 1960-61, 1501 in 1965-66 and 1650 in 1970-71 to 1974-75.

companies. Hence the coverage by paid-up capital of the companies studied here amounts to 51.7% in 1950-51 (Rs. 21604 lakhs out of Rs. 41778 lakhs)[8], 50.1% in 1955-56 (Rs. 29692 lakhs out of Rs. 59256 lakhs), 54.8% in 1960-61 (Rs. 49113 lakhs out of Rs. 89545 lakhs) 58.4% in 1965-66 (Rs. 76566 lakhs out of Rs. 131208 lakhs), 66.2% in 1970-71 (Rs. 130100 lakhs out of Rs. 196684 lakhs) of the total paid up capital of the sub-sector termed medium and large public limited companies.[9]

The studies on medium and large public limited companies are the most important in the entire scheme of RBI's studies on the finances of the corporate sector. The distribution of companies according to the size of paid-up capital is found to be highly skew. The companies with paid-up capital above Rs. 5 lakhs each accounted for over 95% of the total paid-up capital (Rs. 129300 lakhs out of Rs. 135300 lakhs) of all non-governmental public limited companies in the year 1964-65, but by number of units, these companies formed only

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8 Figures in brackets indicate the share of 21 manufacturing industries under study and the total paid up capital of the subsector medium and large public limited companies.

9 The coverage by paid up capital of all the companies in subsector medium and large public limited companies is minimum 80% of total paid-up capital of this sector. Hence the total paid-up capital for the whole sector is worked out which indicates 80% of total paid-up capital. From this, total paid-up capital for each of the above years, is worked out and total paid-up capital of 21 manufacturing industries is divided by it which gives the percentage of share of 21 manufacturing industries in this sub-sector.

about 38% (i.e. 2418 out of 6450 companies). By taking advantage of this fact a good coverage of this sector could be secured by studying only a limited number of companies with paid-up capital Rs. 5 lakhs and above each.The total number of companies in RBI publication in 1964-65 was 1333. If this is taken as 38% of total number of companies, then in 1964-65 there were 3508 companies in this whole sub-sector, and this study covers 756 companies out of these which means that 21.6% of the total companies had the paid-up capital around 54.8% in 1964-65. Hence a study of small group of companies controlling more than 50% of the paid-up capital (1964-65) is thought to be a good representative of the whole sector and therefore has been chosen for the study.

Moreover, the percentage contribution of the 'Registered' factories in manufacturing sector in 'National Income' in 1950-51 (at current prices) was around 5.5% which rose to 7.8% in 1955-56.[10] Similarly percentage share of manufacturing in'Net National Product' (at current prices) was 13.9% in 1960-61, 14.5% in 1965-66, 13.8% in 1970-71 and 14.6% in 1974-75.[11] In other words, the share of manufacturing

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10 Estimates of National Income 1948-49 to 1962-63, Central Statistical Organisation, Calcutta, Feb.1964.

11 The White Paper on National Accounts Statistics, Central Statistical Organisation, Oct. 1976, pp.8-9.

industries has been increasing since 1950-51 (except in 1970-71) and has almost increased by 2.5 times in 1974-75. This indicates an increasing importance of this sector in the working of the whole economy.

If we take into consideration the total amount of productive capital[12] controlled by the 21 manufacturing industries studied here, we observe that in 1950-51, our 21 sample industries controlled around 68.5% of productive capital in the whole manufacturing sector (i.e. productive capital of Rs. 42099 lakhs out of Rs. 61453 lakhs), 70.4% in 1960-61 (i.e. Productive capital of Rs. 140692 lakhs out of Rs. 199954 lakhs) and 34.7%[13] (i.e. productive capital of Rs. 385012 lakhs out of Rs. 1110580 lakhs) in 1970-71. The share of 21 industries in productive capital has considerably decreased in 1970-71 (almost half of 1960-61), which is due to considerably great expansion of the whole Manufacturing sector as a result of expansion of industries, other than these 21 industries during this period. Hence, total

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12 Productive Capital Comprises of Net Fixed Assets (land, buildings, plant and equipment and other fixed assets) plus Inventories (Stock of Raw Materials, finished unfinished products, and others).

13 Number of industries covered from 1970-71 onwards is 20 because of non-availability of data on Match industry.

productive capital for whole Manufacturing sector seems to have increased from Rs. 2000 crores to Rs. 11101 crores.

However, the declined share in productive capital of these 21 industries still amounts to more than one-third of the total productive capital. If we consider the contribution of 21 manufacturing industries studied in the Net value added[14] by whole manufacturing sector, it amounts to 61.3% in 1950-51 (i.e. $\frac{net}{l}$ value added worth Rs. 17416 lakhs and of Rs. 28393 lakhs), 58.8% in 1960-61 (i.e. $\frac{net}{l}$ value added worth Rs. 50818 lakhs out of Rs. 86437 lakhs) and 48.7% in 1970-71[15] (i.e. $\frac{net}{l}$ value added worth Rs. 136943 lakhs out of Rs. 281130 lakhs)[16] In other words, though the contribution of the sample industries has decreased in the whole manufacturing sector over this period, these 21 industries in 1970-71 accounted for around 49% of the net value added by manufacture. A decline in the share of these 21 industries' share in either total productive capital or net value added by manufacture of the Whole Manufacturing Sector can be accounted for a vast expansion of Whole Manufacturing Sector

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14 Net value added represents that part of the value of the product which is created in the industry. It is derived by deducting from gross ex-factory value of output, value of input and depreciation on fixed assets.

15 Number of industries covered in the study is 20 in 1970-71.

16 Data for whole manufacturing sector covering all factories are taken from Statistical Abstract, CSO, The estimates for the year 1970 are provisional.

through industries other than the 27 studied here.

Net value added shows the contribution of this sector to the National Income. As has already been observed, in 1950-51 the Whole Manufacturing Sector of India contributed 5.5% in the National Income, 13.9% in 1960-61 and 13.8% in 1970-71. Since we know the share of 21 manufacturing industries in the Net value added by Whole Manufacturing Sector, we can say that these industries contributed around 3.4% in 1950-51 (since value added by Manufacture constituted 5.5% in Net National income in 1950-51, 61.3% of its covered by 21 industries comes to 3.4% of National Income), 8.2% in 1960-61 and 6.7% in 1970-71.

The above statistics emphasizes the role played by the 21 manufacturing industries studied, in the National Income of India. This was the justification therefore for selecting only manufacturing industries for study.

However, there exists another source of data to which recourse could have been made, the source being Annual Survey of Industries (ASI), which covers a wider and all India manufacturing field. The classification of factories also is finer compared to the one given by RBI. But the problem involved is that of availability of data for longer period. If we take Census of Manufacturing Industries (CMI) for the

period before 1959(for which there was no Annual Survey of Industries held), we have to stick to 29 Industries. Moreover it calls for a number of adjustments in data because Annual Survey of Industries covers large factories only whereas Census of Manufacturing Industries covered all factories (small and large) till 1953 after which break-up of small and large factories is available. Even after doing all these adjustments (based on a number of assumptions) the time period that could be covered is only 15-16 years (1953 to 1968), as detailed volumes of ASI are published upto 1968-69 only. We preferred RBI data to the ASI data mainly due to the fact that the required data on profitability ratios and the related concepts based on balance sheets are easily available from the former, while in case of ASI the required data cannot be obtained directly and satisfactory as the latter do not give balance sheets for different firms or industries. Secondly, RBI data provides data for longer period, which is one of the requirements of profitability study. Thirdly, we intend to examine the real growth of each industry in terms of growth of capital over time and relate it to the profitability of each industry. In order to measure the growth of capital in real terms, we need data on values of fixed assets at purchase price by different categories. ASI surveys give written down values

of capital while RBI study provides the capital stock at purchase price by different categories for each of the industries. Finally, we intend to explain the structure of profit rates and trends in profitability ratios studied through a number of factors. The required dataon these variables are also directly available from RBI published data. Considering the importance of all these points we have preferred RBI study to ASI study, the former being a good representative of manufacturing sector in India.

However, the RBI data are based on the authentic documents like annual reports and accounts of the selected companies. Hence they are subject to following limitations.

The Statements on basic data e.g. balance sheets or profit and loss account, show, only the combined position, and not the consolidated position, for the group of companies for which the data are presented, as inter-corporate transactions are not eliminated while combining the data.

The published accounts of a company cover all its industrial activities and the companies are grouped according to the main activity of the company. Thus, the combined data for a particular industry will include figures relating to the subsidiary activities included in that industrial group. However, this sort of limitation is bound

to be present in the studies pertaining to industries, whatever may be the source of data.

For arriving at paid-up capital coverage in each industrial group, the data on paid-up capital available from the Department of Company Affairs are used. The Industrial Classification of the department is based on the objectives set out in the memorandum of Association filled at the time of registration of the company, whereas the main line of activity, as revealed by the annual report and accounts of the Company, forms the basis of classification in the RBI studies. However, our study is not affected much by this limitation.

However, in spite of these limitations, RBI data forms a big and reliable source of information on company finances. Hence Prof. B.V. Mehta in the Trend Report on Industrial Finance in India remarks "In spite of all these limitations, the Reserve Bank's studies on company finances constitute the core of statistical infra-structure in the field of industrial finance that developed during the last two decades.".[17]

V. METHODOLOGY:

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17 Prof. Mehta, B.V.: "Industrial Finance in India; A Trend Report" from Survey of Research in Economics, Vol.5, ICSSR sponsored, 1975, pp.113-146.

G.J. Stigler[18], A Singh and G. Whittington[19], R.T. Bowman[20], P.E. Hart[21] and many others have attempted to analyse the problems related to rates of profit. However, majority of the work in this field is based on inter-firm comparisons. In the present study a number of statistical tools are applied to examine the structure of profit rates. Inter-Industry variations (in a given year) and industry-wise variations (over a period of time) are examined by using relative and absolute measures of dispersion (Standard Deviation and Coefficient of Variation). Profitability trend Coefficients of each of the 21 manufacturing industries are estimated and examined by regressing profitability over time.

Estimates of capital are derived by the methodology adopted by S.R. Hashim and M.M. Dadi[22] in their publication, on "Capital-Output Relations in Indian Manufacturing",

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18. Stigler, G.J.: Capital and Rate of Return in Manufacturing Industries, Princeton University Press, Princeton, 1963.

19 Singh, A. and Whittington, G.: Growth, Profitability and Valuation. Cambridge University Press, Cambridge, 1968.

20 Bowman, R.T.: Statistical Study of Profits, Philadelphia, 1934.

21 Hart, P.E.: Studies in Profit, Business Saving and Investment in the United Kingdom, 1920-62, Vols.I-II. George Allen & Unwin, London, 1965, 1968, respectively.

22 Hashim, S.R. and Dadi, M.M,: Capital-Output Relations in Indian Manufacturing: 1946-1964", The M.S.University of Baroda, 1973.

1946-1964. The value of fixed assets[23] has been estimated at constant prices, thereby indicating their value in real terms. These estimates of capital thus derived are used to express the growth of the industry in real terms. Later on an attempt is made to explore the relationship between growth of theindustry and its profitability. The statistical method of regression analysis is applied. A number of models,[24] assuming linear or non-linear relationship between growth and profitability are fitted. Industry-wise as well as inter-industry regression analysis is carried out. Finally the variations in profitability ratios are explained by a number of variables (e.g. capital output ratio, rate of inflation, index number of physical production etc.) with multivariate regression analysis.

The 21 Industries are also divided into 4 sectors, comprising of consumers' goods sector, basic goods sector, capital goods sector and intermediary goods sector. Similarly, a study of Whole Manufacturing Sector has also been undertaken. The industry-wise details of each sector is given in next chapter.

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23 Fixed Assets comprise of Buildings, Plant and Machinery and other Fixed Assets.

24 Simple linear without time lag, simple linear with time lag and log-log models are fitted.

The sector-wise analysis of profit rates is undertaken to examine what has happened to different sectors of the economy as far as the earning power of the industries is concerned. Since India on the eve of plan had an entirely different pattern of industries than what it had after a decade or two, this exercise was thought to be necessary.

VI MAIN FINDINGS

The main findings of this study are briefed below :

1. Majority of the Indian Manufacturing Industries - twelve and seven - have enjoyed a rising trend in gross profit rate and net profit rate respectively.
2. Over the study period, Iron & Steel, and Cement have both experienced declining trend in both gross and net profit rates while Grains & Pulses in net profit rate.
3. Except the Basic Goods Industries sector, all sectors have experienced a rising trend in gross profit rate, while only Consumers Goods Industries Sector enjoyed a rise in net profit rate over the study period.
4. Rubber and Rubber Products Industry had the lowest variations while Jute Textiles had the largest variations in both gross as well as net profit rate over the study period.

5. Majority of the industries experienced moderately fluctuating (coefficient of variation upto .500) gross profit rate and net profit rate (13 and 9 industries respectively).

6. Indian Mamufacturing industries enjoyed equalising tendency among rates of return from 1953-54 upto 1963-64 which dis-appeared from then onwards. This is revealed by parabolic trend in coefficient of variation and negative sign of rank correlation coefficient between rates of return. This is the effect of speedy expansion of newly introduced industries around and after World War II(like Engineering & Chemical Industries) and slow growth of old industries (like Cotton Textiles and Jute Textiles). This indicates that, industries earning low profit rates in the earlier years, raised their earning capacity very greatly over time while those enjoying high profit rates in earlier years suffered from low earnings in latter period.

7. Profit rates of Indian Manufacturing Industries reveal tendency to persist over plan periods (From Second Plan period i.e. 1956-57 to 1960-61). This is an indication of continuity of good management and monopoly power of some of the firms in the industry. However, the profit rates do not have any tendency to persist over a longer period i.e. decade-wise. In short, the persistency of profit rates of Indian Manufacturing Industries over Smaller period (plan-wise) provides us with a guide of profitability in near future.

8. We have found strong positive causal relationship between growth and profitability for Eight Industries for time series study, majority of which belong to Basic and Capital Goods Sector. Similarly, we have succeeded in concluding strongly on inter-industry relationship between growth: profitability in a given period. It has been observed that there existed strong positive association between real growth of industries and profitability after 1961-62 onwards.

9. Capital-Output Ratio, Index of Production, Turnover Assets Ratio, Net Fixed Assets as Proportion of Total Net Assets have been observed to be exerting considerable influence on profitability of different industries over time as revealed by multiple regression analysis.

10. Capital-Output Ratio is found to be the dominant determinant of industry and sector-wise profit rate (over time). The coefficient of Capital-Output Ratio and Net Fixed Assets as Proportion of Total Net Assets, assume negative signs as per our assumption in all the significant results (except one in case of Net Fixed, Asset as Proportion of Total Net Assets where coefficient is positive).

11. The other explanatory variables, i.e. Index of Production , Turnover Assets Ratio, Rate of Inflation (affects two

industries only), Rate of Growth of Capital, and Debt-Equity Ratio (affects Profitability of two industries positively as per our hypothesis while it has negative influence on profitability of one industry and requires further investigation) are positively associated with profitability as per our assumptions.

12. However, it is observed that the above mentioned factors (except the Rate of Inflation) have similar relationships when considered for cross-section study also. Capital-Output Ratio, Rate of Growth of Capital are observed to be dominant factors while Turnover Assets Ratio is effective in gross profit rate and Index of Production, and Debt-Equity Ratio in case of net profit rate.

13. Profitability variations are also examined in the light of government policies regarding controls over prices, production, distribution etc. of different industries availability of raw materials, power shortages, labour problems, technological conditions etc. of different industries. It is observed that, these factors have affected different industries in different ways. Mainly, the government policy of encouraging Engineering & Chemical Industries has resulted not only in increasing their profitability

over time, but has enabled these industries to raise it quite considerably. While basic industries like Iron & Steel, Cement etc., and industries producing essential consumers commodities (like Grains & Pulses, Cotton Textiles, etc.) have suffered from declining and lowering profit rates over the same period as a result of adoption of a number of controls by the government (e.g. Price or distributive controls). In short, we have tried to examine the structure of profit rates (inter-industry variations), trends in profitability, (Industry-wise), growth: profitability relationship, and determinants of profit rates to explain the structure and trends through quantifiable and non-quantifiable factors. We have thus combined the empirical analysis with government policy and other factors inherent in the economy to explain the inter-industry and industry-wise profit rate differentials in Chapter III through VII and have concluded the analysis in Chapter VIII.