# C H A P T E R - V

# C H E M I C A L  I N D U S T R Y

## 5.1. INTRODUCTION:

The chemical industry constitutes a group of heterogeneous and feeder industries and covers a wide range of products. It includes giant heavy chemical and fertiliser industries as well as the smaller light industries like pharmaceuticals, fine chemicals, paints and varnishes. Chemicals of one type or the other are essential almost in all types of industries like textiles, paper, sugar, pharmaceuticals, plastics, man-made fibres and in every sector of our economy what can be found is the substitution of chemical products to other products. The products of chemical industry include organic and inorganic chemicals, petrochemicals, pharmaceuticals and drugs, dyestuffs, fertilisers, agrochemicals. Many other products depending on chemicals may also be mentioned as paints and varnishes, plastics and man made fibres. The industry has made a significant contribution towards augmenting food production by supplying fertilisers and pesticides but the consumption per hectare of arable land in India in comparison with other countries is insignificant as given in the Journal of Industry & Trade, Nov-Dec. 1977:[1]

1. Garg, R.B.L. - 'Fertiliser industry : years of growth ahead'. Commerce, Bombay. Nov. 25, 1978, pp. 51-2.

## COUNTRYWISE FERTILISER CONSUMPTION

| Country | Fertiliser in Kg./hectre of arable land |
|---|---|
| W. Germany | 402.0 |
| Japan | 374.9 |
| U. K. | 257.0 |
| Egypt | 150.7 |
| Israel | 150.1 |
| U.S.A. | 76.7 |
| U.S.S.R. | 58.8 |
| China | 44.6 |
| Canada | 28.4 |
| India | 15.7 |

Inspite of meagre consumption, our production lags far behind even of our present needs:

## PRODUCTION AND CONSUMPTION OF FERTILISERS

| | Nitrogenous | | Phosphatic | | Potassic* |
|---|---|---|---|---|---|
| | Production | Consumption. | Production | Consumption. | Consumption |
| | ('000 tonnes of nutrients). | | | | |
| 1978-79 | 2170 | 3420 | 770 | 1106 | 592 |
| 1979-80 | 2224 | 3498 | 749 | 1151 | 606 |
| 1980-81 | 2164 | 3678 | 840 | 1214 | 624 |

*No indigenous production

Source : Statistical Outline of India, 1982, Tata Services Ltd. Bombay.

The chemical industry ranks fourth among the manufacturing industries in India after textiles, iron and steel, and engineering industries in production growth rates. The annual compound growth rates of chemical industry in comparison with all manufacturing industries during the last five plan periods may be shown as under [2 & 3] :

| | Chemicals & Chem. Products | All manufacturing industries. |
|---|---|---|
| First Plan, 1951-55 (base 1951) | 9.1 | 7.3 |
| Second Plan, 1956-60 (base 1955) | 10.7 | 6.6 |
| Third Plan, 1961-65 (base 1960) | 9.0 | 9.0 |
| Fourth Plan, 1966-73 (base 1968) | 8.9 | 4.5 |
| Fifth Plan, 1974-79 (base 1973) | 10.8 | 7.1 |

It is said that the first chemical industrial unit as sulphuric acid manufacturing plant was set up near Calcutta at Cossipore, in India towards the end of the 19th century. The first indigenous chemical manufacturing unit was set up by Acharya Prafulla Chandra Roy also in Calcutta in the year 1901. Still then the industry is gaining ground rapidly. During the First World War, a few small units were further set up. The Second World War gave a fillip to the industry. After the War and particularly, following independence, the industry started

2. Raghavan, R. V. - 'Chemical industry : An Overview'. Commerce, Bombay. Nov. 25, 1978.
3. Chanda, S. K. - 'Developing the Eastern Region', Commerce, Bombay. Nov. 25, 1978.

making rapid progress and during the last 25 years it has gained momentum. The following figures based on published data of Central Statistical Organisation - Annual Survey of industries, will show the alround growth of the industry during the last few years:[4]

CHEMICAL INDUSTRY : SELECTED INDICATORS

| Item | Unit | 1975-76 | 1976-77 | 1977-78 |
|---|---|---|---|---|
| Factories | Number | 3,732 | 4,152 | 4,674 |
| Investment | Rs.million | 29,522 | 30,282 | 34,059 |
| Employment | Number | 3,57,366 | 3,73,314 | 4,14,316 |
| Input | Rs.million | 28,177 | 31,883 | 37,826 |
| Output | Rs.million | 37,860 | 42,631 | 50,012 |
| Value added | Rs.million | 8,029 | 8,883 | 10,118 |
| Net income generated | Rs.million | 6,714 | 7,312 | 8,134 |

Considering the importance of this industry in the present economy, and availability of data from different sources, it has been decided to study this industry for our purpose. As the study deals with the impact of corporate tax on specific

4. Commerce, Bombay. Nov. 25, 1978 p. 56, Oct. 31, 1981, p. 46.

manufacturing units in the form of case studies in the forthcoming chapters, it was decided to ask for the Annual Reports for a number of years from a number of companies. Accordingly requests were made followed by reminders but in fact we received Annual Reports and positive responses from a few companies out of which one Government company in the Public Sector and another company in the Private Sector have been selected. Showing the impact of tax on their behaviour, financial reports have got definite limitations as they do not reflect the tax informations in details. We have no other alternative but to confine ourselves with such behaviour as would be reflected in Annual Reports based on financial data.

The purpose of the study of the two companies is to investigate the relationship between the corporate tax and the aggregate amount of investment; growth of employment; sources of finance; and their profitability, liquidity and overall solvency positions in the form of case studies. The hypothesis is taken as that an increase in tax benefit, have no relation with such behaviour of the firms and the hypothesis would be tested with reference to two specific companies of chemical industry.

The approach followed in these two chapters would be a two-fold one. The first part of the empirical study would focus on the changes that occurred within the firms on their

investment, employment and sources of finance and the second part would reflect their behaviour regarding profitability,*1 liquidity*2 and solvency*3 positions. For the second part the main mechanism would be to create a number of ratios from balance sheets and income statements of the said companies and analysing them. The following tables are based on the published annual reports of the companies under study. The period under review has been taken considering availability of annual reports at hand.

The specific questions to be studied are :-

1. The financial performance of the companies at a glance from 1976-77 to 1980-81;

2. The amount of fixed assets formation and tax provisions;

3. The growth rates of investment and corporate tax provisions and the relationship between these two variables;

4. The sources and utilisation of funds for increase in the amount of fixed assets and relationship between the corporate tax benefits and the companies' financial structures;

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*Van Horne, J.C.-'Financial Management and Policy', Prentice Hall of India Private Limited, New Delhi, 1974.

*1 Earning power on shareholders' book investment. p. 666.
*2 firm's ability to meet short-term obligations. p. 657.
*3 firm's ability to meet long-term obligations. p. 662.

5. Whether the companies are employment-oriented or investment-oriented and to ascertain if there is any impact of tax benefits on such behaviour; and

6. the profitability, liquidity and solvency of the companies and to verify if there is any relationship between corporate tax and such behaviours.

In the perspective of profitability of Public Enterprises, it would not be out of place to recall the paper presented at the National Seminar of Senior Research Workers on Public Enterprises, ~~it would not be out of place to recall the paper presented at the National Seminar of Senior Research Workers on Public Enterprises~~ by Dr. P. Chattopadhyay, organised by the Institute of Public Enterprise at Hyderabad in March, 1982, where Dr. Chattopadhyay observed - 'A large number of public sector units operate in monopolistic conditions, having to sell almost their entire products to one buyer and the latter has a large role in determining, in the ultimate analysis, whether the enterprises earn profit or incur loss, in allowing price increases from time to time. Even now, a major part of total sales of the public sector enterprises is accounted for by those to sister public sector enterprises or to the government which together account for more than fifty percent of the total sales, in such conditions, both profit and profitability tend to become a sham. Higher profitability arising from pushing up unit prices in the absence of competitive conditions

in the open market would hardly reflect the efficiency of the organisation as such."[5] This observation will also be considered in the proper place when we shall deal with the profitability aspect of the public enterprise, selected as a case study.

## A. INDIAN PETROCHEMICALS CORPORATION LIMITED

### 5.2. A short outline of the firm taken as a Case Study.[6]

The Indian Petrochemicals Corporation Limited has been established as a large-sized Government chemical Company in the Public Sector for a number of years. It was registered on 22.3.1969 in Gujarat State and its registered office is in the district of Vadodara (Gujarat). The main products marketed by the corporation might be mentioned as Orthoxylene; Mixed-xylenes; Parasylene; Di-Methyl Terephthalate (DMT); Di-Methyl Isophthalate (Impure); Methyl Benzoate; C-9 Aromatics; Polybutadiene Rubber; Polypropylene; Propylene; Acrylic Fibre; Low Density Polyethylene; Benzene; Raffinate; Carbon Black Feed Stock; Acrylonitrile; Hydrocyanic Acid; Linear Alkyl Benzene; Heavy Alkylate; N-Paraffins; Ethylene Oxide and N-Heptane. For the purposes of production of such a variety of products the company had to depend upon the

5. Chattopadhyay, P. - 'Research on Financial Management in Public Enterprises', I.P.E. Journal, Hyderabad. 1982, pp. 11-12.

6. Government of India - 'Public Enterprises Survey'. V.3, 1979-80. Bureau of Public Enterprises, Ministry of Finance, New Delhi.

utilization of varieties of plants. The important plants used by the corporation might be noted as Aromatics Plant; Olefins Plant; Acrylonitrile Plant; Polybutadiene Rubber Plant; Linear Alkyl Benzene Plant; Polypropylene Plant; Ethylene Glycol Plant; Low Density Polyethylene Plant and Acrylic Fibre Plant. The Company's first annual report together with the audited annual accounts was published for 1969-70 and its twelvth report for 1980-81

It would be our endeavour to analyse in general the financial particulars of the Company for the last five years, from 1976-77 to 1980-81 and to answer the specific questions, as stated in the introductory section relating to the probable impact of corporate tax on its own behaviour. For that purpose a number of Tables have been prepared based on company's audited annual accounts for the years.

Nature of Capital structure of the company from 1975-76 to 1981-82 is shown as under:

The financial position of the Corporation as on 31st March:
(Rs. in millions)

| | 1982 | 1981 | 1980 | 1979 | 1978 | 1977 | 1976 |
|---|---|---|---|---|---|---|---|
| Authorised Capital | 2,000.0 | 2,000.0 | 2,000.0 | 2,000.0 | 2,000.0 | 2,000.0 | 2,000.0 |
| Issued, Subscribed and Paid-up Capital | 1,860 | 1,860.0 | 1,860 | 1,860.0 | 1,860.0 | 1,860.0 | 1,431.2 |
| Reserves and Surplus. | 1,117.5 | 562.0 | 221.3 | 164.3 | 295.3 | 272.1 | 197.2 |
| Secured Loans | 203.4 | 202.0 | 67.2 | 38.9 | - | - | - |
| Loan from Government of India | 744.2 | 1,077.8 | 1,088.1 | 1,228.8 | 1,205.7 | 692.5 | 146.0 |
| Loan from Oil Industry Development Board. | 219.3 | 362.2 | 414.5 | 81.3 | 31.0 | 20.0 | 10.0 |
| Deferred Credits | 14.7 | 21.5 | 29.3 | 36.6 | 58.3 | 61.3 | 24.6 |
| Amount pending Allotment Fixed Deposits | 26.5 | - | - | - | - | - | 118.8 |
| | 4,186.1 | 4,085.5 | 3,680.4 | 3,410.4 | 3,450.3 | 2,905.9 | 1,927.8 |

Contd.....

Contd.....

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Represented by Fixed Assets (including capital works-in-progress) | 2,475.2 | 2,515.5 | 2,571.1 | 2,763.6 | 2,906.0 | 2,376.5 | 1.530.2 |
| Net Current Assets | 1,710.9 | 1,570.0 | 1,109.3 | 646.8 | 543.7 | 528.3 | 396.0 |
| Miscellaneous expenditure to the extent not written off. | - | - | - | - | 0.6 | 1.1 | 1.6 |
| | 4,186.1 | 4,085.5 | 3,680.4 | 3,410.4 | 3,450.3 | 2,905.9 | 1,927.8 |

Source : Annual Reports.

5.3. Highlights

A firm's financial policy is mostly reflected in its basic accounting statements and the policies are influenced by many factors, internal and external, of which tax environment is likely to be the major one. Table V.1 will highlight the ups and downs of the corporation under study during the period from 1976-77 to 1980-81. Figures V.1.1. and V.1.2 will show the trends of sales revenue and equity, reserves & surplus and long-term borrowings from 1976-77 to 1980-81.

The Table indicates that no further issue of capital was made during the five years but reserves & surplus raised from Rs. 27 crores to about Rs. 56 crores, representing more than two-fold increase during the period. Borrowings and defefred credits also reflected an increase of more than two times, from Rs. 80 crores to Rs. 166 crores during the same period. So, for greater capital needs the company seems to depend upon mainly on reserves & surplus and loans & borrowings. One of the notable features of the finances of this corporation is the sharp increase of the amount of current assets and the substantial portion of such an increase confined to the increase in inventory value. The current assets increased from Rs. 84 crores in 1976-77 to Rs. 187 crores in 1980-81. Current liabilities decreased during the same period from Rs. 31 crores to about Rs. 30 crores. As a result the accounts reflected an increasing trend in working capital.

Table - V.I

INDIAN PETROCHEMICALS CORPORATION LIMITED

(FINANCIAL REFLECTORS)

(Rs. in millions)

| Particulars | 1976 - 77 | 1977 - 78 | 1978 - 79 | 1979 - 80 | 1980 - 81 |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Paid-up Capital (Equity) | 1,860.0 | 1,860.0 | 1,860.0 | 1,860.0 | 1,860.0 |
| Reserves & Surplus | 272.1 | 295.3 | 164.3 | 221.3 | 562.0 |
| Borrowings & Deferred Credits. | 773.9 | 1,294.9 | 1,386.1 | 1,599.2 | 1,663.5 |
| Current Assets. | 842.1 | 776.0 | 895.3 | 1,303.9 | 1,868.8 |
| Current Liabilities. | 313.7 | 222.2 | 248.5 | 194.6 | 298.8 |
| Gross Block (including capital W.I.P) | 2,499.9 | 3,114.6 | 3,211.8 | 3,288.3 | 3,496.8 |
| Gross Fixed Assets | 409.5 | 1,437.2 | 3,147.6 | 3,210.7 | 3,255.2 |
| (Plant & Mach) | (258.9) | (1136.4) | (2,773.9) | (2803.0) | (2813.8) |
| Net Fixed Assets. | 286.1 | 1,223.6 | 2,699.5 | 2,498.5 | 2,273.9 |
| Capital employed in the business (Net fixed Assets + Working Capital.) | 814.5 | 1,772.3 | 3,346.2 | 3,602.8 | 3,843.9 |
| Sales | 393.6 | 457.0 | 929.4 | 1,726.3 | 2,807.3 |

Contd.....

Table - V.I .....(Contd.)

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| Depreciation during the year | 38.7 | 85.3 | 239.4 | 275.4 | 265.0 |
| Interest | 11.6 | 15.8 | 90.7 | 140.9 | 167.2 |
| Provision for Taxes | 53.5 | -- | 31.1 | 0.2 | -- |
| Profit before tax | 134.8 | 24.9 | (-) 100.9 | 45.8 | 338.9 |
| Profit after tax | 81.3 | 24.9 | (-) 132.0 | 45.6 | 338.9 |
| Cost of Sales +/(-) Loss/ Profit before tax) | 258.8 | 432.1 | 1,030.3 | 1,680.4 | 2,468.4 |
| Inventory | 133.5 | 275.6 | 644.8 | 947.9 | 1,231.1 |
| Materials consumed | 122.7 | 108.8 | 328.4 | 645.5 | 988.5 |
| Net worth (Paid-up Capital+ Reserves & Surplus-intan. assets). | 2,131.0 | 2,154.8 | 2,024.3 | 2,081.3 | 2,422.0 |
| Working Capital (Current Assets, Loans and Advances-trade dues & current liabilities). | 528.4 | 543.7 | 646.8 | 1,109.3 | 1,570.0 |
| Gross Profit | 167.1 | 108.5 | 139.5 | 332.6 | 605.8 |
| Debtors | 0.4 | 26.9 | 39.6 | 49.5 | 173.3 |

Source : Annual Reports.

**INDIAN PETROCHEMICALS CORPORATION LIMITED**
Some Highlights

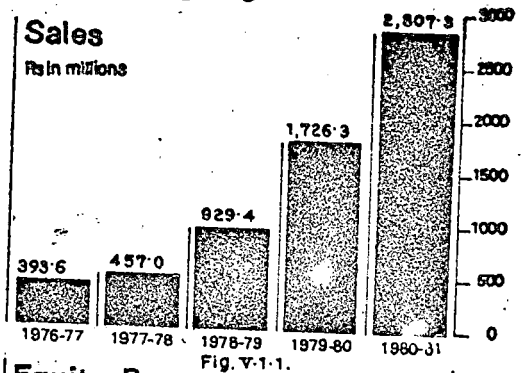


Fig. V·1·1.

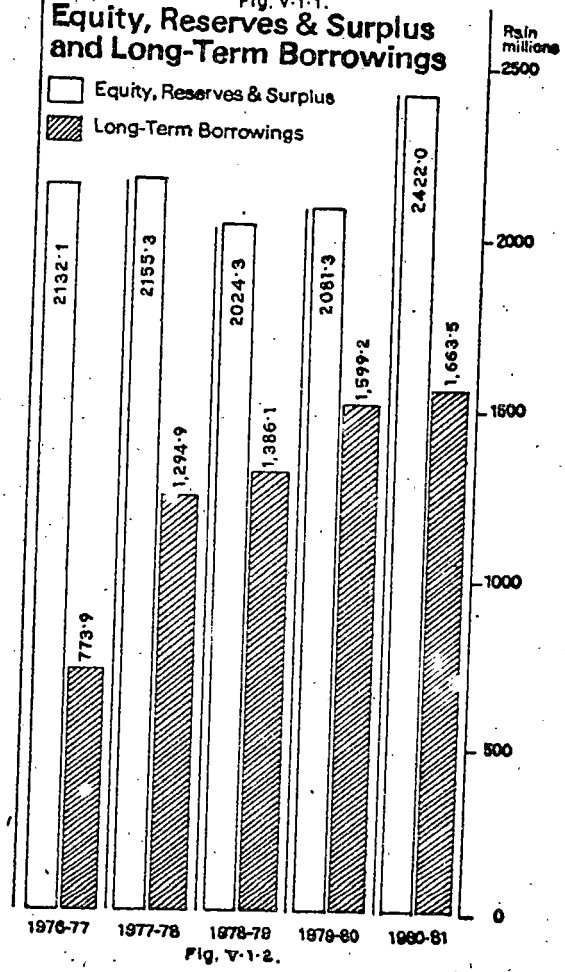


Fig. V·1·2.

But the major portions of the increase in working capital has been utilised for greater amount of inventory, which increased more than nine-times from Rs. 13 crores to Rs. 123 crores. By that time the gross fixed assets increased by about eight times, but the plant & machinery itself increased by eleven-times. That might reflect the probablity of greater utilisation of machines in comparison with the other components of fixed assets. The picture might, however, be seriously distorted if asset revaluation would have been made differently for different assets and if there was heterogeneous impact of price increase on such assets. Capital employed in the business had also increased from Rs. 81 crores to Rs. 384 crores, more than four and a half times during the five years period from 1976-77 to 1980-81. But it should be noted that there was a significant increase in 'capital employed' in the business in a single year, viz., 1978-79. The growth of sales remained unabeted during the period under study; from Rs. 39 crores in 1976-77 to Rs. 281 crores in 1980-81. It would be difficult, if not impossible, to find out what portions of such an increase was due to the impact of inflation and/or the capacity utilisation but it could be said that the volume of sales of all products substantially increased from year to year. The growth rates of cost of sales appeared to be higher than the rate of growth of sales. Cost of sales increased by about ten-times whereas the sales-figure reflected seven-times

increase during the five years period. One might think that such an increase in the cost of sales might be largely contributed by an increase in the value of materials consumed, which increased from Rs. 12 crores in 1976-77 to Rs.99 crores in 1980-81. It should be noted that the share of material consumed over cost of sales showed a declining trend over the years. Therefore, it could be presumed that an increase in administration/selling and/distribution overhead claimed greater share for the increase in cost of sales of the company under review. Provision for depreciation increased from about Rs. 4 crores in 1976-77 to Rs. 26.5 crores in 1980-81, reflecting an increasing dependence of the company on its fixed assets. Provision for taxes was Rs. 5 crores in 1976-77, Rs. 3 crores in 1978-79 and almost no provision was made for the years 1977-78, 1979-80 and 1980-81. That might be caused by greater availability of tax benefits including the advantage of set-off and carry forward of losses. Inspite of slight increase in the amount of gross profit in the year 1978-79, the annual accounts showed a net loss by over Rs. 10 crores. That might be one of the reasons for not providing any tax liability for the years 1979-80 and 1980-81 inspite of substantial amount of profits earned during the years.

Sources and utilisation of funds from 1976-77 to 1980-81 have been shown in Table V.2. While paid-up capital remaining same for all the years, the company shows an overall

Table - V.2

INDIAN PETROCHEMICALS CORPORATION LIMITED

(SOURCES & UTILISATION OF FUNDS)

(Rs. in Lakhs)

| Items | 1977 - 78 | 1978 - 79 | 1979-80 | 1980 - 81 |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| **Sources:** | | | | |
| Paid up Capital | 1,86,00 | 1,86,00 | 1,86,00 | 1,86,00 |
| **Loans:** | | | | |
| From Central Govt. | 1,20,57 | 1,22,88 | 1,08,81 | 1,07,77 |
| From Foreign parties: | | | | |
| Loans | -- | -- | -- | -- |
| Deferred Credits | 5,83 | 3,67 | 2,94 | 2,16 |
| From others | -- | 8,17 | 41,45 | 36,22 |
| Working Capital Loans from Central Govt. | 3,10 | -- | -- | -- |
| Cash Credit/Advances: | | | | |
| From Banks | -- | 3,89 | 6,72 | 20,19 |
| From others | -- | -- | -- | -- |
| **Internal Resources:** | | | | |
| Reserves & Surplus including specific Reserve | 29,53 | 16,43 | 22,12 | 56,20 |

Contd.....

Table - V.2 .....(Contd.)

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Depreciation (cumulative). | 20,86 | 44,82 | 71,72 | 98,13 |
| | 3,65,89 | 3,85,86 | 4,39,76 | 5,06,67 |
| Utilisation | | | | |
| Gross Block | 1,43,72 | 3,14,76 | 3,21,08 | 3,25,51 |
| Unallocated Expenditure during Construction. | -- | 7 | -- | -- |
| Capital Works-in-Progress | 1,67,74 | 6,35 | 7,75 | 24,16 |
| Others | -- | -- | -- | -- |
| Working Capital | 54,37 | 64,68 | 1,10,93 | 1,57,00 |
| Investment | -- | -- | -- | -- |
| Deferred Revenue Expenditure | 6 | -- | -- | -- |
| Deficit | -- | -- | -- | -- |
| | 3,65,89 | 3,85,86 | 4,39,76 | 5,06,67 |

Source : Annual Reports.

dependence on loans & borrowings and also on internal resources like reserves & surplus, depreciation and the like.

5.4. Fixed Assets Formation and Tax Provisions

For the analysis, Table V.3 has been prepared. Analysing the Table it could be found that investment in gross fixed assets increased from Rs. 41 crores to more than Rs. 325 crores during the five years under study from 1976-77 to 1980-81 of which 1978-79 showed a spectacular growth. The assets capitalised during this year amounted to about Rs. 171 crores and almost the whole of such growth had been contributed by the installation of different plants, like VC/PVC, DMT Expansion, Arcylates and 25 MW Captive Power Plant during the year. A plant for the manufacture of 5,000 tonnes per annum of petroleum resins by utilising certain fractions of olefins available within the complex was also being established during the year. Net fixed assets after charging depreciation amounted to about Rs. 28 crores in 1976-77 and Rs.227 crores in 1980-81. Profits earned by the Corporation before charging tax seemed to be fluctuating from year to year. The amount was roughly Rs. 14 crores in 1976-77 and Rs. 34 crores in 1980-81. In 1977-78 and 1979-80, profits before tax showed meagre amounts of Rs. 2½ crores and 4½ crores respectively. The year 1978-79 marked a loss of about Rs. 10 crores. Provisions for taxes were made of Rs. 5 crores in 1976-77 and Rs. 3 crores in

Table - V.3

INDIAN PETROCHEMICALS CORPORATION LIMITED

(FIXED ASSETS FORMATION AND TAXATION)

*(Rs. in millions)*

| Items | 1976 - 77 | 1977 - 78 | 1978 - 79 | 1979 - 80 | 1980 - 81 |
|---|---|---|---|---|---|
| Gross Fixed Assets | 409.5 | 1437.2 | 3147.6 | 3210.7 | 3255.2 |
| (Plant & Machinery) | (258.9) | (1186.4) | (2773.9) | (2803.0) | (2813.8) |
| Net Fixed Assets | 286.1 | 1228.6 | 2699.5 | 2493.5 | 2273.9 |
| Profits before Tax | 134.8 | 24.9 | (-) 100.9 | 45.8 | 338.9 |
| Provision for Taxes | 53.5 | -- | 31.1 | 0.2 | -- |
| Profits after Tax | 81.3 | 24.9 | (-) 132.0 | 45.6 | 338.9 |

Source : Annual Reports.

1978-79 approximately and for other years no provision was required to be made except for 1979-80 when an insignificant amount of Rs. 2 lakhs only was provided. Inspite of profits earned during the years the company was not required to provide for taxation which might reveal the probable utilisation of different tax benefits during the years. Though there was a loss in the year 1978-79, provision for taxes was made amounting to about Rs. 3 crores. That provision was created corresponding to the prior years as revealed by the related Annual Report of the Corporation. The loss for the year 1978-79 might be the reason for not providing any tax in the succeeding years availing advantages given in the provisions of Income tax in setting off losses against profits in the following years. Profits after tax came to Rs. 8 crores in 1976-77, Rs. 34 crores in 1980-81 and a loss of Rs. (-) 13 crores in 1978-79.

So, from the analysis it could be noted that various tax benefits availed of by the Company helped on its greater capital formation. Inspite of profits, there was lesser incidence of taxes and higher capital formation. Thus it can be said that higher tax benefits, lesser incidence of tax might have helped this company for greater capital formation.

5.5. Growth of Investment and Tax Provisions.

Table V.4 has been prepared for the purpose of showing the relationship between the growth of investment and tax liability.

On analysis of the Table many interesting features may be noted. Rate of growth of investment on gross fixed assets corresponding to previous years substantially varied from year to year. The rates were 251 percent in 1977-78, 119 percent in 1978-79 corresponding to the immediate previous years but the growth rate suddenly dropped to 2 per cent in 1979-80 and even to 1.4 percent in 1980-81. Gross fixed assets increased by Rs. 102 crores in 1977-78; 171 crores in 1978-79 but only Rs. 6 crores in 1979-80 and Rs. 4 crores in 1980-81. The Plant and Machinery Component which accounted for more than 90 percent of the increase in gross fixed assets in 1977-78 and more or less the same margin in 1978-79, suddenly, dropped to 46 percent in 1979-80 and even less than 25 percent in 1980-81. For the first two years, viz., 1977-78 and 1978-79, the rate of growth of Plant and Machinery were much higher than the overall growth rates in fixed assets but for the last two years upto 1980-81 the rate of growth of plant and machinery lagged far behind the overall growth rates during the same period. In absolute terms the growth of plant and machinery was recorded corresponding to the preceeding year as Rs. 93 crores

Table - V.4

INDIAN PETROCHEMICALS CORPORATION LIMITED

(INVESTMENT GROWTH RATES AND TAXATION)

| Items | 1976 - 77 | 1977 - 78 | 1978 - 79 | 1979 - 80 | 1980 - 81 |
|---|---|---|---|---|---|
| Absolute Growth of Gross Fixed Assets (Rs. Crores) | -- | 102.77 | 171.04 | 6.31 | 4.45 |
| Absolute Growth of Plant & Mach. (Rs. Crores) | -- | 92.75 | 153.75 | 2.91 | 1.08 |
| Rate of Growth of Gross Fixed Assets (%) | -- | 250.9 | 119.0 | 2.0 | 1.4 |
| Rate of Growth of Plant & Mach. (%) | -- | 353.2 | 133.8 | 1.1 | 0.4 |
| Tax provision as a percentage of profits before tax (%) | 38.2 | Nil | Nil* | 0.4 | Nil |

* Denominator (-) ve.

Source : Annual Reports.

in 1977-78, Rs. 159 crores in 1978-79, Rs. 3 crores in 1979-80 and Rs.1 crore in 1980-81. Tax provision as a percentage of profits before tax was 38.2 in 1976-77 but the provisions were almost nil in all the four years. The Company might think it unnecessary to provide for taxation presumably by an effective use of various fiscal measures including different tax benefits specially development rebate and investment allowances on new plant and machinery purchased during the years inspite of profit earnings in the years except in 1978-79.

Let us now analyse the sources of funds used to finance the increasing amount of investment by the Company. Table V.5 has been prepared from the Annual Reports of the Company showing the sources and utilisation of funds. Internal sources had played a greater role to finance gross capital formation during the years and that showed an increasing trend throughout the period. The share of internal sources of funds in capital formation was only 20.15 percent where the external sources contributed about 80 percent in 1977-78. The share of internal and external sources during 1978-79 and 1979-80 were 51.24, 54.80; and 48.76 and 45.20 respectively. Such share reached to 78.21 and 21.79 per cent in the year 1980-81. That might reflect the greater dependence of the Company on internal sources of funds for its increasing needs in capital formation.

Table - V.5

INDIAN PETROCHEMICALS CORPORATION LIMITED

(FINANCING OF GROSS ASSETS-INCREASE)

(Rs. in million)

| Particulars | 1977 - 78 | % | 1978 - 79 | % | 1979 -80 | % | 1980 - 81 | % |
|---|---|---|---|---|---|---|---|---|
| INCREASE IN GROSS ASSETS (Gross Block + W.I.P. + Current Assets + Misc. Exp.) | 538.0 | 100 | 241.8 | 100 | 498.2 | 100 | 773.4 | 100 |
| INTERNAL SOURCES OF FUNDS: | 108.4 | 20.15 | 123.9 | 51.24 | 273.0 | 54.80 | 604.9 | 78.21 |
| EXTERNAL SOURCES OF FUNDS: | 429.6 | 79.85 | 117.9 | 48.76 | 225.2 | 45.20 | 168.5 | 21.79 |
| | 538.0 | 100 | 241.8 | 100 | 498.2 | 100 | 773.4 | 100 |

Source : Annual Reports.

The share of fixed assets formation in total investment was the highest in 1977-78 while that of inventory formation was the highest in 1978-79. On the sources side depreciation and disposable profits after tax (internal source) showed a declining share in 1977-78 where the borrowings marked a significant role as external sources of funds. Normally fixed asset formation is financed by internal generation of funds and long-term borrowings, while inventory financing is done through short-term sources including borrowings from financial institutions and trade creditors. That may be the normal procedure in the corporate sector, companies may be diverting one way or the other depending upon the conditions prevailing in the money and capital markets and also the policy measures pursued from time to time. In the case of this Petro-chemicals Ltd., depreciation allowance became the major internal source in all the years under study and no other provisions were made for a particular use relating to specific liabilities incidental to the business, except a small amount of tax provision in the year 1978-79. Development Rebate Reserve, which was enhanced by Rs. 12 lakhs in 1976-77 remained the same amount of Rs. 512 lakhs till 1980-81 and has not been utilised so far. Again Investment Allowance Reserve Account created in 1976-77 by transferring Rs. 8 lakhs from the year's profit and loss account, remained the same till 1980-81, as revealed by the Annual Reports of the Company. So, neither the development rebate nor the investment allowance have any direct role of the

asset formation of the Company during the years. The accounts do not reveal also the erosion of General Reserve for the purpose of capitalisation which remained Rs. 24 lakhs for all the years. Though the Table V.1 showed a balance of profit after tax provision, transferred to Reserve & Surplus, acted as internal source of financing for 1977-78, 1979-80 and 1980-81 the share of such a profit became negligible in comparison with depreciation allowance and borrowings. Thus, it could be said that internal accumulation of funds was mainly encouraged by depreciation allowances and not by any capital replacement provision, like development rebate and investment allowance reserve, directly allowed by the taxation authorities for capitalisation. Through depreciation reserve, taxation have contributed in greater investment without which the incidence of taxes would have been more severe on the business. This is an indirect impact of taxation. There is hardly any direct impact of tax in this public enterprise, because of its control by the Government. As and when fund was required to be made, that was arranged from the Government of India, Oil Industry Development Board or from different nationalised banks. So there was hardly any scope of policy making by the management regarding sources of funds vis-a-vis impact of taxation in connection with investment in the assets of the business.

## 5.6. Investment, Employment and Taxation

It has already been noted in Chapter IV Section 4 that the scope of formulating tax policy in isolation to generate additional employment is inherently limited. If Government's other policies are congenial to create more employment, tax incentives might help in an indirect manner by enhancing fuller utilisation of plant capacity and by extending and/or establishing new industrial unit and the like.

In the preceeding Section 5.5 of this Chapter, it was hardly possible to identify any correlation between the specific tax benefits like development rebate and investment allowances, and investment in fixed assets which might generate more employment but it was identified that depreciation allowances became the major source of finance to cope with the increasing amount of investment. So, it has been taken for study to find out if there is any relationship between the growth of investment and growth of employment of this Indian Petrochemicals Corporation Limited or not.

Growth of investment in gross fixed assets and growth of employment during the years 1977-78 to 1980-81 have been computed and shown in Table No. V.6. Inspite of inherent limitations of tax incentives to create more jobs as discussed in the preceeding chapter under section 4, it might be noted that the Public Sector undertakings have shown a greater role in the Organised

Table - V.6

INDIAN PETROCHEMICALS CORPORATION LIMITED

(GROWTH OF INVESTMENT AND EMPLOYMENT)

(in percentage)

| | 1977 - 78 | | 1978 - 79 | | 1979 - 80 | | 1980 - 81 | | Average growth of Four years. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Invest-ment. | Employ-ment | Invest-ment. | Employ-ment. | Invest-ment. | Employ-ment. | Invest-ment. | Employ-ment. | Invest-ment. | Employ-ment. |
| | 250.9 | 34.3 | 119.0 | 19.1 | 2.0 | 8.9 | 1.4 | 4.6 | 93.3 | 15.5 |
| Actual | (1437.2) | (3842) | (3147.6) | (4577) | (3210.7) | (4986) | (3255.2) | (5218) | (2762.7) | (4406) |
| Growth | (1027.7) | (982) | (1710.4) | (735) | (63.1) | (409) | (44.5) | (232) | (711.4) | (598) |

Source : Annual Reports.

Investment in ( ) indicates Rs. in million.

Employment in ( ) indicates absolute numbers.

Sectors for creation of more employment (Vide Table IV.16) in India for the last few years. So, it would be our attempt to highlight how this Corporation also contributes towards this purpose and to find out the probable impact of taxation as such.

The aggregative growth of investment in gross fixed assets during the four years was 93.3 per cent whereas the average growth of employment during the same period was found to be only 15.5 per cent. Though industry average growth rates were 14.14 per cent in investment and 4.54 per cent in employment (vide Chapter IV, Table IV.17) which showed the inherent imbalance in investment and employment, in the case of this Petrochemicals Corporation, the imbalance shown to be of much wider. If provision of depreciation allowance was helpful to generate more savings and investment in this Corporation, one might conclude that tax allowances like depreciation had helped the Corporation to create more investment in fixed assets rather than in creation of employment.

5.7. Liquidity, Profitability and Tax Liability.

A Table V.7 has been prepared showing the liquidity and profitability position of India Petrochemicals Corporation Ltd. Here liquidity is measured by the ratios like (i) Current Assets to Current Liabilities, known as current ratio; (ii) Quick Assets to Current Liabilities, known as acid-test ratio; (iii) Inventories as percentage of sales/cost of sales, known as inventory turnover ratio.

## Table - V.7

### INDIAN PETROCHEMICALS CORPORATION LIMITED

(Liquidity, Debt - Equity and Profitability)

| Year | Tax provision as percentage of profits before tax. | Current Assets to Current Liabilities. | Quick Assets to current Liabilities. | Debt as percentage of Equity. | Profits retained as percentage of profits after tax. | Profits after tax as percentage of Equity paid-up capital. | Ordinary dividends as percentage of Equity paid-up capital. | Inventories as percentage of | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Sales | Cost of Sales. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1976-77 | 39.7 | 2.68 | 2.62 | 42 | 100 | 4.37 | + | 34.2 | 51.58 |
| 1977-78 | + | 3.63 | 2.74 | 66 | 100 | 1.34 | + | 60.3 | 63.78 |
| 1978-79 | @ | 3.75 | 1.24 | 70 | @ | + | + | 69.4 | 62.58 |
| 1979-80 | 0.4 | 6.70 | 1.78 | 81 | 100 | 2.45 | + | 54.9 | 56.40 |
| 1980-81 | + | 6.25 | 2.10 | 77 | 100 | 18.22 | + | 43.8 | 49.88 |

Source : Annual Reports.

+ Numerator Nil.

@ Denominator negative.

Profitability is measured by the ratios like (i) Profits retained as percentage of profits before tax; (ii) Profits after tax as percentage of Equity paid-up Capital. Tax liabilities have been shown in the form of ratio as Tax provision as percentage of profits before Tax.

The above mentioned ratios are computed from the data available through the Company's audited annual accounts and the period covered is five years, from the financial year 1976-77 to 1980-81. It will be our attempt to show the impact, if any, of tax liabilities over the liquidity and profitability behaviour of the company.

Analysing the Table, it could be noted that current ratios for all the years under study are more than the so called standard ratio of 2:1, showing the double coverage against current liabilities. That is more significant in the last two years where the value of current assets indicated more than six times the value of current liabilities. Such an over-liquidity position possibly does not reflect a sound management policy towards utilisation of working capital. Acid test ratio or Quick ratio is usually treated as true representative of actual liquidity of any business concern. In the case of this Government undertaking, quick ratio for all the years seems to be more than the conventional one of 1:1. Though inventory constitute a major portion in the years

1978-79, 1979-80 and 1980-81, for the first two years liquid assets constitute the main items of total current assets. In all the years, inventories as percentage of sales/cost of sales showed a considerable portion of the value or cost of the finished products. Such higher share of inventory in total current assets leads to substantially higher current ratios in comparison with the acid-test ratios almost in all the years under study. Tax liability indicating tax provision in the form of percentage on profits before tax, is seen only in the year 1976-77 and a very small provision in the year 1979-80. Higher provision is expected to form lower liquidity. From the Table V.7, it can be noted that in the years 1977-78 and 1980-81, when there were no provisions for taxes, acid-test ratios showed some increase over the immediate previous years. On the other hand, the acid test ratios, showing the relationship between quick assets and current liabilities, were significantly less in the years 1976-77 and 1979-80 when provisions for tax liabilities were made in both the years. Thus, an inverse relationship between tax liability and liquidity might be established in the case of this Government Company. Again, referring the capital structure of the company, the ratio between borrowed funds and owner's fund is seemed to be increasing over the years. Beginning from 42% as debts in the year 1976-77 the debt-equity ratio raised to 81% in 1979-80 and a little less in 1980-81. As debt raising is comparatively cheaper

than issuing of capital, interest on debts being allowed as deductible expenditure and dividend payable not being allowed so for income-tax purposes, debt might be preferred in capital-structure by any enterprise, whether Government or private. Well-established and long standing companies do generally have a low debt-equity ratio as they may generate their own resources from reserves and accumulated balance of profits.[7] The privilege might not have been possible for this company having its birth in 1969 only. The impact of increasing interest burden on debts is non-declaration of dividend on equity shares in any of the years and deductability of interest for tax purposes might also cause lesser or no provision for tax liability in the succeeding years.

It has been pointed out in the previous chapter that profitability of any enterprise is dependent on a number of factors and tax is one of such factors. We shall see if there is any relationship between tax provision, shown in the form of percentages over profits before tax, and other components of profits like retention, dividend etc. Provision for taxes was 39.7 percent in 1976-77 and only 0.4 percent in 1979-80 and more than Rs. 3 crores in 1978-79 in absolute terms. Inspite of profits earned in the

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7. For further details see 'Debt-Equity Norms in Public Enterprises in India' The Management Accountant, I.C.W.A. V.16, No. 12. Dec. 1981.

years, except in 1978-79, when there was a loss of more than Rs.10 crores, the corporation was hardly required to raise provision for tax liability. This might have been caused by availing different types of tax benefits including the benefits of carry forward and set-off losses for eight successive years from the year of such loss. The loss in 1978-79 is allowed to be carried forward and set-off against profits for 1979-80, 1980-81 etc. That was the main reason for not providing for tax liability in the subsequent years. The whole amount of after tax profits were retained in the business for all the years. The Corporation did not declare any dividend to the equity holders. Directors' Report says 'no dividend is recommended as the profit earned during the year under report is proposed to be utilised to meet capital expenditure including expenditure on provision of additional facilities to the existing plants'. Profits after tax shown as percentage of equity paid-up capital, reflected unsatisfactory condition through out the period though that improved much in the year 1980-81. However, it can be concluded that higher tax benefits leads to lower tax liability and greater profitability in the form of higher retention of profits in the case of this Government enterprise, Indian Petrochemicals Limited.

## 5.8 SUMMARY

The importance of chemical industry in the national economy was stressed and it was found that this industry ranks fourth among the manufacturing industries in India after textiles

iron and steel, and engineering industries in terms of production growth rates. It was shown that the annual compound growth rates of chemical industry in comparison with all manufacturing industries during the last five plan periods, from 1951 to 1979 was higher in all the years. Details of such industry as to the number of factories, total amount of investment, employment position, input, output, value added and net income generated for the years from 1975-76 to 1977-78 have also been shown to assess the importance of this industry. Annual reports of the companies had been taken as main source material and the period of study as the financial years from 1976-77 to 1980-81 had been considered on the basis of the availability of annual reports at hand. Financial reports have got definite limitations as they do not reflect the tax informations in details, we have no other alternative but to confine ourselves with such behaviour as would be reflected in Annual Reports based on financial data. Accordingly, a number of Tables had been prepared and analysed for showing the impact of corporate tax on their behaviour, like fixed assets formation; growth rates of investment; financial structure; employment generation; and liquidity, profitability and debt-equity position. The hypothesis was taken that an increase in tax benefit had no relation with such behaviour and such hypothesis was tested with reference to the companies viz., Indian Petrochemicals Corporation Limited and Tata chemicals Limited. The former being in this chapter and the later

is in the next chapter.

The observations made in the analysis of our study regarding Indian Petrochemicals Corporation might be stated briefly as follows:-

1. Higher tax benefits, like set-off losses, availed of by the company led to lower incidence of tax and thereby helped the company for greater capital formation (5.4).

2. Through depreciation reserve, taxation had contributed in greater investment in fixed assets, as there was no other capital replacement provisions, like development rebate reserve, investment allowance reserve. Development rebate reserve, which was increased by Rs. 12 lakhs in 1976-77 to bring the amount to Rs. 512 lakhs and investment allowance reserve account, created in 1976-77 by transferring Rs. 8 lakhs from that year's revenue accounts, appeared to remain unutilised till the last year of our study (5.5).

3. There was hardly any direct impact of tax regarding financial structure of this public enterprise, because of its control by the Government. As and when fund was required to be made, that was usually arranged from the Government of India, Oil Industry

Development Board or from different nationalised banks. So there seemed to be no clear policy by the management regarding its financial structure and the impact of corporate taxation on it (5.5).

4. Though it had been pointed out that the scope of formulating tax policy in isolation to generate additional employment is inherently limited, tax incentives might help in an indirect manner by enhancing investment and extending and/or establishing new industrial unit. In the case of this Government company, aggregative growth of investment in gross fixed assets during the four years from 1977-78 to 1980-81 was 93.3 per cent, and the average growth of employment during the same period was 15.5 per cent, corresponding to the average growth rates in the chemical industry on investment and employment were 14.4 per cent and 4.54 per cent respectively (Table IV.17). That showed an inherent imbalance between these two variables. In the case of this Petrochemicals Corporation, the imbalance shown to be of much wider. Different tax benefits, like depreciation reserve, set off and carry forward of losses might have contributed employment to some extent in an indirect manner but it could be said that such tax benefits helped the Corporation in creation of more investment, rather than employment (5.6).

5. Regarding liquidity position, current ratio for all the years under study, specially in 1979-80 and 1980-81, showed much higher than the conventional ratio of 2:1. Such an over-

liquidity position possibly did not reflect a sound management policy towards utilisation of working capital. Even the acid-test ratio, showing the relationship between quick assets to current liabilities, seemed to be much higher than the so called norm of 1:1. Inventory constituted major share in current assets, specially in the years 1978-79 to 1980-81 and that showed the over accumulation of this asset. It was noted that there was a tax liability of 39.7 per cent in 1976-77 and 0.4 per cent in 1979-80 and no tax liability in the years 1977-78 and 1980-81, shown as tax provision as percentage of profits before tax. Lower provision or no provision in the year led to higher acid test ratio and when there was higher tax liability in the years 1976-77 and 1979-80, the liquidity, shown in the form of acid-test ratio, reflected a reduction. Thus an inverse relationship between 'tax liability' and 'liquidity' might be established for this Petro-chemicals Corporation (5.7).

6. Debt-Equity ratio seemed to be increasing from 42 per cent in 1976-77 to 77 per cent in 1980-81. The impact of increasing interest burden on the revenue of the Corporation was non-declaration of dividend on equity shares in any of the years in our study. For tax purposes interest on debts is a deductible expense and possibly that became one of the reasons for lesser or no provision for taxes in the years of higher borrowings (5.7).

7. The huge amount of loss in 1978-79 was allowed to be carried forward for set off against income in the subsequent years and that was the main reason for not providing any tax liability in most of the years inspite of earning of profits ~~earnings~~ during the years. The whole amount of after tax profits were retained in the business for all the years and dividend was not declared. So, it could be said that higher tax benefits led to lower tax liability and greater 'profitability' in the form of higher retention of profits (5.7).