Economic Performance of Textile Mills Managed by Entyce, (TN & P) Ltd.

BY

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INTRODUCTION

I. INTRODUCTION

'Economic performance, economic growth and economic expansion have become the abiding interest if not the obsession of all modern societies. If the economic activity is branded as uneconomic, its right to existence is not merely questioned but energetically denied.(Schumacher (1978). An economy which uses the available resources optimally achieves rapid growth. A successful economy without growth can not be conceived. The development in any sector is possible only when it consumes less and accomplishes more. This is more true for the industrial sector. The various industries at present have the problem of rising price of resources. Expensive resources with unremunerative prices of the products make any modern industry heavily dependent on a net work of agreement with the Government, the producers of raw materials and consumers. In a low growth economy, the modern industrial system is gravely threatened by possible scarcities and high prices of materials.

Industrial health in India is at best uncertain. There are several adverse developments which affect industrial output in a manner not conducive to growth. 1981 was a good year for industrial development. The industrial output rose by 9½ per cent, and then the downward trend began. The rate of growth in 1982 was around 5 per cent which again has been decelerated to 3½ per cent in the first six months of

1983. (Tiwari (1983). The textile industry, the oldest of Indian industries has been plagued for a long period by continuing sickness due to several reasons. The labour intensive textile industry which obsorbs more than 87 lakh employees has been faring disastously during the last two decades. It was producing over 80 per cent of the cloth requirement of the country. At present its role has been drastically decreased as it is only producing 40 per cent of the requirement. The production, processing and sale of cotton which constitutes the largest industry in India, roughly which contributed 15 per cent of the National income during the fifties, is now in a crisis. (ICMF'83).

There are nearly 800 units in India of which about 60 per cent are based in 3 states - Tamil Nadu (303 units), Gujarat (114 units) and Maharashtra (108 units). The installed capacity of the Mills in Tamilnadu was 58.93 lakh spindles and 10169 looms. Tamilnadu stands first in terms of installed capacity and sixth in terms of production of cloth and yarn. The textile mills in the state produce one-third of the market yarn of the country. It also produces 20 per cent of the country's handloom cloth and 50 per cent of the hoisery goods. (Annual Report SIMA 1983).

Coimbatore is the largest cotton producing and processing area of Tamilnadu with 141 mills, both composite and spinning, producing nearly 70 per cent of the states' production of cloth and yarn. (Textile Bulletin 1983).

Quantitative studies carried out by SITRA reveal that Indian cotton have very low productivity level per active spindle. The profitability and resource generation of the textile industry during the last two decades has been the lowest among all industries. Annual Report,SITRA.(1979).

National Textile Corporation Limited was incorporated in April 1968 with the main objective of managing the affairs of the Sick Textile undertakings, one hundred and twelve mills came to be vested in NTC. All these mills were nationalised in 1974 by an Act of Parliament. (Annual Report Entyce 1975).

According to NTC sources, the corporation is concerned over the loss of Rs.105 crores in 1982-83 and has asked the subsidiaries to take steps on a priority basis to improve the working of mills under their charge. In this context Adiseshiah (1983) comments critically on the paradox afflicting the teztile industry, while 25 per cent of the mills in the private sector and 112 mills in the NTC were sick in the last decade, 200 new units had come up. This means the explanation given by mills namely, high cotton prices and taxes, and preference given to the decentralised sector, are less important.

It is in this light, the present study was taken up with the aim of finding out the performance of the mills

managed by Entyce, (TN & P) a subsidiary corporation of NTC, New Delhi. The specific objectives of the study were to:

1. asses the economic performance of the mills managed by Entyce in terms of production, productivity, capacity utilisation, factor inputs employed and profitability,
2. find out the growth in the value of production, capital and labour employed,
3. estimate the production function and
4. assess the role of NTC in the development of the textile sector.

The hypotheses tested in the study were

1. The value of production has no relation to the factor inputs, capital and labour, and
2. NTC has not significantly contributed to the development of textile industry.

The current study is confined to the analysis of the factor product relationship in terms of the factor cost and product price which are determined by the market forces. The hypothetical estimates obtained from actual details of factor cost and value of production will privide some possible explanations of the extent of relationship between value of output and cost of input.

Limitations:

The analysis relates to the book values as given in the Annual Reports and Balance Sheets of the ENTYCE. The statistical tools used, assumed the same economic forces continuing to behave in a similar pattern in the future. The tools used are only aids to the application of good judgement.

REVIEW OF LITERATURE

II. REVIEW OF LITERATURE

The literature related to the study on 'The Economic performance of Textile Mills under Entyce', (TN & P) is reviewed under the following heads:

1. Textile Industry in India;
2. Textile Industry in Tamilnadu, and
3. Related studies:
   a. Report of the Government of India;
   b. Studies conducted by SITRA: and
   c. Report of the case study of ICRIER and NCAER

1. Textile Industry in India:

Some economic aspects of Textile Industry in India are given and discussed in the following paragraphs:

a. Production of cotton by states in selected years:

Statewise production of cotton is given in Table 2.1

b. Consumption of cotton by mills:

TABLE 2.2

CONSUMPTION OF COTTON BY MILLS 1956-1982
(In lakh bales of 170 kgs each)

Year	Indian	Foreign	Total
1956-57	48.74	5.96	54.70
1961-62	49.86	10.36	60.22
1962-63	50.71	9.33	60.04
1963-64	57.96	6.42	64.39
1964-65	59.42	8.04	67.46
1965-66	55.15	6.48	61.63
1966-67	54.87	6.15	61.02
1967-68	56.78	8.50	65.28
1968-69	59.34	6.30	65.64
1969-70	59.90	7.56	67.56
1970-71	53.71	8.96	62.67
1971-72	59.21	8.12	67.33
1972-73	62.36	6.31	68.67
1973-74	69.84	2.94	72.78
1974-75	69.15	1.95	71.10
1975-76	73.31	2.14	75.45
1976-77	63.60	3.92	67.52
1976-77	63.60	3.92	67.52
1977-78	60-70	5.46	66.16
1978-79	68.35	1.46	69.81
1979-80	73.58	0.54	72.12
1980-81	76.68	0.10	76.78
1981-82	70-74	0.49	71.23

Source: Hand Book of Statistics on Cotton Textile Industry, 1958-1982.

It is evident from the table 2.2 that the consumption of cotton in general has been increased from 50 lakh bales to 70 lakh bales. Total consumption from internal sources has been continuously increased. On the other hand the consumption of cotton from external sources has been continuously decreased, showing the dependence of cotton textile industry on internal availability of raw materials.

C. Number of mills and installed Capacity:

The details of Statewise number of mills and installed capacity are given in Table 2.3.

TABLE 2.3

STATEWISE NUMBER OF MILLS AND INSTALLED CAPACITY, 1983

State	Number of Mills			Installed spindles (In thousands)	Installed looms
	Spinning	Composite	Total		
Andhra Pradesh	33	2	35	845	1246
Assam	2	..	2	39	..
Bihar	4	2	6	100	596
Gujarat	25	89	114	4161	65206
Haryana	13	2	15	294	978
Jammu and Kashmir	1	..	1	28	..
Karnataka	25	11	36	883	6414
Kerala	22	5	27	623	1504
Madhya Pradesh	7	17	24	781	12994
Tamilnadu	279	24	303	3893	10169
Maharashtra	30	78	108	5023	77653
Orissa	4	1	5	125	1014
Punjab	11	2	13	388	1210
Rajasthan	16	7	23	551	2939
Uttar Pradesh	27	15	42	1381	13262
West Bengal	23	18	41	1056	9465
Delhi	..	4	4	167	3370
Pondicherry	2	3	5	165	2679
Goa	1	..	1	26	..
Total	525	280	805	22532	2,10,729

Source: Hand Book of Statistics On Cotton Textile Industry, 1983.

It is revealed from the Table that, nearly one third of the total textile mills are located in Tamil Nadu (303 mills). The number of installed spindles in Tamilnadu Accounts for about 25 per cent of the total installed spindles in India. Similarly the number of looms in Tamilnadu account for about 50 per cent of the total installed looms in India.

d. Production of yarn and cloth:

Production of yarn and cloth are given in Table 2.4

TABLE 2.4

DETAILS OF PRODUCTION OF YARN AND CLOTH 1971-83

Year	Total yarn (Million kgs.)	Total cloth (Million metres)
1970-71	1002	7774
1971-72	996	7780
1972-73	1062	8141
1973-74	1087	8183
1974-75	1115	8493
1975-76	1105	8509
1976-77	1125	8401
1977-78	1149	8490
1978-79	1272	9409
1979-80	1217	9065
1980-81	1296	9654
1981-82	1249	10982
1982-83*	1218	10566

*Figures for 1982-83 are inclusive of Provisional Production Figures of Bombay Mills.

Source: Handbook of Statistics on Cotton Textile Industry, 1971-83.

It is revealed from the Table that the production of cotton and yarn has been increasing during the period 1971-83. There is a drop in both the production of cloth and yarn during the year 1979-80 and 1982-83.

e. Employment:

The details of employment in Textile mills in India are given in Table 2.5.

TABLE 2.5

DETAILS OF EMPLOYMENT IN TEXTILE MILLS IN INDIA
1973-1980

Year	Spinning	Composite	Total
1973	201	820	1021
1979	208	819	1027
1975	215	816	1031
1976	225	803	1028
1977	235	838	1073
1978	240	841	1081
1979	395	291	686
1980	400	291	691

Source: Indian Textile Bulletin: 1973-1980.

The Table shows that the number of labourers in the spinning mills has been increasing continuously throughout the period. There is also an increase in the number of labourers in the composite mills except during 1979-1980.

f. Revenue from Textile industry:

The details of revenue from textile industry are given in Table 2.6

TABLE 2.6

DETAILS OF REVENUE FROM TEXTILE INDUSTRY 1969-1984
(In crores of rupees)

Year	On cloth	On yarn sold	Total
1969-70	75.65	34.07	109.72
1970-71	73.81	32.96	106.77
1971-72	80.59	34.98	115.57
1972-73	81-65	33.65	115.30
1973-74	99.48	33.78	128.26
1974-75	109.15	55.94	165.09
1975-76	109.47	73.34	182.81
1976-77	109.37	68.16	177.53
1977-78	135.30	69.95	205.25
1978-79	136.44	87.88	224.32
1979-80	141.81	97.53	239.34
1980-81	161.16	108.59	269.75
1981-82	168.28	103.41	271.69
1982-83	161.73	100.00	261.73
1983-84	171.43	102.45	273.88

Source: Hand Book of Statistics on Cotton Textile Industry, 1969-84.

The Table reveals that the revenue from the cloth has been increasing in all these years. Revenue from yarn by way of sales tax is increasing except during the year 1982-83. On the whole the revenue from the textile industry shows an increasing trend.

2. Textile Industry in Tamilnadu:

Some economic aspects of Textile Industry in Tamil Nadu are discuesed in the following paragraphs.

a. Number of mills, installed capacity and employment:

TABLE 2.7

DETAILS OF NUMBER OF MILLS, INSTALLED CAPACITY AND EMPLOYMENT IN TEXTILE MILLS IN TAMIL NADU 1983

State/Zone	Number of Mills	Installed spindles (In Thousands)	Installed looms	Employment Number of labourers employed
Tamil Nadu	303	5,893	10,169	1,19,046
(a) Coimbatore	141	2,808	4,029	46,235
(b) Rest of Tamil Nadu	162	3,085	6,140	72,811

Source: Indian Textile Bulletin: 1983.

The Table reveals that Tamilnadu has the maximum number of mills. The installed capacities of spindles and looms are also more when compared to other states. The mills employ more than one lakh persons. More than 40 per cent of the mills are located in Coimbatore District and employing 46,000 persons.

b. Production of yarn and cloth:

The details of production of yarn and cloth are given below:

TABLE 2.8

DETAILS OF PRODUCTION OF YARN AND CLOTH IN TAMILNADU

1970-1979

Year	Yarn ('000' tonnes) Thousand	Cloth (Million metres)
1970	176	174
1971	162	153
1972	160	153
1973	151	144
1974	164	145
1975	167	153
1976	185	167
1977	177	150
1978	198	171
1979	105	75

Source: Tamil Nadu: An Economic Appraisal, 1979.

The Table reveals that the production of yarn is decreasing over these years. The production of cloth also has decreased during the period. The decrease in the production of cloth and yarn indicates that the textile industry in Tamil Nadu is not performing well.

3. Related studies:

a. Report of the Government of India:

Performance of Mills:

Government of India studied the performance of Textile Mills in India during April to September 1971. The three aspects of performance studied are productivity, quality and profitability in 20 mills spread all over India.

i) Productivity:

1. Of the twenty mills studied, only 3 mills are working their weaving departments for 2 shifts, with one more mill starting third shift in September 1971. As a result, loom activity, in a large majority of the mills is below the optimum level.

2. The unfavourable trading conditions in recent years marked by steady increases in the prices of cotton have aggravated the difficulties of the mills and from those view point also, modernisation assumes primary importance for making them viable.

3. The details of modernisation programmes supplied by 19 mills envisage an outlay of Rs.12.5 crores. Fifty per cent of this is on spinning departments, 17 per cent on weaving and the remaining on processing and engineering.

(ii) Quality:

1. It is inferred that at all stages, quality of production needs to be improved.

2. The modernisation programmes to be taken up with, to a great extent, help in improving the quality of the product also.

3. The introduction of quality control measures at each stage of operation will help in identifying the cases for poor quality and for taking remedial measures for improvement.

(iii) Profitability:

1. The period April to September 1971 witnessed abnormal increases in the prices of Indian Textile which considerably affected the economic functioning of the entire industry.

2. As a result, only 6 of the 20 mills had made profits and the others had made losses.

(iv) Conclusions drawn regarding cost of production:

The raw material cost is seen to be some what high in most of the mills, and the cost ranges between 50 to 55 per cent in the case of composite mills and about 63 to 68 per cent in the case of spinning mills.

2. Wages:

The wage cost exceeded 25 per cent in all the 5 composite mills incurring the maximum losses. Wage cost was about 20 to 22 per cent of turnover for composite mills and 13-15 per cent of turnover for spinning mills.

3. Stores:

The overheads are seen to be high only in 2 mills.

b. Studies conducted by SITRA:

i. Productivity of Textile Mills:

Rajagopalan of SITRA has conducted a study on the productivity of mills in and around Coimbatore. He came to the following conclusions about labour and machine productivity:

A mill on an average of 6.3 operative hours per one lakhs picks (H.O.P) about 2 thirds of the total H.O.P. is contributed by loomshed 1/2 by winding and 3 to 5 per cent by other departments. The overall weaving labour productivity varies between mills 3 times. About 80 per cent the variation in productivity is explained by the number of cooperatives engaged.

ii. Labour and machine productivity in Spinning Mills:

Rajamanicam, R., Ranganathan, R., and Rathnam, T.A. have carried out a study on "Labour and Machine Productivity

in Spinning Mills over a period of 29 years (1950-1979).

The following are the conclusions:

a. For an average mill 1 per cent production would mean a saving of about 3 per cent per spindle, per year and 1 per cent higher utilisation would result in a savings of Rs.2.50 spindles per year.

b. Over the past 22 years the labour productivity has increased in all mills by 147 per cent. About 57.5 per cent of their increase in spinning productivity is attributed to the cooperatives engaged.

iii. 'Product mix and profitability techniques'

Harinath Babu, P.R. has conducted a study on "Product Mis and Profitability Techniques". In this study he has dealt with prior fluctuations and profitability and suggested the cost of estimation for each.

He has concluded that in the textile mill, the profit level varies widely among mills. The main reason for variations in profits among mills are the turnover and price fetched for the yarn and the labour cost (Wage) and the yarn selling price.

iv. Effects of modernisation on productivity and profitability in Textile Mills:

A study has been conducted on the "Effect of Modernisation on Productivity and Profitability in Textile Mills by Varadharajan, S.K. in that he has classified the factors affecting the profit of a unit as internal and external. The internal factors which affect the profit margin are prices of inputs, prices of goods and productivity.

He has recommended the modernisations in Textile Mills to improve their productivity and in turn to increase their profitability to a large scale.

v. Spinning cost in Mills:

SITRA survey findings on "Spinning costs in Mills" has completed its fifth survey on spinning costs for July to September 1982. The survey 165 member mills and the following are the salient findings:

a. About 8 per cent of the mills surveyed realise very high yarn selling prices in various counts to the extent of 5 per cent or even more when compared to the industry average and raw material cost in these mills is only 1 per cent above the average.

b. On the other hand, the yarn selling price in 10 per cent of the mills is less than the average by about 5 per cent or more, but the raw material

cost in these mills is about 2 per cent lower than the average of the mills included in the study.

vi. A case study:

The findings of the study were:

1. The difference in counts and type of yarn spun between mills did not have much effect on the differences in profits.

2. The Labour cost expressed as a percentage of sales turnover is about 2 times for low profit mills. In fact this is the largest factor influencing profit variability accounting for over 50 per cent of the difference in profit margin. Statistical analysis of the data of all mills confirmed the high association between wages and profits. The correlation co-efficient being 84. Between mills the labour cost varies about 5 times, ranging from 6.3 to 30.4 per cent of the net sales turnover.

3. The total sales of revenue in high profits mills is about twice that of low profit mills.

4. The machine productivity in low profit mills is lower by 50 per cent. Between mills, the machine productivity differs 3.2 times. The machine productivity which is determined by machine utilisation and production per spindle is highly correlated

with profit per spindle (r = 0.67).

5. The study showed that 90 per cent of the mills, where salaries and wages were higher than 2 per cent of yarn sales revenue and machine productivity index was lower than 75 and where no measures were taken had very low productivity.

6. The raw material cost and yarn Sales price show some degree of association but the relationship is not high, the correlation co-efficient being 0.44.

c. Report of the case study of ICRIER and NCAER:
A Case study of Indian Textile Industry: Asok Desai.

This study is a product of the ICRIER and NCAER project on technology development during 1950-1979. The major findings were:

1. The spindle capacity utilisation has increased from 62.2 per cent to 78.9 per cent during 1950-1979.

2. There is a slight increase in the average spindle per mill (from 20 to 26 per cent).

3. The number of spinning mills has increased from 94 to 370 and composite mills from 268 to 291.

4. Regarding loom utilization there is an increase from 56.55 per cent to 78.90 per cent. The locm per

worker has increased from 1.27 to 1.86 during the same period.

5. The differential turnover policy of the government has led to a shift in the output pattern. The duties diverted production to power looms and the diversion was greater in the case of fine fabrics which were more heavily taxed.

6. Analysis of variance was used to compare the efficiency of spinning mills and composite mills and spinning and bankrupt mills.

The conclusions derived were:

a. Sales per worker were apprecially lower in the composite mills and so the wage costs were higher.

b. The spinning mills incurred higher processing costs and realised a higher value per unit of cotton consumption.

c. The surviving mills utilised their spindles and looms more fully than bankrupt mills.

7. The development in the textile industry have dictated the shape of the textile machinery industry. The small new spinning mills and weaving mills have created a demand for cheap, simple and steady weaving and spinning equipment.

METHODOLOGY

III. METHODOLOGY

The methodology adopted in the current study on the Economic performance of textile mills under Entyce (TN&P), is discribed under the following heads:

1. Selection of the Unit;
2. Sources of data;
3. Tools of analysis and
4. Definition of terms.

1. Selection of the Unit:

The investigator selected the Unit Entyce (TN & P), a subsidiary Corporation of NTC, because fourteen out of 112 mills are under its control. Out of the 14 mills, 13 are in Tamil Nadu. Tamil Nadu was one of the industrially advanced states during early seventies. It has lost its third place in the industrial map and now it is in the eleventh place. In the textile front, Tamil Nadu stands sixth in production and employment. There were several adverse developments which affected the textile industry during the seventies and Entyce had taken up mills during 1974 in Tamil Nadu and Pondicherry (Appendix I.). Since then, there has been a continuous increase in cumulative loss to the corporation till 1978. Buoyancy in market conditions enabled this corporation to earn profit during 1978 to 1981 and again the corporation had to incur loss. Hence, Entyce's performance was

taken up for the indepth analysis.

2. Sources of Data:

The data related to the current study was collected from secondary sources. Information on the extent of production, employment, expenses, profit, loss, sales and income were collected from the published annual reports for the period 1974 to 1983 from Entyce, the head office of which is located in Coimbatore (vide Appendix II). General information on textile industry in India and Tamil Nadu were collected from the following official and non-official sources:

1. Hand book of statistics on Cotton Textile Industry - Published by the Indian Cotton Mills' Federation, Bombay, 1983.
2. Tamil Nadu - An Economic Appraisel - Published by Finance Department, Government of Tamil Nadu, 1979.
3. Indian Textile Bulletin 1973-1981.
4. India - A reference manual. Government of India Publication - 1983.
5. Official Reports - SITRA, Coimbatore.

Other journals and magazines were also referred to.

3. Tools of Analysis:

Percentage of cost components to total cost, capital components to total capital employed, capacity utilisation, sales of cloth and yarn, production of cloth and yarn were worked out. The methods used in the study for estimating growth rates in the relevant variables and production function were adopted from Kornai (1975) (Vide Appendices III and IV).

a. For finding out the growth rates:

To find out the growth rates in the capital, labour employed and value of production realised, a time series exponential trend line of the form

$Z_t = Z_o \, e^{\lambda t}$ was fitted where

Z_t = variable (capital, labour and value of production)

λ = growth rate

t = time

Z_o = initial coefficient

b. For estimating the production functions:

i. Production function - restricted.

Assuming a direct relation between the value of production, capital and labour employed, the Cobb-Douglas Production function was fitted. This is given by:

$Y = AK^{\alpha} L^{1-\alpha}$ where

Y = value of output

K = Capital employed

L = Labour employed

α = Constant

A = Initial coefficient

The value of the exponent of K, in terms of various growth rates was obtained. This procedure was used in estimating the exponents of capital and labour in preference to the multiple regression analysis for the following reasons:

a. It straight away gives the growth rates

b. The variables capital and labour are assumed to be exponential function of time (ie.) log k and log L are linearly related to time 't'. Kornai maintains that when there is collinearity between the variables, the multiple regression analysis cannot furnish an acceptable estimate.

ii. Production function - unrestricted:

To test the returns to scale, an unrestricted Cobb Douglas production function was fitted. This is of the form:

$Y = AK^{\alpha} L^{\beta}$

iii. For Assessing the role of NTC:

Assuming a linear relation between NTC_{Credit} and working capital of the mills, a simple linear regression line was fitted. This is given by:

$W = a + bc + \varepsilon i$ where

W = working capital

c = NTC Credit

a,b = Regression parameters

εi = Regression error

4. Difinitions of terms:

a. Gross rate of return = $\frac{\text{Gross Income}}{\text{Gross expenditure}}$

b. Return on operating cost = $\frac{\text{Gross Income}}{\text{Operating cost}}$

c. Spindle productivity Index = $\frac{\text{Quantity of Yarn}}{\text{Number of spindles}}$

d. Capital coefficient = $\frac{\text{Value of output}}{\text{Value of fixed capital}}$

e. Labour coefficient = $\frac{\text{Value of output}}{\text{Number of workers}}$

f. Solvency Index = $\frac{\text{Current liabilities}}{\text{Current Assets}}$

g. Liquidity index = $\frac{\text{Capital reserves}}{\text{Current liabilities}}$

The results of the analysis are discussed in the next chapter 'Results and Discussion'.

RESULTS AND DISCUSSION

IV. RESULTS AND DISCUSSION

The results of the analysis carried out are presented and discussed under the following heads:

1. General Information;
2. Capital Structure;
3. Cost Structure;
4. Financial Sources:
5. Capacity Utilisation;
6. Production and Sales;
7. Employment;
8. Income/profit;
9. Efficiency Indices;
10. Determination of growth rates;
11. Estimation of Production function, and
12. Assessment of the role of NTC in the textile sector.

1. General Information:

ENTYCE (TN & P) Limited, a subsidiary of National Textile Corporation Limited (NTC) was registered on 14.10.74 to take over the mills nationalised as per Sick Textile Undertakings Act, 1974. Entyce has taken over all the assets of the undertakings and liabilities.

During the year ended 31.3.75, only eleven mills were transferred to ENTYCE from 1976, another 3 mills have also been transferred to ENTYCE.

The Share Capital was only Rs..25 lakhs, which is increased to Rs.1,335 lakhs in 1983. There is a remarkable increase in the production of cloth and yarn over these years nearly six times increase.

The main source of funds for the Corporation is NTC, which provides funds for modernisation; labour rationalisation and for recouping cash losses as and when they arise. The Corporation also gets loans from Banks, IDBI, IFC etc.

The Corporation employs 13,000 members of staff, workers and officials. The senior positions in the spheres of marketing, finance and technical are filled in by qualified experienced persons. Many welfare programmes for the workers are introduced and are being effectively implemented.

Modernisation and expansion programmes, being continuous processes, the Corporation is spending a sizable amount on these. So far Rs.1961 lakhs, nearly 40 per cent of the working capital has been spent on these schemes.

Due to spurt in the price of cotton and the cost of operation including Employee cost, the cost trend shows a tremendous rise. For example the employee cost alone ranges between 39 to 45 per cent of the value added.

Though production/sales were higher, the carried over stocks were high in all these years evidencing sluggishness

in the market which made serious inroads into the overall profitability. The rising cost of operation with accumulated stocks of finished products resulted in an accumulated loss of Rs.200 lakhs over these years for the Corporation. Increased productivity coupled with good market conditions and easy cotton prices have enabled the Corporation to make profits during the period 1978-81.

Keeping with the tradition to help weaker sections of the society, the Corporation is supplying controlled cloth. As a matter of policy, preference is being given to Small Scale Industries in the purchases of stores.

The substantial progress of the Corporation during this period 1974-83 in terms of increase in net assets and productivity, would not have been possible but for the guidance and assistance of the Government of India.

2. Capital Structure:

The total capital employed by the mills consists of Fixed Capital and Working Capital. The fixed Capital includes investment on plant, machinery, equipment, Capital Work in progress, vehicles and the working capital includes current assets less current liabilities excluding provision for gratuity. The details of capital components of the mills managed by Entyce are given in Table 4.1.

TABLE 4.1

CAPITAL COMPONENTS OF THE MILLS
1974-83

Rupees in Lakhs

Year	F.C.	W.C.	Equity	Total Capital
1975	329.03 (24.87)	993.79 (75.13)	.25	1322.83
1976	406.31 (27)	1098.59 (73)	311.59	1504.9
1977	661.65 (31.5)	1439.30 (68.5)	765.03	2100.95
1978	795.85 (29)	1828.97 (71)	907.90	2574.82
1979	925.96 (31.1)	2047.05 (68.9)	957.74	2973.01
1980	1170.95 (34.5)	2226.07 (65.5)	1059.73	3397.02
1981	1870.47 (43.6)	2419.47 (56.4)	1335.83	4289.94
1982	2790.24 (54.7)	2314.76 (45.3)	1335.83	5105.00
1983	3155.85 (55.4)	2543.07 (44.7)	1335.83	5698.92

Figures in Parantheses show . percentages to row totals.

Source: Annual Reports: 1974-83 Entyce - Coimbatore.

It is clear from the Table that there is a continuous increase in the fixed capital and decline in the working capital. When the Corporation had taken over the assets in 1974, the fixed capital accounted for about 25 per cent which has doubled over these years. The modernisation programme and the installation of more spindles and looms are the reasons for this increase. The working capital on the other hand which accounted for about 75 per cent in 1975, has been reduced to 45 per cent in 1983. Modernising the machinery and installation of new machines which are generally included in the current assets will be added on to the fixed assets as and when they are completed. Hence this decline in working capital. Since the equity capital is a part of working capital, it is not shown separately in the Table. In 1974-75, the percentage of equity capital to working capital is meagre. As the Corporation started mobilising share capital, the percentage of share capital to working capital increases to 50 per cent in 1983. The substantial increase in the investment on fixed assets indicates the progress of the Corporation.

3. Cost Structure:

The total cost of production consists of fixed costs and variable costs. The fixed costs include the value of fixed assets less capital work in progress which is not used

in the production process, less depreciation. The variable costs include the material cost, processing cost (operating cost) and other administration and distribution costs. The donations given by the Corporation, Investment allowance and Development rebate allowance which are shown as expenses of the Corporation are not included in cost of production. The details of costs of the mills are given in Table 4.2.

TABLE 4.2

COST COMPONENTS OF THE MILLS
1974-83

Rs.in lakhs

Year	Fixed cost	Variable cost	Total cost
1974-75	327.59 (13.6)	2075.34 (86.4)	2402.93
1975-76	388.15 (16.1)	2028.55 (83.9)	2416.7
1976-77	629 (14)	3882.23 (86)	4511.23
1977-78	726.24 (14.7)	4329.47 (85.3)	4955.71
1978-79	874.16 (15.9)	4624.14 (84.1)	5512.16
1979-80	1031.84 (21.0)	3708.77 (78.2)	4740.61
1980-81	1402.99 (22.2)	4906.63 (77.0)	6309.62
1981-82	2267.70 (25.8)	6537.04 (74.2	8804.74
1982-83	2823.47 (29.5)	6739.76 (70.5)	9563.23

Figures in Parantheses show the percentages to row totals.

Source: Annual Reports - 1974-83 - Entyce, Coimbatore.

The analysis of Table 4.2 reveals the following facts:

1. There is a continuous increase in the fixed cost percentage to total cost, (13.6 per cent in 1974 to 29.5 per cent in 1983) indicating that the mills are keen in keeping their assets position safe.

2. There is a continuous increase in the variable cost of production due to high wage cost, high prices of raw materials other cost of operation and the high administration and selling cost. But in terms of percentage, it is declining. The increasing percentage of fixed cost with a declining percentage of variable cost indicates the economic viability of the industry.

The details of variable cost of the mills are given in Table 4.3.

TABLE 4.3

VARIABLE COST COMPONENTS OF THE MILLS
1974-83

Rs.in lakhs

Year	Material cost	Processing cost	Offer costs	Total
1975	1318.91 (63.5)	558.54 (26.9)	197.89 (9.6)	2075.34
1976	1137.94 (56)	610.65 (30.1)	279.96 (13.9)	2028.55
1977	2240.52 (57.7)	991.11 (25.5)	650.66 (16.8)	3882.23
1978	2639.32 (62.4)	1067.08 (25.2)	523.07 (12.4)	4229.47
1979	2667.61 (57.7)	1228.99 (26.8)	717.54 (15.5)	4624.14
1980	1876.31 (50.6)	1188.2 (32)	644.26 (17.4)	3708.72
1981	2627.76 (53.6)	1734.26 (35.3)	544.61 (10.7)	4906.63
1982-	3488.71 (53.4)	2051.29 (31.4)	989.04 (11.2)	6537.04
1983	3350.27 (49.7)	2301.76 (34.2)	1087.73 (16.1)	6739.76

Figures in Parantheses show the percentages to row totals.

Source: Annual Reports - 1974-83 - Entyce, Coimbatore.

The variable cost includes material cost. Processing cost and other costs. Material cost is the value of raw materials, packing materials, stores and spares, dyes and chemicals consumed. The processing cost includes the expenses on repair and maintenance, wages and salaries, power and electricity charges. Other costs include the expenses on printing, stationery, audit fee, publicity and advertising, distribution of products etc.

Table 4.3 reveals that there is less variation in the percentage of material cost to total variable cost. The increase in absolute amount is mainly due to the rise in cotton prices. The processing cost is also increassing. Increase in general price level escalated the cost of living related employee compensation. Power shortage coupled with utilising captive generators at a higher cost is another reason for the rising processing cost. Increase in other costs is mainly due to the interest cost on borrowings from banks, NTC and other financial institutions. The Corporation cannot be balmed as the loas are used to finance larger volume of inventrey holding and massive modernisation. The percentage of other costs to total variable costs has nearly doubled over these years (9 per cent in 1974 to 16 per cent in 1983).

Being public sector undertaking the Corporation has to be prompt in paying duties and taxes to the Government and fees to auditors. The continuous rise in the taxes and duties levied by the Governments at the Central and State level, and the higher fees for Auditing are yet other reasons for the increasing trend of other costs of production.

4. Capacity Utilisation:

Comparative figures of Spinning and weaving utilisation for the years 1974-1983 in percentage are tabulated below:

TABLE 4.4

CAPACITY UTILISATION, SPINNING AND WEAVING

1974-83

Year	Spinning Utilisation		Weaving Utilisation	
	Installed capacity (Spindles	Working capacity (Percentage)	Installed capacity (looms)	Working capacity (Percentage)
1975	2,53,268	70	1039	54.5
1976	2,58,756	75.7	1166	60.1
1977	3,62,934	81.7	1582	79.5
1978	3,68,496	82.8	1552	81.1
1979	3,83,380	88.3	1540	84.9
1980	3,84,164	59.4	1576	55.4
1981	3,92,100	73.6	1584	67.2
1982	4,08,120	82.7	1662	78
1983	4,19,460	71.8	1762	68.5

Annual Reports - 1974-83, Entyce, Coimbatore.

Utilisation if installed capacity is greater in spinning (mills) as compared to weaving (mills). Spinning utilisation ranges between 60 per cent to 89 per cent. There is a severe drop in the utilisation due to crippling power cut to the extent of 60 per cent during the years 1979-80 and 1982-83, in spite of installation of captive generators. As a result of the expansion programme, the commissioned spondles have gone up from 259 lakhs to 419 lakhs. There is no remarkable increase in the weaving utilisation over these years. The addition of spindles in all the years indicates the concentration of mills on yarn production. The spinning and weaving utilisation is illustrated in Fig.1.

5. Financial Sources:

The Corporation is managing sick textile units. Hence it has to depend on NTC, Government of India, Banks and other financial institutions for the necessary finance. Special mention must be made to the Holding Company NTC, which provides funds for modernising the mills, labour rationalisation and recouping cash losses as and when they arise.

The details of loans by sourcewise, are given in Table 4.5.

FIG. I

CAPACITY UTILISATION - SPINNING AND WEAVING - 1974-83.

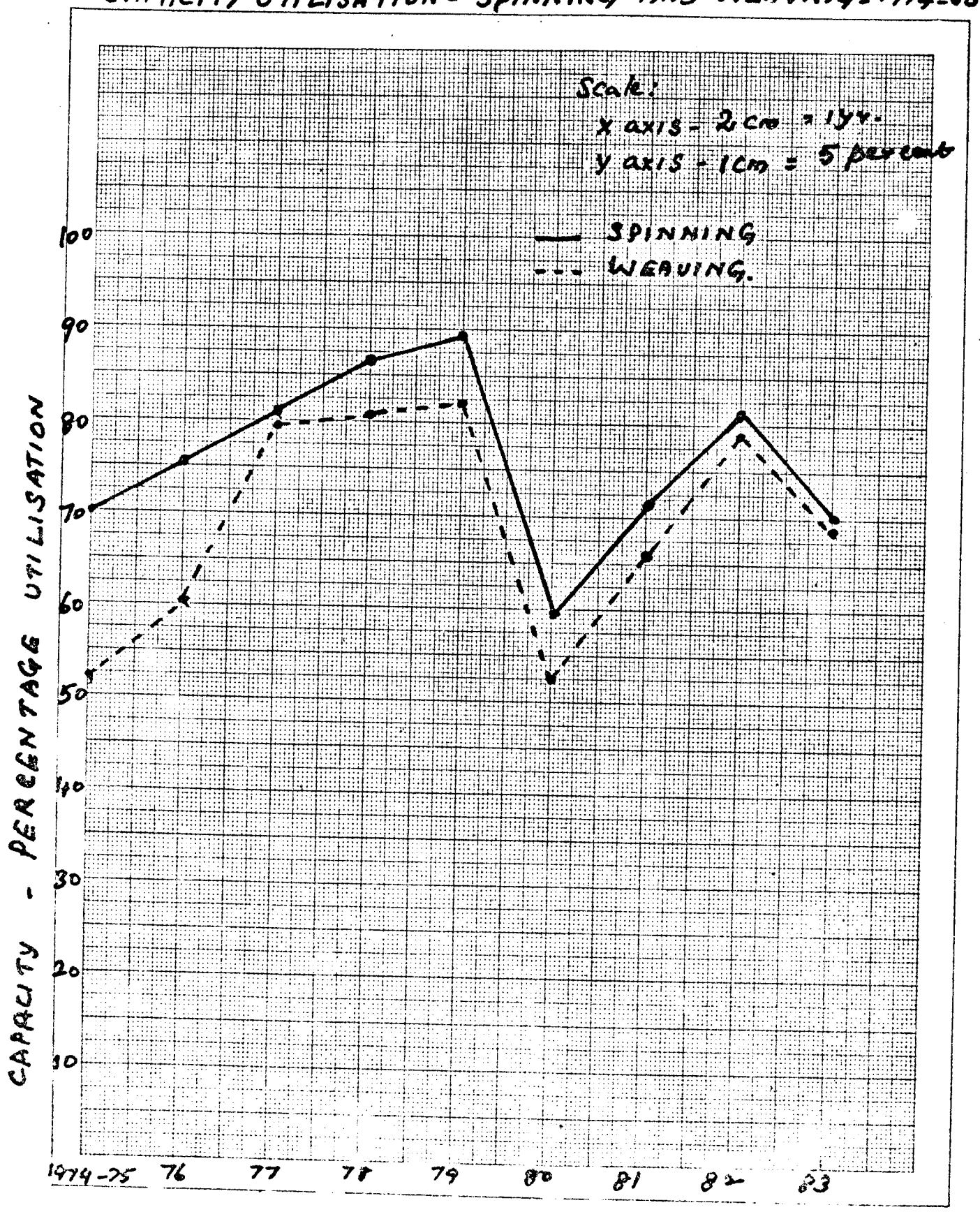


TABLE 4.5

SOURCE WISE DETAILS OF LOANS 1974-83

Year	Secured Loans			Unsecured Loans			Total secured & unsecured (Rs.Lakhs
	Other Institutions	N.T.C.	Total secured Loans	Other Institutions	N.T.C.	Total unsecured Loans	
1975	208.66	10.56	219.22 (30.7)	243.18	252.99	496.17 (69.3)	715.39
1976	212.76	10.98	223.74 (14.8)	266.65	1014.96	1281.61 (85.2)	1505.35
1977	438.67	16.80	455.47 (23.6)	339.56	1135.92	1474.99 (76.4)	1930.46
1978	374.14	16.19	390.35 (16.3)	431.07	1572.53	2003.60 (83.7)	2393.95
1979	323.85	15.93	339.78 (14.7)	283.10	1678.21	1961.31 (85.3)	2301.09
1980	143.59	15.90	159.49 (7.9)	67.12	1798.53	1865.65 (92.10)	2025.14
1981	680.29	..	680.24 (27.6)	232.55	1553.36	1785.91 (72.4)	2466.15
1982	1255.61	..	1255.61 (35.9)	435.99	1802.64	2238.63 (64.10)	3494.24
1983	1638.16	..	1638.16 (43.88)	125.54	1969.64	2095.18 (56.12)	3732.34

Figures in Parantheses show the percentages to row total.
Annual Reports 1974-83 - Entyce, Coimbatore

It is clear from the Table that nearly 40 per cent of the loans are provided by the NTC in the form of unsecured loans. The amount of secured loans is negligible indicating the interest of the corporation in assisting the sick textile units. The total financial assistance accounts for about 50 per cent of the value of production, and nearly 60 per cent of the working capital is financed by the Banks, NTC and other financial institutions.

The details of interest payment towards loans are given in Table 4.6.

TABLE 4.6

DETAILS OF INTEREST PAYMENTS TO NTC AND OTHER INSTITUTIONS 1974-83

Year	N.T.C.	Other Institutions	Total
1976	45,05,710 (41.4)	63,73,440 (58.6)	1,08,79,150
1977	96,30,989 (41,43)	1,36,42,605(58.57)	2,32,43,594
1978	98,59,028 (39.4)	1,51,85,576(60.6)	2,50,44,604
1979	1,29,81,027 (59.5)	88,96,222 (40.5)	2,18,27,249
1980	1,40,48,679 (45.1)	44,96,983 (54.9)	1,85,45,662
1981	1,21,70,883 (71.3)	48,88,546 (58.7)	1,70,59,429
1982	1,62,78,005 (49.3)	1,67,27,747(50.7)	3,30,05,752
1983	...	2,30,15,600(100)	2,30,15,600

Figures in Parantheses show the percentages to row totals.

Annual Reports 1974-83, Entyce, Coimbatore.

It is revealed from the Table that, during 1974-78, the percentage of interest to total interest payment is low (40 per cent). Since 1979, the amount of loans from the NTC started increasing and interest payment also increased. In 1983, the NTC had waived the interest and the improved performance of the mills in 1983 is mainly due to this waiving of interest payment.

6. Production and Sales:

The details of production of yarn and cloth in terms of value are given in Table 4.7

TABLE 4.7

PRODUCTION OF CLOTH AND YARN (VALUE) 1974-83

Rs. in lakhs

Year	Cloth	Yarn	Total
1975	311.15 (16.2)	1605.86 (83.8)	1917.01
1976	395.33 (.25)	1180.96 (75)	1576.29
1977	633.67 (16.9)	2714.94 (81.1)	3248.61
1978	831.06 (20.4)	3235.1 (79.6)	4066.16
1979	1117.29 (22.7)	3812.12 (79.3)	4929.41
1980	903.07 (21.9)	3220.33 (78.1)	4123.40
1981	1175.19 (22.3)	4100.57 (79.7)	5275.76
1982	1648.08 (26)	4688.33 (74)	6336.41
1983	2223.80 (33)	4458.96 (67)	6682.76

Figures in Parantheses show the percentage to row total.

Annual Report, 1974-83, Entyce, Coimbatore.

It is evident from Table 4.7 that the percentage of value of production of yarn is higher when compared to cloth in all the years. During 1981-83 the value of prdduction of cloth has reached, an all time high (26 per cent and 33 per cent). The Corporation has diversified the production by going in for synthetic Fabrics. This coupled with the high valued item of cloth has increased the value of production of cloth tremendously.

The details of value of sales of cloth and yarn are given below.

TABLE 4.8

SALES OF CLOTH AND YARN VALUE 1974-83

Rs.in lakhs

Year	Cloth	Yearn	Waste	Total sales
1975	269.02 (15.68)	1426.19 (83.15)	20.03 (1.17)	1715.24
1976	235.91 (14.99)	1319.88 (83.83)	18.60 (1.18)	1574.39
1977	624.06 (18.42)	2727.06 (80.48)	37.29 (1.1)	3388.36
1978	819.14 (21.57)	2940.55 (77.43)	38.11 (1.0)	3797.80
1979	1173.43 (23.27)	3826.76 (75.90)	41.69 (.83)	5041.90
1980	957.92 (22.52)	3269.89 (76.87)	25.97 (.61)	4253.78
1981	1057.65 (21.43)	3831.28 (77.66)	44.76 (.91)	4933.70
1982	1645.31 (27.15)	4333.00 (71.57)	75.59 (1.25)	6053.90
1983	2312.97 (35.37)	4150.82 (63.47)	76.32 (1.16)	6540.12

Figure in Parantheses show the percentage to row total.

Annual Report, 1974-83, Entyce, Coimbatore.

In sales also the percentage of value of yarn to total sales value is high. The cloth market is sluggish for most of the years as the Entyce textile cloth is facing severe competition with other leading mills like Vimal group, DCM etc. The market for yarn has been steady as the quality produced has come to be accepted by the market. Due to sustained efforts made in marketing cloth through grand sales, the percentage of sales of cloth has increased during 1981-83. In the period the corporation produced 14 lakhs metres of controlled cloth to cater to the requirement of vulnerable sections of society.

7. Employment:

Textile industry is both labour and capital intensive. The Corporation has 14 mills under its control. On an average each mill employes nearly 1,000 persons in different categories of workers, staff and officers. The details of number of employees and salary and wages are given in Table 4.9.

TABLE 4.9

DETAILS OF NUMBER OF EMPLOYEES SALARIES, WAGES AND OTHER BENEFITS
1974-83

Rs.in lakhs

Year	No.of workers	Wages, salaries, bonuses	Other benefits	Total
1975	12273	410.91 (89.9)	46.27 (10.1)	457.18
1976	11953	424.90 (88.7)	54.30 (11.3)	479.19
1977	13155	616.60 (88.)	83.97 (12)	700.57
1978	13247	672.33 (88.1)	90.93 (11.9)	763.26
1979	13230	763.09 (88.1)	103.47 (11.9)	866.56
1980	13214	758.73 (87.9)	104.32 (12.1)	863.07
1981	12872	1007.26 (87.4)	145.80 (12.6)	1153.06
1982	13805	1143.50 (87.3)	166.08)(12.7)	1309.59
1983	13839	1145.02 (86.5)	179.16 (13.5)	1324.18

Figures in Parantheses show the percentages to row totals.

Annual Reports.- 1974-83, Entyce, Coimbatore.

The increase in the number of employees is not remarkable. It has grown at a compound rate of 1.4 per cent (Discussion in the estimation of growth rate). The variation in the percentage of wages and salaries to total cost of employees is less. It ranges between 87 per cent to 89 per cent. The total cost of employees accounts for about 20 per cent of the value of production. In terms of absolute amount, the increase in salaries and wages is tremendous. The increase in general price level escalated the cost of living and the Corporation had to revise the allowances from time to time.

8. Income and Profit analysis:

The profit and loss accounts of the Balance Sheets show that the Corporation could reap profit only during 1978 to 1981 and in 1983. The income details of the mills are given in Table 4.10.

TABLE 4.10

INCOME DETAILS OF MILLS 1974-83

Rs.in lakhs

Year	Income from sales	Other incomes	Total
1975	1715.24 (99.9)	2.50 (.1)	1717.74
1976	1582.09 (99.5)	7.96 (.5)	1590.05
1977	3388.45 (97.7)	80.46 (2.3)	3468.91
1978	3797.80 (98.1)	75.33 (1.9)	3873.13
1979	5041.90 (98.8)	59.34 (1.2)	5101.24
1980	4253.78 (98.0)	84.97 (2.0)	4338.75
1981	4933.70 (99)	52.07 (1)	4985.77
1982	6053.90 (98.5)	89.82 (1.5)	6143.72
1983	6510.12 (98.7)	87.88 (1.3)	6598.00

Figures in Parantheses show the percentages to row totals.

Annual Reports 1974-83, Entyce, Coimbatore.

It is revealed from the Table that more than 95 per cent of the income is earned through sales of yarn and cloth. The other income which includes export incentive, income from investments on other activities, processing charges for the facilities rendered to other mills etc. accounts for about 2 per cent only. In general, there is four-fold increase in the gross income of the mills over these years. This increase is mainly due to the high valued item of cloth and the existence of bullish trend in yarn market except for a short lived recession during 1970-80. Thanks to the untiring efforts of the Holding Company, this Corporation was able to bag an order with the Defence Department, Air India and other public undertakings.

The percentage of earnings from foreign exchange through export to gross income is very meagre. It ranges between .2 to 2.5 per cent. The Corporation is not able to compete with the other leading textile industries like Reliance and DCM in the export front. The earnings from foreign exchange are given in Table 4.11

TABLE 4.11

EARNINGS FROM FOREIGN EXCHANGE
1974-83

Rs.in lakhs

Year	Earnings in foreign exchange F.O.B.value of exports in Indian currency	Gross income
1975	11.98 (.62)	1717.74
1976	24.45 (1.52)	1590.05
1977	280.01 (8.16)	3468.91
1978	94.81 (2.29)	3873.13
1979	140.91 (2.82)	5101.24
1980	67.02 (1.59)	4338.75
1981	10.50 (.2)	4985.77
1982	56.72 (.88)	61.43.72
1983	75.02 (1.11)	6598.00

Figures in Parantheses show the percentages to row totals.

Annual Report, 1974-83, Entyce, Coimbatore.

The analysis of the profitability of the mills reveals very interesting facts. The Balance Sheet Profit and Loss Account of the mills shows profit only during the period 1979-81. This period can be associated with the prevailing favourable market conditions for yarn. The net profit made during this period has reduced the accumulated loss of the Corporation from Rs.1263.8 lakhs in 1978 to Rs.198 lakhs in 1981. In 1983 also the Corporation earned a profit of Rs.30.38 lakhs. The improved performance reported is mainly due to the granting of financial relief by Government of India by waiving off the interest outstanding. If the interest amount paid in all these years would have been added on to the profit/loss, the performance of the Corporation would have been better. The analysis of profit reveals the following facts:

1. The low profit is due to the high interest payment.
2. Capacity utilisation has no relation with the profitability. The capacity utilisation was very low (59.4 per cent) during 1980-81 with a net profit in the same period.
3. There is a tremendous decrease in the accumulated loss over three years as a result of the profit earned during 1978-81.

The details of profit/loss with accumulated loss are furnished in Table 4.12

TABLE 4.12

DETAILS OF PROFIT/LOSS OF THE MILLS* 1974-83

Rs. in lakhs

Year	Net profit	Net loss	Cumulative loss
1975	..	151.38	151.38
1976	..	507.07	658.45
1977	..	453.40	1111.85
1978	..	159.23	1271.08
1979	403.63	..	867.45
1980	586.85	..	280.60
1981	155.58	..	125.02
1982	..	104.07	229.09
1983	30.38	..	198.71

*As shown in the Blance Sheets of the Mills.

Annual Reports, 1979-83, Entyce, Coimbatore.

9. Efficiency Indices:

In spite of the impressive growth in the value of production, sales, fixed assets, current assets, the Corporation has incurred loss. To study the performance of the mills and the extent of utilisation of resources, some indices can be used. These indices will help to assess the economic viability and operational feasibility of the mills. Some efficiency indices of the mills are given in Table 4.13

TABLE 4.13

INDICES OF EFFICIENCY OF THE MILLS 1974-83

Year	Capital coefficient in Rs.	Labour coefficient in Rs.	Spindle productivity in grms.	Gross value of Return	Return on operating cost
1975	5.85	16,000	58.	.73	29.34
1976	4.06	13,000	62.2	.47	2.60
1977	5.32	26,000	63.6	.56	3.50
1978	5.60	31,000	68.3	.56	3.63
1979	5.63	38,000	71.5	.60	4.11
1980	4.	32,000	73.2	.58	3.65
1981	3.76	41,000	73.5	.58	2.87
1982	2.79	47,000	74.5	.57	2.99
1983	2.37	49,000	75.5	.54	2.86

Computed from the Balance sheets details of Mills Annual Reports - Encyce, Coimbatore - 1974-83.

It is clear from the Table, that there is a remarkable increase in the percentage of reserves to liabilities indicating the good liquid position of the mills. The decrease in the percentage of liabilities to current assets implies that there is no possibility of insolvency of mills.

The spindle productivity is continuously increasing. The labour productivity also shows an increasing trend. The gross rate of return has positive values. These trends indicate the economic viability of the mills. The Capital productivity is decreasing, as the cost of machines, expenses on modernisation are high.

Indices of Solvancy and liquidity are given in Table 4.14

TABLE 4.14

INDICES OF SOLVENCY AND LIQUIDITY

Year	Current assets	Current liabilities	Capital Reserves and surpluses	Current liabilities as percentage of current assets	Capital Reserves as percentage of current liabilities
1975	1217.07	785.27	198.66	64.5	25.2
1976	1555.91	605.76	198.10	38.9	32.6
1977	2112.96	866.01	325.28	40.99	37.5
1978	2324.00	641.29	398.03	27.6	62
1979	2546.01	607.08	473.56	23.84	77.9
1980	2595.57	541.26	501.23	20.85	92.00
1981	2990.34	586.25	599.75	19.60	102.00
1982	3359.70	1007.12	574.46	29.98	57
1983	3386.02	778.58	725.96	22.99	93.2

Computed from the details of Balance Sheets of Mills.
Annual Reports, Entyce, Coimbatore - 1974-83.

The percentage of current liabilities to current asset is an index of the Solvency of the mills, and the percentage of reserves and surplus to current liabilities is an index of the liquidity.

10. Determination of Growth rates:

Compound growth rates of value of production, fixed capital and labourers are estimated and these growth rates are used to assess the functional relationship between the value of production and the factor inputs.

The empirical results of the growth rate functions fitted to the value of production, fixed capital and labourers employed by the mills (vide Appendix II) managed by Entyce are given in Table 4.15.

TABLE 4.15

COMPOUND GROWTH RATE FUNCTIONS

S.No.	Particulars	Initial coefficient	Exponent	Coefficient of determination
1.	Capital	2.4512673	.26 (.0065)** 40	.972
2.	Labour	12143	.014 (.00296)** 4.72	.8
3.	Production	16.1614	.108** .077 (22.8)	.926

**Lightly significant

Estimated from the Balance Sheet details of Mills in Annual Reports - Entyce, Coimbatore - 1974-83.

The growth equations used are:

Capital	K	=	Ko	e^{t}	
Labour	L	=	Lo	e^{t}	t = time
Production	Y	=	Yo	e^{t}	

The growth equations obtained are:

K	=	2.4512673	$e^{.264\ t}$	R^2	=	.972
L	=	12143	$e^{.0144t}$	R^2	=	.8
Y	=	16.1614	$e^{.168t}$	R^2	=	.926

The growth equationsfitted are approximately good as the coefficient of determination R^2 is high closer to unity (.926, .8 and .972).

The compound growth rates for capital and production are 26.4 per cent and 16.8 per cent and labour has grown at a rate of 1.4 per cent only. The fixed capi al has grown at a faster rate than the value of production. With the modernisation and expansion programmes by installing sophisticated spindles and looms, the growth rate is high in capital. The textile industry is facing problems of market recession, less attractive prices and high raw material prices. But for the modernisation effected during the period under study, the growth rate in the production would have been lower still.

The growth rate in labour is comparatively low at 1.4 per cent. Since the mills are highly machinised and massive modernisation programmes are undertaken continuously, employing more labourers becomes secondary to the units.

The growth trends in the estimated value of production and fixed capital are graphically illustrated (Fig. II and III).

The value of production can not be projected by the devived growth equation. Textile industry being a key industry facing perfect competition in the market, will have to fix the price in accordance with the prevailing price level.

FIG - II

ESTIMATED VALUE OF PRODUCTION - GROWTH TREND.
1974 - 83.

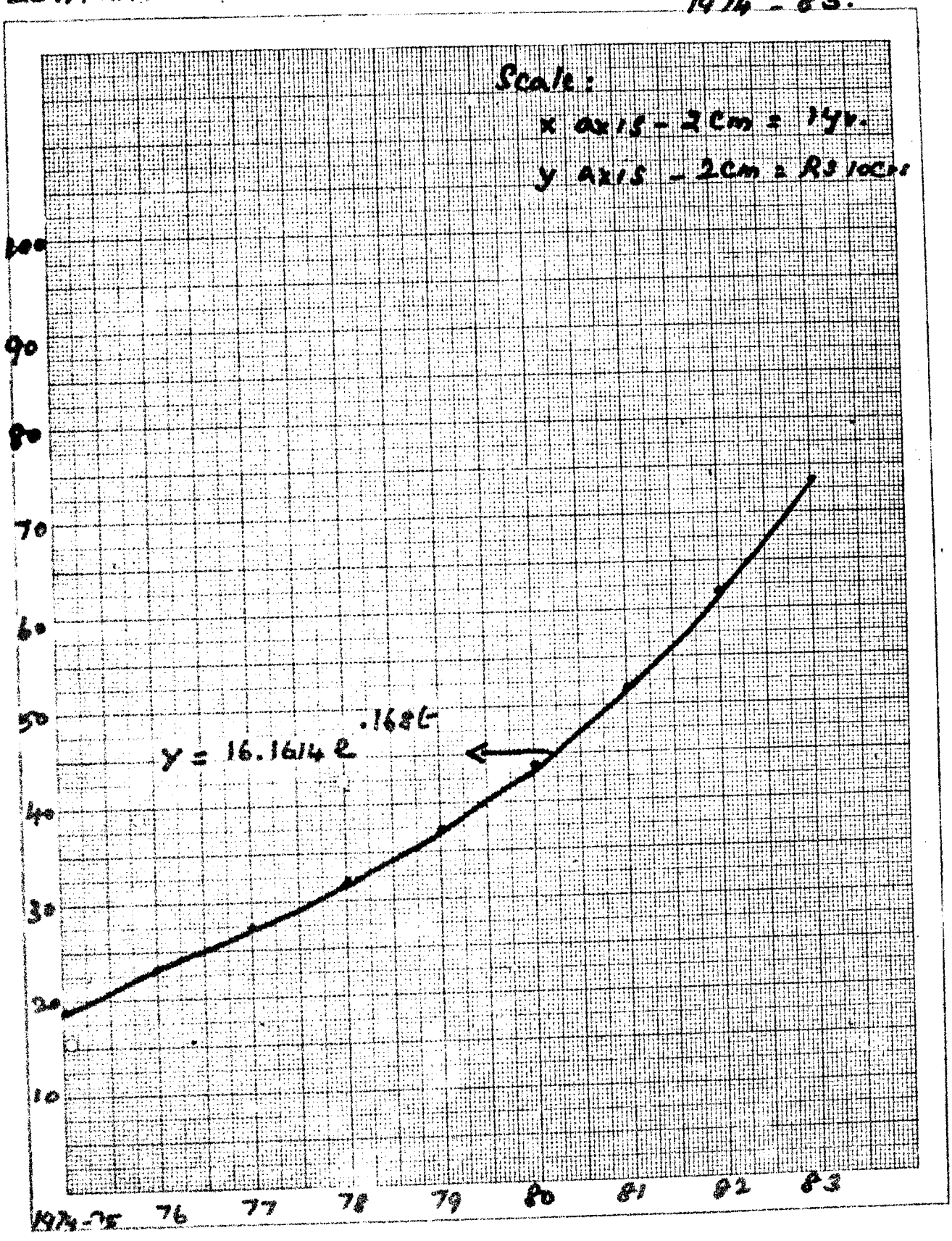
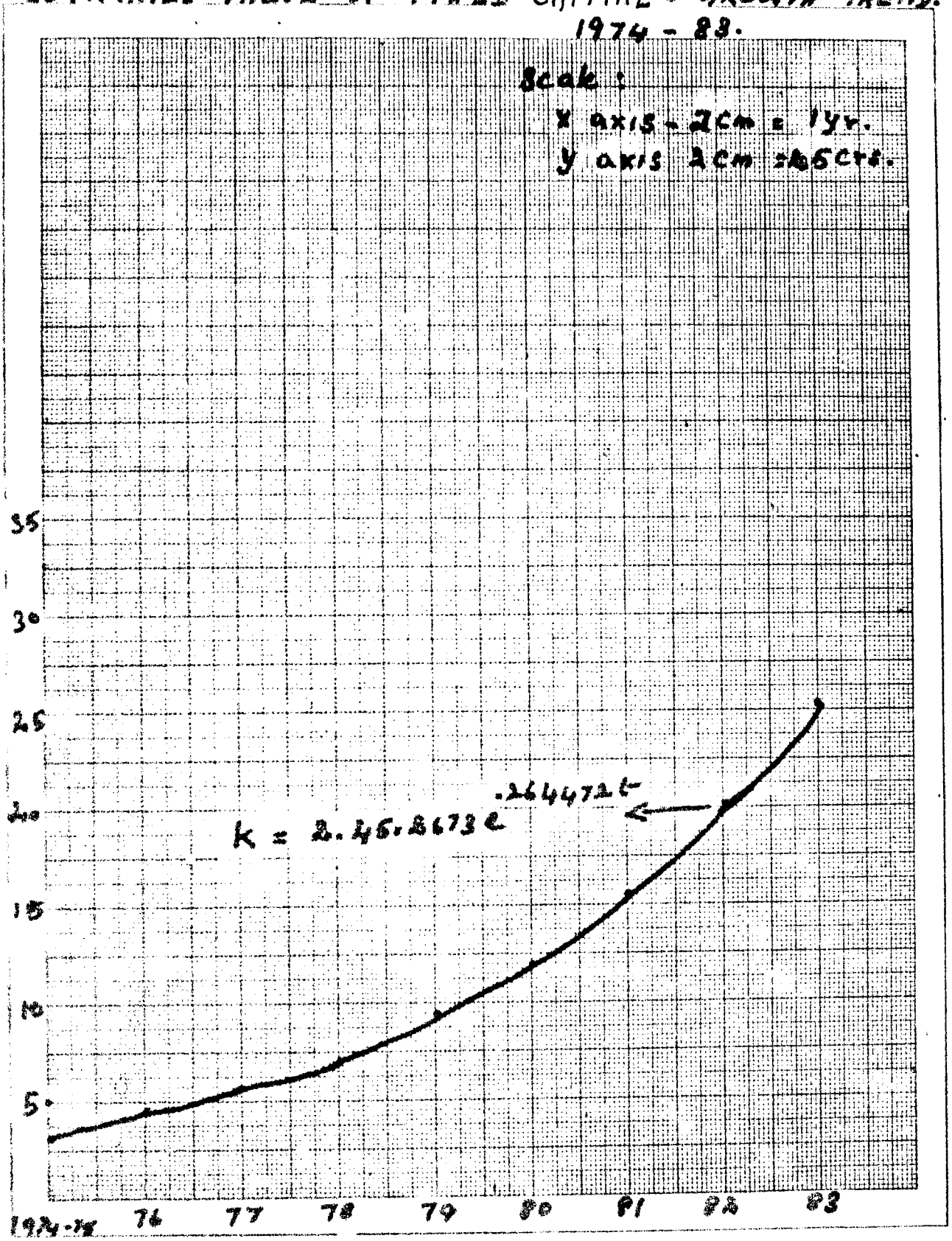


FIG III

ESTIMATED VALUE OF FIXED CAPITAL - GROWTH TREND. 1974 - 83.



VALUE OF FIXED CAPITAL.

YEARS

11. Production function:

1. Production function: Restricted:

The functional relationship between production, capital and labour is ascertained by using a restricted Cobb-Douglas production function model of the form:

$Y = A K^{\alpha} L^{1-\alpha}$ where

Y = value of production

A = Initial coefficient

K = Capital

L = Labour

α = Constant

The sum of the exponents of K and L is assumed to equal unity indicating the direct relationship between K, L and Y. The exponents of K and L stand for the elasticities with respect to value of production. The values of constants α and $1 - \alpha$ are obtained from the derived growth equations. This method is used in preference to the multiple regression analysis as it avoids the problem of multi-collinearity. When log K and log L are functions of time and Y is a function of K and L, there is a problem of multi-collinearity and multiple regression analysis can not give an acceptable estimate. (Kornai, 1975).

The estimated production function is given below:

$$Y = .2554245\ K^{.614577}L^{.3854723}$$

$$R^2 = .915$$

The estimated function implies the existence of highly significant relationship between capital, labour and value of production as it is estimated from the significant growth rates of the variables.

The elasticity of capital with respect to value of production is at .6145 and labour is at .3855 satisfying the restrictive condition imposed on the production function.

Textile industry is highly capital intensive. Thanks to the modernisation programme as the contribution of capital to total output is high. One unit increase in capital can be expected to increase the output by .6 unit. The exponent of labour explains the elasticity of production with respect to increase in labour. A unit increase in labour is expected to increase output by .4 unit. The constant A has no operational or economic significance. The estimated function is approximately good as it has a veryhigh coefficient of multiple determination, R^2 at .915.

ii. Production function - unrestricted:

The estimated production function assumed direct relation between output and factor inputs. In practice

however this proportional relation of output to factor inputs will not be constant always. So, to test the returns to scale, an unrestricted production function of the form:

$Y = A K^{\alpha} L^{\beta}$ is fitted. The obtained relation is given as:

$$Y = 2.8938166\ K^{.63003^{*}}_{L}{}^{.12574^{*}}$$

$R^2 = .9125 \qquad t = 5.71 \quad t=2.9$

*Significant at 5 per cent level.

The sum of the exponents of K and L is .75577 indicating the operation of diminishing returns to scale. A simultaneous increase of one unit of capital and labour is expected to increase the output by less than proportionately. In both the functions estimated, the contribution of labour to output is less than the contribution of capital to output.

12. Assessment of the Role of NTC in Textile Industry:

The total working capital of the mills is financed by the loans from NTC and other financial institutions. Hence, to assess the role of NTC in textile industry, the credit is related with the working capital. Assuming a linear relation between NTC credit and working capital of the mills, a simple regression equation of the form:

$W = a + bc + \xi i$ is fitted

W = Working capital

C = NTC Credit

ξi = Regression error

a,b = Constants

By using this form, the equation obtained is given by:

$W = .4877885 + .9732783C$

SE = .11363

t = 8.72**

R^2 = .902

**highly significant

The high R^2, coefficient of determination at .902 explains that 90 per cent of variations in working capital of the mills is expected to be explained by the NTC credit. So, it can be concluded that the NTC has signfficantly contributed to the development of Textile Sector in Tamil Nadu and Pondicherry.

The conclusions of the analysis are summarised in the subsequent chapter, "Summary and Conclusion."

SUMMARY AND CONCLUSION

V. SUMMARY AND CONCLUSION

The current study on the performance of Textile Mills under ENTYCE (TN & P) was an attempt to find out the performance of the textile mills in general and causes for the poor performance in particular, in terms of capacity utilisation, capital investment and productivity during 1974-1983. The data collected from the official and non-official sources was analysed by applying time series exponential trend functions ratios and percentages and regression lines. The major findings and conclusions that emerged from the analysis were:

Capital Structure:

1. The ratio of working capital and fixed capital was transformed from 25:75 in 1974 to 55:45 in 1982-1983.
2. The fixed cost increased from 13.6 per cent in 1974 to 29.5 per cent in 1983. The variable cost has decreased from 86.4 per cent in 1974-75 to 70 per cent in 1982-83.
3. The material cost has decreased from 63.5 per cent in 1974-75 to 49.7 per cent in 1982-83 and the processing cost showed an increasing trend. (26.9 per cent in 1974-75 to 34.2 per cent in 1982-83).

Capacity Utilisation:

4. The spinning utilisation was higher than the weaving utilisation. The percentage of spinning utilisation has varied between 50 to 80 per cent during 1974-83.

5. The weaving utilisation was more or less constant (60 per cent in 1974-75 and 68 per cent in 1982-83).

Financial Sources:

6. The ratio of NTC loans and loans provided by other institutions has been 40:60.

7. Interest payment to NTC was 40 per cent on an average during 1974-83. In 1983 the NTC has waived Rs.120 lakhs interest outstanding.

Production and Sales:

8. The ratio of production of yarn and cloth was 16:84 in 1974-75 which was getting narrowed and during 1982-83 it became 67:33.

9. The ratio of sales of yarn and cloth was 16:83 in 1974-75 and transferred into 35:63 in 1982-83. There was nearly one to two per cent waste in both cloth and yarn.

Employment:

10. The number of employees in the mills has grown at a compound rate of 1.4 per cent.

11. The ratio of wages and salaries and other benefits was 87:13 in 1974-75 and changed into 87:11 in 1982.83.

Income and Profit:

12. Income from sales of cloth and yarn has constituted the major proportion of the gross income of the Corporation. It was 99 per cent in all these years and income from other sources has constituted one per cent only.

13. The earnings from foreign exchange through export of cloth and yarn was very meagre and it has reached 2.5 per cent only during 1976-77.

14. The Corporation has reaped net profit during 1978-81 and in 1983. In all the other years the corporation had to incur loss. The cumulated loss has decreased from Rs.1111.85 lakhs in 1976-77 to Rs.198 lakhs in 1982-83.

Efficiency indices:

15. The capital coefficient has decreased from 5.85 in 1974 to 2.37 in 1983.

16. The labour coefficient has increased from Rs.16,000 to Rs.49,000 during 1974-83.

17. The spindle productivity has increased from 58 gms. in 1974-75 to 76 gms in 1982-83.

18. There was a decline in the gross rate of return from .73 in 1974-75 to .54 in 1982-83.

19. The proportion of current liabilities to current assets has decreased from 64.5 in 1974-75 to 22.9 in 1982-83.

20. There was in increase in the proportion of capital reserves and surplus to total liabilities (25.2 per cent in 1974-75 and 93.2 per cent in 1982-83).

Growth Rates:

21. The compound growth rate of value of production was 16.8 per cent.

22. The fixed capital has increased at a compound growth rate of 26 per cent per annum.

23. The number of employees has grown at a rate of 1.4 per cent.

Production functions:

24. The impact of capital increase was high on the value of production and the impact of labour on the value of production was low. (.6 unit increase in value of production per unit of increase in capital and .4 unit increase in the value of production per unit of increase in labour).

25. The Corporation was subject to diminishing returns to scale.

Role of NTC in Textile Sector:

26. N.T.C. has significantly contributed to the development of Textile Sector in Tamil Nadu and Pondicherry.

In the light of the above findings of the study the following are the measures suggested:

1. The Government should take steps to make available adequate power generators to solve the problem of power shortage.

2. Steps should also be undertaken for publicity and the Corporation should give attractive advertisements to the products.

3. New blended fabrics should be produced so as to compete with other textile mill groups.

Areas for further Research:

1. Studies on the performance of mills under the other subsidiary corporations would be helpful in locating the problems faced by the textile mills.
2. A comparative study of the performance of private sector mills and the corporation will be another area of research.
3. The conditions responsible for the sluggishness of cloth market can also be studied.

Conclusions:

The findings of the study indicate that the textile sector is still in a crisis. In order to vitalise the textile industry it is necessary that adequate quantity of cotton and other fibres should be made available at stable prices by the Government. It is necessary that such prices should not be much lower than the reasonable market prices.

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APPENDICES

APPENDIX I

MILLS UNDER THE MANAGEMENT OF NATIONAL TEXTILE CORPORATION (TAMIL NADU & PONDICHERRY) LIMITED*

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Spinning Mills:

1.	Balaramavarma Textile Mills,	Shencottah (Tirunelveli District)
2.	Combidia Mills	Coimbatore
3.	Kaleeswarar Mills 'B' Unit	Kalaiyarkoil (Ramanathapuram District)
4.	Krishnaveni Textile Mills	Coimbatore
5.	Om Parasakthi Mills	Coimbatore
6.	Pankaja Mills	Coimbatore
7.	Poineer Spinners	Kamudakudi (Ramanathapuram District)
8.	Sri Ranga Vilas Ginning Spinning and Weaving Mills	Coimbatore

Composite Mills:

1.	Coimbatore Murugan Mills	Coimbatore
2.	Coimbatore Spinning and Weaving Mills	Coimbatore
3.	Kaleeswarar Mills 'A' Unit	Coimbatore
4.	Somasundaram Mills	Coimbatore
5.	Sri Bharathi Mills	Pondicherry

*Annual Report, Entyce, 1981.

APPENDIX II

VALUE OF PRODUCTION, CAPITAL AND LABOUR EMPLOYED OF THE MILLS MANAGED BY ENTYCE (TN & P) 1974-83

Year	Fixed capital Rs.in lakhs	Number of Employees	Value of production Rs.in lakhs
1974-75	327.59	12273	1917.01
1975-76	388.15	11953	1576.29
1976-77	629.01	13155	3348.61
1977-78	726.24	13247	4066.16
1978-79	874.16	13230	4929.41
1979-80	1031.84	13214	4123.40
1980-81	1402.99	12872	5275.76
1981-82	2267.70	13805	6336.41
1982-83	2823.47	13839	6682.26

Source: Annural Reports, Entyce (TN & P) Coimbatore 1974-1983.

APPENDIX III

1. Determination of Growth rates:

The growth equation used was

$Z = Z_o \, e^{\lambda t}$ where

Z = Relevant variables

(Value of production, fixed capital and labour employed)

λ = growth rate

t = Time

The normal equations used to estimate the parameters were:

$$\Sigma \log Y = N \log Y_o + \Sigma (\lambda \log e)\, t$$

$$\Sigma t (\log y) = \log y_o \, \Sigma t + \Sigma (\lambda \log e)\, t^2$$

2. Estimation of R^2- Coefficient of determination.

$$R^2 = 1 - \frac{(Sy)^2}{\sigma Y} \quad \text{where}$$

Sy = Standard error of the estimate

$$= \sqrt{\frac{(Y - Y_E)^2}{N}}$$

σ y = Standard deviation

$$\sqrt{\frac{\Sigma Y^2}{N} - \frac{(\Sigma Y)^2}{N}}$$

APPENDIX IV

1. Estimation of Production function:

a. Restricted production function:

The restricted Cobb Doublas production function was used in the study.

$$Y = A K^{\alpha} L^{1-\alpha}$$

The value of α in terms of the growth rates was obtained by using the formula given below:

$$\alpha = \frac{\lambda - \beta}{\gamma - \beta} \quad \text{where}$$

α = The exponent of Capital

λ = Growth rate in value of production

γ = Growth rate in fixed capital

β = Growth rate in labour employed

The value of constant 'A' was obtained as given below:

$$\log \frac{Y}{L} = \log A + \alpha \log \left(\frac{K}{L}\right)$$

$$\log y - \log L = \log A + \alpha (\text{Log } K - \log L)$$

b. Estimation of Production function - unrestricted:

The Cobb - Douglas production function of the form:

$Y = AK^{\alpha} L^{\beta}$ was used

The normal equations were:

$$\Sigma \log Y = N \log A + \alpha \Sigma \log K + \beta \Sigma \log L$$

$$\Sigma \log K \log Y = \log A \Sigma \log K + \alpha \Sigma (\log K)^2 + \beta \Sigma \log K \log L$$

$$\Sigma \log L \log Y = \log A \Sigma \log L + \alpha \Sigma K \log L + \beta \Sigma (\log L)^2$$

2. Simple Linear line:

$$W = a + bc. + \Sigma i$$

Normal equations:

$$\Sigma W = Na + b \Sigma c$$

$$\Sigma WC = a \Sigma c + b \Sigma c^2$$

3. Standard error of the coefficient:

$$S.E_{b.y} = \frac{\sigma y}{\sigma x} \sqrt{\frac{1 - r^2}{N}}.$$

$$t = \frac{\hat{b}}{S.E_{b.y}}$$