A STUDY OF THE TEXTILE INDUSTRY IN KERALA WITH COMPARATIVE REFERENCE TO TAMIL NADU

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CERTIFICATE

THIS IS TO CERTIFY THAT THE DISSERTATION ENTITLED "A STUDY OF THE TEXTILE INDUSTRY IN KERALA WITH COMPARATIVE REFERENCE TO TAMIL NADU" IS A RECORD OF RESEARCH WORK DONE BY SHRI S. KEVIN, A PART-TIME STUDENT OF DOCTOR OF PHILOSOPHY IN THE SCHOOL OF MANAGEMENT STUDIES, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY DURING THE PERIOD OF HIS STUDY.

THE DISSERTATION IS THE OUTCOME OF HIS ORIGINAL WORK AND HAS NOT FORMED THE BASIS FOR THE AWARD OF ANY DEGREE, DIPLOMA, ASSOCIATESHIP, FELLOWSHIP OR OTHER SIMILAR TITLE.

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DECLARATION

THIS IS TO CERTIFY THAT THE DISSERTATION ENTITLED "A STUDY OF THE TEXTILE INDUSTRY IN KERALA WITH COMPARATIVE REFERENCE TO TAMIL NADU" IS A RECORD OF BONAFIDE RESEARCH WORK DONE BY ME AND THAT IT HAS NOT PREVIOUSLY FORMED THE BASIS FOR THE AWARD OF ANY DEGREE, DIPLOMA, ASSOCIATESHIP, FELLOWSHIP OR OTHER SIMILAR TITLE.

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C O N T E N T S

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CHAPTER - I

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

The cotton textile industry has a preeminent position in the industrial structure of every country as it caters to one of the basic necessities of human life, namely, clothing. The Indian cotton textile industry consists of three distinct sectors representing broadly three levels of technology and organisation, namely, mills, powerlooms and handlooms. The handloom sector is the oldest among them with a long tradition of excellence and unrivalled craftsmanship. The mill sector is over one hundred and thirty years old and is the dominant sector in terms of investment, output and technology. The last to appear on the scene was the powerloom sector which over the last three decades has come to occupy a prominent position. The mill sector is the organised sector, while the powerlooms and handlooms together constitute the decentralised sector.

This study is confined to the organised sector of the cotton textile industry. It was the cotton mill industry which pioneered the industrialisation of India during the nineteenth century. Even today it is one of the premier industries of the country contributing large quantities of industrial output, employment and foreign exchange to the national economy. The importance of the industry is well expressed in the words of Kasthuri Sreenivasan, the Founder-Director of South India Textile Research Association and the former Chairman of the National Textile Corporation:

> Inspite of the considerable industrialisation that has taken place in India during the last three decades, the textile industry still occupies a key position in the economy of the country. It gives direct employment to about 20% of all industrial labour and accounts for nearly 10% of the foreign exchange earnings. It also constitutes 20% of the total industrial production. The industry is also a supplier of yarn to the decentralised sector which provides employment to more than four million workers. It has an influence on agriculture because of its consumption of cotton, wool and silk and on industries because of its requirements of machinery, dyes and chemicals, and synthetic fibres.[1]

But, for the past several years, the cotton mill industry in the country has been operating on a very low profit profile. This has been confirmed by the Reserve Bank of India in its various studies made from time to time. Gross profits as percentage of net sales for the years 1965-66 to 1978-79 were between 8.8 and 11.4 percent for all industries. For the cotton textile industry the range was as low as 2.7 to 7.9 percent except for 1973-74 when the percentage was 11.1. For all industries, profits after tax as percentage of net worth for the same years ranged from 7.0 to 13.7 percent, while for the cotton textiles it was negative for 4 years and ranged from 0.9 to 6.4 percent for 6 years during the period. For four years, however, the percentage exceeded 10.[2]

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[1] Kasthuri Sreenivasan, "Preface," to India's Textile Industry (Coimbatore: The South India Textile Research Association, 1984), p.i.

[2] The Indian Cotton Mills' Federation, Handbook of Statistics on Cotton Textile Industry 16th ed. (Bombay, 1983), p. 82.

"Since the sixties, the organised sector of the Indian cotton textile industry has been passing through very visibly, successive periods of crisis . . . . As a consequence, the organised sector in this industry is said to be marked persistently by the phenomenon of 'sickness'."[3] As more and more textile mills closed down permanently, the National Textile Corporation and the State Textile Corporations began to take over the closed mills in the seventies. At the end of May 1982, there were 112 textile mills under the National Textile Corporation out of a total of 792 mills in the country.[4] "A vast majority of cotton mills find themselves in grave financial difficulties. Several of them are deep in debts, with very little capacity to raise fresh finance, and with continuous working in losses, they are caught in a vicious circle."[5]

1.1. The Problem and its Significance

The cotton mill industry has a significant place in the industrial economy of Kerala. As in the country as a whole, in Kerala

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[3] V. Shanbhag, "Turning Sick Mills Around," Commerce,148, No.3789 (January 7, 1984), 11.

[4] "Textiles in Parliament," Indian Cotton Mills' Federation Journal, XIX, Nos.5/6 (September - October 1982), 73.

[5] Arvind N. Lalbhai, "What Ails the Cotton Textile Industry?" Indian Cotton Mills' Federation Journal, XVIII, No.12 (April 1982), 33.

too, it was the cotton mill industry which pioneered the industrialisation of the State. Today it is one among the most important medium and large-scale industries in the State. There is a favourable environment in the State for the development and growth of the spinning sector of the mill industry which produces yarn, the raw material required by the handloom industry. The handloom industry is one of the largest cottage industries in Kerala, second only to coir, scattered throughout the State and providing employment to over 2 lakh persons. Out of the 27 textile mills now functioning in the State, 22 are spinning mills.

The Government is actively fostering the development of the labour-intensive handloom industry. To ensure the supply of yarn to the handloom industry, the Government is encouraging the setting up of new spinning mills in the State. The Malappuram Co-operative Spinning Mills Ltd was incorporated in 1975. The Quilon Co-operative Spinning Mills Ltd which was incorporated in 1976 started commercial production only in early 1986. The construction of the factory building for the Alleppey Co-operative Spinning Mill is currently in progress at Kayamkulam in Alleppey district.

While new mills are being commissioned, the older ones are turning sick. Already 10 mills have been transferred from the private sector to the public sector on account of sickness; five are with the National Textile Corporation, three with the State Textile Corporation and two with the State Government. The financial performance of the textile mills in Kerala is not quite satisfactory. Most of the mills are making losses while a few are operating on a meagre margin of profit. During 1980-81, only four private sector mills

in the State declared dividends on equity shares. The poor performance of the cotton mill industry in Kerala calls for a thorough analysis into its profitability and financial position so as to identify the factors responsible for such poor performance. As the cotton mill industry is one of the important industries in the State and as the spinning sector of the industry is the supplier of raw materials to the handloom industry, the successful working of the mill industry is bound to strengthen the economy of the State and promote the growth of the handloom industry.

1.2. Objectives

This is an analytical study whose objective is to make a financial analysis of the cotton mill industry in Kerala with comparative reference, wherever possible, to the mill industry in Tamil Nadu which is the most important centre of the cotton textile industry in South India.

More specifically, the various objectives of this study are:

1. To study the profitability of the industry as well as of the individual mills.
2. To analyse the cost structure, machine productivity, machine utilisation and labour productivity of the mills in order to locate the factors which are responsible for inter-mill variations in profits.
3. To analyse the investment in operating assets by the mills so as to bring out the influence of modernisation policy and the current assets policy on profitability.

4. To analyse the financial structure of the industry so as to understand the long-term solvency of the industry.
5. To study the working capital management of the industry through an analysis of the current assets and current liabilities of mills as well as through a funds flow analysis.
6. To make suitable recommendations for improving the financial position and profitability of the industry.

In this study, no specific hypotheses are proposed for testing. This study is designed as a descriptive research study which will describe, analyse and interpret the financial conditions that now exist in the cotton mill industry in Kerala. The study will attempt to discover relationships that exist between various factors affecting the industry. An open investigation, without any hypotheses, but guided by the objectives set forth above, was considered more appropriate for the study. The important function of the hypotheses, namely, to guide the direction of the study, would be well served by the clearly specified objectives of the study.

1.3. Methodology

1.3.1. The period of study

The financial results of a firm for a single year may not be truly representative of its general financial position, as the results of any one year may be affected by fortuitous factors. Therefore, instead of analysing the financial position of the cotton mills for one year, it was decided to have a five year analysis. The five

year period from 1980-81 to 1984-85 was selected as the period of study. 1984-85 was chosen as the last year of the study because it was the latest year for which the annual accounts were audited and published in the case of most of the mills at the time of data collection which was carried out during 1986-87.

1.3.2. Sampling

There are in all 27 cotton mills in Kerala. Thus the universe of the study consists of 27 units. As the universe is small it was decided to conduct a census study instead of a sample study because it is feared that a sample selected from such a small universe may not be of adequate size. Moreover, as the universe itself is small, no significant gain in time and money is expected from a sample study. Hence, no sampling is resorted to and all the textile mills in the State are covered under this study. The study is expected to provide a comprehensive picture of the cotton mill industry in Kerala.

1.3.3. Sources of data

Both primary and secondary data have been used in this study. The primary data consist of details regarding production and capacity utilisation in mills. The primary data were collected by mailing an unstructured questionnaire to the managements of all the textile mills in the State. A copy of the questionnaire is given in Appendix XII. The secondary data consist of cost and financial data available in the Annual Reports of the mill companies. A request was mailed to the mill managements asking for their Annual Reports for five

years, 1980-81 to 1984-85.

Ten mills sent their Annual Reports and the filled-in questionnaire by mail. Visits were made to the remaining 17 mills to collect the Annual Reports and questionnaire. Some of the mills refused to cooperate and did not make their Annual Reports available. In the case of 4 such mills the necessary Annual Report data were collected from the office of the Registrar of Joint Stock Companies. In the case of some mills, the Annual Reports were available only for the three years 1980-81 to 1982-83 as audited accounts for the other two years had not been finalised at the time of data collection.

Out of the 27 mills now functioning in the State, one mill started commercial production in 1986 only and hence it has been excluded from the analysis. The Annual Reports and questionnaire were not received from 3 mills. The necessary primary and secondary data were collected from the remaining 23 mills and they have been analysed and presented in this study.

For making comparative reference to the mill industry in Tamil Nadu, the figures published by the South India Textile Research Association (SITRA) in respect of surveys conducted among its member mills have been used throughout this study. As mills in Tamil Nadu constitute a very high proportion of the SITRA's total membership, the figures relating to their surveys do represent the position of the mill industry in Tamil Nadu.

1.3.4. Tools of Analysis

The following techniques have been employed for analysing the data of the mills.

1.3.4.1. Ratio Analysis:

It is a useful method of studying the relationship between two financial variables by expressing the relevant data in the form of a ratio. It is a method which is widely used in financial analysis. Ratio analysis has been used throughout this study.

1.3.4.2. Common-size statement method of analysis:

This is a method of analysis of financial statements such as the Balance Sheet and the Profit and Loss Account. In this method, each individual item in a statement is expressed as a percentage of the total of that statement. It is a suitable device for the study of proportions in a financial statement. Moreover, this method is eminently suited for making comparisons between financial statements of firms of different sizes. For, by converting the items in the statements to percentages, we are able to perceive more clearly the relative proportions of the financial elements in the statements compared than when the items are expressed in rupees. The common-size statement method of analysis is used in this study for the analysis and interfirm comparison of the cost structures of various mills.

1.3.4.3. Correlation Analysis - Simple and Multiple:

Correlation analysis is a statistical tool for discovering and measuring the relationship between two or more sets of data. Simple correlation analysis measures the relationship between two variables, one dependent and the other independent, whereas multiple correlation analysis is used to measure the relationship between one dependent variable and two or more independent variables. Multiple correlation analysis has been employed in this study to identify the factors responsible for profit variation and output variation among mills. Simple correlation analysis has been used throughout the study to measure the relationship between various inter-related variables.

1.3.4.4. Index Numbers:

Index numbers are one of the statistical devices most widely used in the field of business and economics. An index number is a statistical tool designed to measure changes in a variable between two or more time periods or places. It expresses, as a percentage, the net increase or decrease in a variable over a period of time or at different places. In this study, index numbers have been used in the analysis of the working capital management of cotton mills to study the growth in current assets and current liabilities over the period of study.

1.3.4.5. Funds Flow Analysis:

Funds flow analysis consists in the preparation of a statement

known as the Funds flow statement showing the flow of funds during on accounting period. The Funds flow statement shows the sources from which funds have been raised and the uses to which these funds have been put. The statement is prepared by comparing the Balance sheets at the beginning and the end of the relevant period. While the Balance sheet gives a static picture of the financial resources of a firm, the Funds flow statement portrays a dynamic picture of the sources and uses of funds. In other words, the Funds flow statement highlights the changes in the financial structure of a firm. The Funds flow analysis has been employed in this study in the analysis of working capital management to understand the sources of working capital and their uses.

1.3.4.6. Interfirm comparison:

Interfirm comparison consists in comparing the performance of a firm with that of other firms in the same industry during the same period of time. Interfirm comparison thus provides an independent external standard against which to assess the performance of a firm. In this study about the cotton mill industry in Kerala, interfirm comparison has been used for assessing the financial performance of individual cotton mills in relation to the industry as a whole.

1.4. Operational Definitions of Terms used in the study

The technical terms used in this study are defined here.

Gross Profit means profit before interest, depreciation and taxes. It is arrived at as follows: Sales plus increase in stock minus cost of raw materials consumed, salaries and wages, and all overhead expenses other than interest, depreciation and taxes. The operational definition of gross profit used in this study differs somewhat from the concept of gross profit to be found in standard text books on Accountancy. The definition given above has been chosen for this study because this is the definition used by SITRA in its analysis of balance sheets of mill companies[6] and it is with the figures available in SITRA publications that comparison is proposed to be made in this study. The selection of this definition is further justified by the fact that it is this definition which is being used for purposes of Ratio analysis in all-India financial institutions such as the Industrial Finance Corporation of India, the Industrial Development Bank of India, etc.[7] The Reserve Bank of India has also adopted a very similar definition in its study on the finances of selected large, non-financial, non-Government public limited companies.[8]

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[6] Indra Doraiswamy, Financial Performance in Boom and Recession (Coimbatore: The South India Textile Research Association, 1984), pp.3-7.

[7] Industrial Finance Corporation of India, Guidelines for Ratio Analysis (New Delhi, 1979), (Cyclostyled Private Circular) p.6.

[8] "Finances of Large Public Limited Companies, 1980-1981," Reserve Bank of India Bulletin (August 1982), p. 628.

Operating profit means profit after interest and depreciation but before tax and adjustment of other income. In other words, it is gross profit minus interest and depreciation.

Value of output is net sales (gross sales less excise duty) plus closing stock of finished goods minus opening stock of finished goods.

Stock of finished goods includes stock of yarn, cloth, waste and work-in-process.

Gross value added means value of output minus material cost.

Material cost means cost of raw materials purchased plus opening stock of raw materials minus closing stock of raw materials.

Labour cost comprises of salaries, wages, bonus, gratuity, contributions to provident fund and other funds, and staff and labour welfare expenses.

Other costs are the total of stores and spares consumed, power and fuel, repairs and maintenance, administrative and miscellaneous expenses, and selling expenses.

Net worth means the total of ordinary share capital, preference share capital, reserves (including Central or State Government subsidy), surplus in Profit and Loss Account, minus intangible assets (such as goodwill, preliminary expenses etc.) and deficit in Profit and Loss Account.

Long-term liabilities mean the total of debentures, term loans and deferred credit for purchase of machinery.

Current liabilities are the aggregate of: (i) Sundry creditors for purchase, (ii) Interest accrued, (iii) Provisions, (iv) Bank borrowings for working capital, (v) Deposits and short-term loans, and (vi) Other current liabilities (such as Bills Payable).

Capital employed means the aggregate of net worth, long-term liabilities and bank borrowings for working capital.

Gross fixed assets are the total of original costs of Land, Buildings, Plant and Machinery, Electrical installations, Furniture and Fixtures, Vehicles, Livestock and Utensils.

Net fixed assets are gross fixed assets minus depreciation to date.

Current assets are the aggregate of: (i) Stocks of raw materials, finished goods, stores and spares and other items such as loose tools, etc., (ii) Sundry debtors, (iii) Cash and Bank balances, (iv) Loans and Advances, and (v) Other current assets (such as interest accrued on investments and amounts due from the Commissioner of Payments in the case of National Textile Corporation units).

Investments mean investments by the mill companies in the share capital of their Employees' Co-operative Societies and in other securities such as National Savings Certificate etc.

Operating assets mean the total of net fixed assets, capital work-in-progress (i.e. fixed assets under construction or erection) and current assets.

Total assets mean the total of net fixed assets, capital work-in-progress, current assets and investments.

Gross working capital means the total of current assets.

Net working capital means the total of current assets minus the total of current liabilities.

Accounting Year: This study covers a period of 5 years, namely, 1980-81, 1981-82, 1982-83, 1983-84 and 1984-85. The Annual Accounts of 23 mills have been analysed for the purpose of this study. However, different mills follow different accounting years. For instance, some have their accounting year ending on 31st March every year, while some others have their accounting year ending on 30th September or 31st December. Mills which are registered as co-operative societies have their accounting year from 1st July to 30th June. For the purpose of this study, the accounting year has been taken as July 1 to June 30. All accounting years of different mill companies and societies which end within a particular period of July 1 to June 30, say July 1, 1980 to June 30, 1981, have been treated as coming within that year.

1.5. Review of Literature

The earliest studies on the cotton mill industry were mainly historical and descriptive (Lokanathan 1935, Gandhi 1940, N.H. Thakkar 1949, S.D. Mehta 1953).

M.M. Mehta in 1949 studied the trends in the size of cotton spinning and weaving units at different locations such as Bombay, Ahmedabad, Madras and the Rest of India for the period from 1905-44. In his study he used the 'number of spindles and looms installed'

in each individual unit as the measure of size. With regard to the industrial units in Bombay, Mehta concluded that: (i) there have been important changes in the size of industrial units; (ii) there existed in the industry, during different periods, units of widely varied sizes; (iii) there existed during each period one or more than one 'typical' or 'representative' types of industrial unit in the industry. A comparative study of the size of industrial units in Bombay and Ahmedabad revealed that the industrial units in Bombay were bigger than those in Ahmedabad. In the study, Mehta has attempted to measure the relationship between size of units and their efficiency. A remarkably apparent correlation was found between rate of profit and size of industrial units.[9]

After the fifties the empirical studies on cotton mill industry tended to be more analytical than historical or descriptive. Some of these studies were related to size, technology and capacity utilisation in the industry (Sandesara 1965, 1966, Dharma Kumar, S.P. Nag and L.S. Venkataramana 1965). The Division of Statistics of the Department of Research and Statistics of the Reserve Bank of India published two articles in R.B.I. Bulletin in 1958 and 1959 concerning the relation of profits to size of companies in cotton textile industry. T.S. Papola (1968) examined the criteria for wage determination in the Indian cotton textile industry. Nayyar (1973) made an analysis of the stagnation in India's cotton textile exports during the sixties.

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[9] M.M. Mehta, Structure of Cotton-Mill Industry of India (Allahabad: Central Book Depot, 1949), pp.73 and 169.

The determinants of investment, dividend behaviour and profitability of textile companies have received detailed analysis (Purnananda and Hanumantha Rao 1966, Ojha 1973, Krishna Murthy and Sastry 1974, Barthwal 1977).

Ojha in 1978 studied the dividend distribution of 51 cotton textile companies owning 71 mills for the period 1960-67. He analysed the dividend distribution of these companies on the basis of size, region, ownership group, management pattern and age of the companies. Big sized companies were seen to perform more satisfactorily than medium and small sized companies. Cotton textile units located in Ahmedabad-Gujarat region earned the highest profits while those located in the Northern region earned the lowest, with units in the Bombay-Maharashtra region and the Southern region earning medium profits. Textile companies managed by the managing agents showed the highest profitability in terms of paid-up capital when compared with textile companies managed by Boards of Directors or Managing Directors, Secretaries and Treasurers, and Government Controllers. Companies managed by Government Controllers showed the poorest profitability. Old companies generally had more stable and higher earnings than new companies.[10]

The problem of sickness in the cotton mill industry has received a lot of attention. Padmanabhan in 1974 analysed the problem

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[10] P.R. Ojha, Corporate Dividend Policy in Indian Cotton Textile Industry (Allahabad: Kitab Mahal, 1978), pp.75-104.

of sickness in the organised mill sector of the cotton textile industry on an all India basis. His study was divided into four sections:

a. Structural dimensions covering size, degree of integration, growth and financial structure;

b. Operational dimensions covering capacity utilisation, level of technology, labour complement, product performance and markets;

c. Income dimensions covering sales, costs and profits;

d. Purchase and sale efficiency.

He analysed the composition of assets, liabilities and net working capital. He used three financial ratios as indicators of sickness: equity/debt ratio, net worth/net fixed assets ratio and current ratio. He has found that the current ratio is useful in predicting the short- term solvency of the firm. Similarly, equity/debt ratio also proved effective in testing the long-term solvency of the firm. It was further revealed in his studies that, as the percentage of external liabilities to total liabilities increased, performance declined and the proportion of net worth exhibited a positive association with successful financial performance.[11]

Numerous articles have been published diagnosing the causes of sickness in the cotton mill industry and suggesting remedial

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[11] M. Padmanabhan, The Sick Mill Problem in the Indian Cotton Textile Industry (Unpublished Ph.D. Thesis, University of Bombay, Bombay, 1974).

measures. Some of the important studies published recently are by Arvind Lalbhai (1982), Shanbhag (1984), A.R. Garde (1985) and Omkar Goswami (1985).

Arvind Lalbhai has concluded that the most important problem facing the cotton textile industry is a steep fall in the offtake of cloth on account of the fall in consumer's purchasing capacity caused by a steep rise in prices of food and other necessities. According to him, cotton prices, wages and all other items of cost such as stores, power and fuel, etc. have been rising while production has been declining on account of power cut, labour trouble and fall in demand thereby resulting in a rise in the unit cost of production. Another cause of sickness in the mill sector is the policy of discrimination against textile mills followed by the Government for over 25 years now. Lalbhai is of the view that the compartmentalisation of textile industry in different sectors such as mills, powerlooms and handlooms has done more harm than good. He advocates that all sectors of the industry should be free to expand and grow.[12]

Shanbhag has attempted to explain the phenomenon of sickness in a wider, systemic context, using a 3-tier model borrowed from the systems method in clinical diagnosis and prognosis. The first set of factors in the model comprises of the following endogeneous predisposing factors in the mill system:

1. Sagging productivity standards

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[12] Lalbhai, Op.cit., pp.33-35.

ii. Growing machinery obsolescence

iii. Rigid insensitive marketing

iv. Inflexible/inappropriate management styles.

The second factor in the model is the exogeneous, precipitating factor in system environment, namely, the cost-effectiveness of synthetics for the consumer mass at a time of high inflationary pressure. The last set of factors in the 3-tier model consists of the following exogeneous, maintaining factors in system environment:

i. Continued erosion of purchasing power

ii. Upward trends and absence of price stabilisation in cotton

iii. Cost-effective edge of the non-organised sector in manufacturing.

According to Shanbhag, the strategy for turning sick mills around consists in making the cotton fabrics produced by mills cost-effective to the consumer. It requires a simultaneous attack on the predisposing factors in the mills which tend to raise fabric cost beyond consumer reach and on the maintaining factors in the environment. He has outlined a multi-level strategy comprising of the following elements:

i. Attention should be given to raising productivity and to fuller utilisation of existing capacity.

ii. There is a long chain in the marketing and distribution of fabrics which adds greatly to the ultimate cost of the fabric. Mills must bring about changes in the distribution of fabrics so as to lower the final price to the consumer.

iii. As the size of the cotton crop fluctuates from year to year, the government must intervene to stabilise cotton prices, through buffer stock operations.

iv. As the powerloom sector has come of age, the government should remove the excise discrimination now favouring the powerloom sector.

He does not favour large-scale modernisation as a remedial strategy because modernisation will not be cost-effective at the entire industry level.[13]

Garde defines a sick mill as one which satisfies any one of the following three conditions: (a) making loss (after covering interest and depreciation) for three consecutive years, or (b) having accumulated loss of more than Rs.20,000 per loom/Rs.350 per spindle, or (c) having reserves completely wiped out. Judging by this definition he has calculated that nearly 25% of spinning mills and about 40% of composite mills in the country are sick. Moreover, sick mills are found in all the three sectors of the industry: private, public and co-operative.

He has classified the factors causing sickness into two categories: (a) factors within the control of individual mill managements such as productivity of men and machines, control of wastes and damages, and (b) factors outside the control of individual mill managements

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[13] Shanbhag, Op.cit., pp.12-15.

such as the parity of price between raw materials and end products. Garde is of the view that in over 60 percent of mills there is substantial scope for improving profitability through improvement in the performance of factors within the control of mill managements. According to Garde, the cause of the cyclic pattern in the profitability of the mills is the fluctuating price parity between fibre prices and fabric prices.

Garde has recommended three remedies to improve the profitability of the mills:

a. Improve technical performance on critical factors affecting profitabilty.

b. Reduce labour complement to the bare minimum needed.

c. Renovate and/or modernise machinery to just the right affordable level.

He has rejected the wholesale modernisation of machinery coupled with technological upgradation and change in product-mix to finer counts and manmade fibres as being not suitable remedies at the industry level. But control of the large fluctuations in prices of cotton is indispensable to improve the profitability of the industry.[14]

Omkar Goswami has made an analysis of demand and supply in the cotton textile industry. According to him, only the powerloom sector and the pure spinning units seem to be doing well. Sixty

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[14] A.R. Garde, "The Indian Textile Industry: From Sickness to Health," Commerce Annual Number 1985, 151, No.3893, 49-54.

five to seventy percent of composite mills and the entire handloom sector are sick.

From an analysis of the demand aspects in the textile industry, Goswami reaches the following conclusions:

a. There has been an overall stagnancy in the per capita demand for textiles.

b. There has been a remarkable switch from cottons to non-cottons and blended fabrics.

c. The elasticities of demand for synthetics and blended cloth have been greater than those of cotton.

On the supply side, there has been a shift in the relative share of each sector - mills, powerlooms and handlooms - in the textile market. By virtue of differential wage costs and excise duties, powerlooms enjoy a substantial cost advantage over the composite mills. Fabrics produced at powerlooms are cheaper than mill cloth. The powerlooms have increased their share of the market at the expense of the mills and the handloom sector. The growth of powerlooms has given rise to greater demand for yarn and consequent growth in spindleage and yarn production.[15]

D.U. Sastry (1984) in The Cotton Mill Industry in India has studied three specific aspects of the mill industry, namely, capacity utilisation, productivity and demand.

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[15] Omkar Goswami, "Indian Textile Industry 1970-1984: An Analysis of Demand and Supply," Economic and Political Weekly, XX, No.38, (September 21, 1985), 1610-1612.

Another recent study on India's textile industry is by K. Sreenivasan (1984). In his book India's Textile Industry, Sreenivasan provides a comprehensive analysis of the various branches of the textile industry such as mills, powerlooms, handlooms, the knitting industry and khadi, and their interrelationships. He has also described the position of certain other industries closely related to the textile industry such as the silk industry, the wool industry, man-made fibre industry and the textile machinery industry. Finally, he has discussed the probelms and prospects of the textile industry.

Dhulasi Birundha in 1985 undertook an enquiry into the high variation in profits among mills of the same size in each year and for each mill over different years. She attempted to find the causes for the low profitability of the mills. In the study four factors were singled out for testing their impact on profitability. These four factors were: (i) size of the firm measured in terms of total financial assets, (ii) technology adopted in terms of capital intensity, viz., ratio of capital to labour, (iii) modernisation in terms of additional investment in machines, and (iv) capacity utilisation of spindles and looms in terms of the number of actual days worked by the mill. Among these four factors studied, technology and modernisation were found to have a greater impact on profitability of mills. The study has also revealed a positive correlation between profitability and growth in five out of the seven mills studied.[16]

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[16] Dhulasi Birundha, An Economic Study of Profits in Spinning and Weaving Mills in Madurai City (Unpublished Ph.D. Thesis, Madurai Kamaraj University, Madurai, 1985), pp.137, 197 and 172-5.

The South India Textile Research Association conducts periodic interfirm comparison surveys on the cost of production, financial performance and profitability among its member mills from South India. The Association publishes the reports of its studies.

The 7th Interfirm comparison survey report, the latest in the series, published by SITRA in 1984, analyses the financial performance of 97 SITRA member mills for each of the five years from 1977 to 1981. The following are some of the important findings. The return on capital employed is, on an average, about 30% for the five years from 1977 to 1981. The returns vary considerably between mills by about 100%. As regards the various items of cost of production, salaries and wages have increased steeply by about 25% over the period. There is large inter-mill variation in wages cost. Power cost has increased steeply by about 45% during this period. Stores and other costs also show a relative increase. Raw material cost as a proportion of sales revenue varied from 50% to 65% during the period. Profits and productivity show a close association. The average return on capital for composite mills is lower than that of spinning mills.[17]

In another survey report published by SITRA in 1986, the yarn selling prices and raw material costs for various counts of 173 mills are compared for the period July to September 1984. The report also gives the prices realised for various categories of waste and the

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[17] Doraiswamy, Op.cit., p.1.

level of waste in different departments. The following are some of the important findings. About 4% of the mills realised selling prices which were 8% above the industry average (i.e. on the average about Rs.6 to Rs.10 higher price per bundle in different counts). The majority of counts in these mills are coned and the average number of counts in these mills is not more than 5. However, these mills are not seen to specialise in spinning either coarse, medium or fine count ranges. The net output value i.e. the difference between yarn selling price and raw material cost per kg as compared to 20s count is nearly double in 60s and 80s and 3.5 times in 100s count.[18]

The Indian Cotton Mills' Federation publishes a journal, ICMF Journal, to carry news and articles about the mill industry in India.

Though many studies have been published about the cotton mill industry in India and its various aspects, no study has so far focused attention exclusively on the mill industry in Kerala. In that respect, this study is a pioneering attempt at analysing the profitability and performance of the industry in Kerala.

1.6. Limitations of the Study

The financial data of the mill companies/societies in Kerala have been analysed for five years. However, since various mills have adopted different accounting years, the accounting year for

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[18] Indra Doraiswamy and C.P. Ramaswamy, A Survey on Spinning Costs (Coimbatore: The South India Textile Research Association, 1986),p.1.

the purpose of this study has been taken as July 1 to June 30 and all accounting years of different mill companies and societies which end within a particular period of July 1 to June 30 have been taken as coming within that year. Indeed, it is the usual convention followed in the case of financial analysis of industries having firms following different accounting years. But, as a result, the data analysed for a particular year, even though relating to a period of twelve months, will not correspond exactly to the same period of twelve months in the case of all the mills.

1.7. Scheme of Presentation

The study is being presented in eight chapters. The first chapter contains an introduction to the study. It presents the problem, the objectives and the methodology to be used in the study. The second chapter presents a brief historical review and an account of the industry in Kerala. The third chapter analyses the profitability of the industry. The fourth chapter contains an analysis of the cost structure and productivity of the industry. The fifth and sixth chapters analyse the asset structure and financial structure of the industry respectively. The seventh chapter studies the working capital management of the cotton mill industry in Kerala. The eighth and final chapter presents a summary of the study and the conclusions and recommendations originating from the study.

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CHAPTER - II

A PROFILE OF THE COTTON MILL INDUSTRY IN KERALA

Cotton mill industry is one of the important medium and large scale industries in the State of Kerala. In this chapter, the present status of the industry is described. But, before going into the present position, a review of the historical development of the industry in the past is made.

2.1. The Indian Cotton Mill Industry: A Historical Review

Cotton manufacture was one of the most ancient occupations in India. In fact, the weaving of cotton cloth is considered to have originated in ancient India. "The earliest known piece of woven cloth cotton was found in excavations of a civilization, c.3000 B.C., at Mohenjodaro in the Sind desert, Pakistan."[1] Cloth manufactured in India was exported to and used in many parts of the ancient world. "In the Imperial Gazetter of India it is stated that '. . . Mummies in Egyptian tombs have been found wrapped in Indian muslin of the best quality.' . . . Cotton goods imported from India were used by the nobles of the Roman Empire. Muslins of Dacca were known to the Greeks under the name of Gangetika."[2]

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[1] "Cotton," Chambers's Encyclopaedia (London, 1973), IV, 172.

[2] N.H. Thakkar, The Indian Cotton Textile Industry During Twentieth Century (Bombay: Vora & Co. Publishers Ltd., 1949), p.29.

Cotton manufacture was organised on a handicraft basis in ancient India. The manufacture and export of cotton cloth continued to flourish till the fifteenth century. "Marco Polo (13th century A.D.) observed that 'Masulipatam produced the finest and the most beautiful cottons to be found in any part of the world'. Cotton produced by skilled Indian weavers working on primitive looms had a great reputation in the world outside."[3] From the fifteenth century, however, the Indian handloom industry began to decline partly due to the competition of mill-made cloth from Britain and partly due to the disappearance of native courts. It finally collapsed during the first half of the 19th century. "After 1820 the manufacture and export of cotton piecegoods declined steadily; never to rise again."[4]

2.1.1. Development before Independence

2.1.1.1. The beginning:

The starting of the Bombay Spinning and Weaving Company Ltd in Bombay in 1851 by Mr. Cawasji Nanabhoy Davar marked the beginning of the Indian cotton mill industry. The mill commenced production in 1854. However, more than thirty years earlier, in 1818, a cotton mill called Fort Gloster Mills was established by a Britisher in

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[3] Baditha Srinivasa Rao, Surveys of Indian Industries (Madras: Oxford University Press, 1958), II, 2.

[4] Industrial Commission Report 1916-18, p.297. As cited by N.H. Thakkar, Op.cit., p.30.

the district of Howrah in Bengal. As it was not followed by the establishment of other mills this event stands out as an isolated one and is not treated as the beginning of the present-day mill industry.[5]

Following the success of the Bombay Spinning and Weaving Company Ltd., another mill called Bombay Throstle Mills was started in 1857.[6] The Oriental Spinning and Weaving Company was started in 1858 by Manekjee Nusserwanjee Pettit; his son Sir Dinshaw Pettit started another mill named Manekjee Pettit Mills in 1860.[7] While these mills were started in Bombay, the first cotton mill in Ahmedabad was set up in 1859 by Shri Ranchod Lal Chotte Lal, a retired government servant. Another mill was established in Ahmedabad in 1865 by a Kanbi landlord, Seth Bechardas Ambavidas.[8]

Until 1870 the industry developed rather slowly. But during the seventies, eighties and nineties of the last century, the industry made rapid progress and "by 1900 India had 193 mills with 49,54,783 spindles and 40,124 looms."[9]

Initially, the cotton mill industry was concentrated in and around the city and island of Bombay. At the end of the 19th century

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5 C.B. Mamoria, Organisation and Financing of Industries in India 4th ed. (Allahabad: Kitab Mahal, 1971), p.377.

6 Ibid., p.378.

7 Thakkar, Op.cit., p. 35.

8 Mamoria, Op.cit., p. 378.

9 Ibid., p.379.

this island city with its 65 cotton mills could justly be called the "Cottonopolis of India".[10] In the early years of its development, the industry was predominantly a coarse yarn spinning industry chiefly because Bombay had developed a profitable export trade in yarn with China and Japan. But with the development of the cotton mill industry in Japan during the closing decade of the last century, India lost the Japanese market for its yarn and also had to face serious competition from Japan in the Chinese markets.[11]

The loss of foreign markets for the Indian yarn forced a change in the character of the Indian cotton mill industry. The mills began to develop their own weaving departments for the production of piece-goods for distribution in the domestic market. "Thus in 1900 the number of looms in Bombay per 1000 spindles was only 8.8 but by 1915 it had risen to 17.83."[12] The Indian mills had, however, to face severe competition in the domestic market from cheap millmade cloth imported from England.

2.1.1.2. Prosperity during War Time:

The First World War (1914-19) came as a boon to the indigenous cotton mill industry. "During the War the industry experienced

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[10] Tulsi Ram Sharma, Location of Industries in India (Bombay: Hind Kitabs Limited, 1946), p.7.

[11] Thakkar, Op.cit., p. 36

[12] Mamoria, Op.cit., p.379.

prosperity unparalleled in the history of the industry in India."[13] This was due to the greater military demand for cloth on the one hand and the absence of imported cloth on the other due to the impossibility of obtaining normal imports under war conditions. The war time boom lasted for about 5 years after the conclusion of the war in 1919. Cotton mill companies made large profits and high dividends were distributed by them in the postwar boom, "amounting to 47 percent in 1920, 40.5 percent in 1921 and 21.5 percent in 1922 on the pre-existing paid-up capital (excluding the capital of large new floatations)."[14]

During the Second World War (1939-45), the prosperity of the industry was again unprecedented. The Indian cotton mill industry found itself in a monopolistic position with an ever increasing demand - both civilian and military - for cloth and hardly any foreign competition to reckon with. "Among the eastern countries then open to trade, India was the only country with a well developed cotton textile industry."[15]

The monopolistic position of the industry enabled it to earn immense profits during the war years. "The chain index number of

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[13] Thakkar, Op.cit., p. 37.

[14] Rajat K. Ray, Industrialization in India: Growth and Conflict in the Private Sector 1914-47 (Delhi: Oxford University Press, 1979), pp.67-8.

[15] Thakkar, Op.cit., p.66.

profits . . . increased from 208.3 in 1938 to 760.7 in 1942."[16] "Gross profits rose fantastically during the war: Rs.5 crores in 1939, Rs.7 crores in 1940, Rs.23 crores in 1941, Rs.46 crores in 1942, Rs.109 crores in 1943, Rs.61 crores in 1945 and Rs.41 crores in 1946."[17]

The enviable prosperity enjoyed by the industry during the war years was achieved by over-exploitation of existing machinery rather than by a genuine expansion of productive capacity. "The virtual absence of an Indian textile machinery industry prevented the Indian cotton mills from seizing the great opportunities of the Second World War for increasing and renovating their plant."[18]

2.1.1.3. Developments during the inter-war period:

For the Indian cotton mill industry, the inter-war period (1919-1939) was marked by two important developments. The first of these was a tendency towards dispersal of the industry to the other regions of the country. The factors which facilitated such dispersal were the development of the means of transport and communication in the interior regions as well as the development of hydro-electric power projects in various parts of the country. The second development

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[16] Ibid.,p. 65.

[17] Ray, Op.cit., pp.70-1.

[18] Ibid., p. 64.

during the inter-war period was an increase in the production of finer varieties of cloth. "During the thirties, . . . textile enterprise in India made as rapid progress in the production of finer cotton goods as could be expected under the circumstances."[19] This was achieved by increasing the import as well as the cultivation of long- stapled cotton required for spinning finer counts of yarn.

2.1.2. Development after Independence

2.1.2.1. Planned development:

Early in 1950, the Government of India established the Planning Commission to assess the country's material, capital and human resources and to formulate a Plan for their most effective and balanced utilisation. The First Five Year Plan for the economic development of the country was formulated for the period 1951-56.

In the planned development of the textile industry, the Government was committed to a policy of fostering the growth of the labour-intensive handloom sector. With a view to protect the interests of the handloom sector, the government followed a policy of reservation of certain varieties of cloth for manufacture exclusively in the handloom sector and also placed quantitative and qualitative restrictions on a few other varieties. Moreover, the mill sector was not permitted any substantial expansion in weaving capacity.

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[19] Ibid., p.74.

During the First Five Year Plan, the production of yarn and cloth increased year after year and the targets set by the Planning Commission were exceeded. The production of mill cloth increased from 3,727 million metres in 1951 to 4852 million metres in 1956;[20] the production of yarn by mills increased from 591 million kgs in 1951 to 758 million kgs in 1956.[21]

The Second Five Year Plan was implemented for the five year period 1956-61. The period of the Second Plan was one of considerable stress and strain for the cotton mill industry. Though the production of yarn by mills increased from 758 million kgs in 1956 to 862 million kgs in 1961,[22] the production of mill cloth declined from 4852 million metres in 1956 to 4701 million metres in 1961.[23] In May 1958, the Government appointed a special Committee with Mr. D.S. Joshi, Textile Commissioner, as Chairman to enquire into the condition of the textile industry and to suggest necessary remedial measures to overcome the difficulties of the industry.

2.1.2.2. Sickness in the Industry:

The depressing condition in the mill industry worsened during

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[20] The Indian Cotton Mills' Federation, Handbook of Statistics on Cotton Textile Industry 16th ed. (Bombay, 1983), p.29.

[21] Ibid., p.22.

[22] Ibid.

[23] Ibid., p.29.

the sixties. "The industry faced its first major post-independence crisis in the early sixties. Up till then, it had been more or less a sellers' market and most of the mills were making reasonable profits. But a number of factors contributed to a very big depression in the market and the mills started incurring losses."[24] "Of the 256 cotton mill companies the financial results of which were studied by RBI for the period 1960-61 to 1965-66, 123 had suffered losses in 1965-66."[25] A number of mills were closed down.

In 1968 the Central Government set up the National Textile Corporation for the purpose of taking over the mills which had been closed down by the previous managements. Similarly, State Textile Corporations were also set up by those States in which a sizeable number of mills had closed down. "By 1974, there were a total of 103 mills under the management of the NTC . . . . It accounted for approximately 20% of the entire cotton textile industry."[26] Towards the end of the sixties, the cotton mill industry came to be dubbed as a sick industry or a problem industry.

"The second recession hit the industry in 1974."[27] The crisis worsened between 1976 and 1977. However, the position of the industry

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[24] Kasthuri Sreenivasan, India's Textile Industry, (Coimbatore: The South India Textile Research Association, 1984), p. 30.

[25] Radhakrishna R. Ruia, "Rehabilitation of Cotton Mill Industry," Commerce Annual 1968, 117, No.3009, 182.

[26] Sreenivasan, Op.cit., p.98.

[27] Ibid., p.32.

gradually improved towards the close of the seventies. During the seventies "the textile industry has switched increasingly to the use of man-made fibres."[28] The Government of India also decided in 1976 to adopt the multi-fibre approach.

"The textile industry, one of the oldest in the country and in none too robust health, has entered a decade of crisis in the eighties."[29] From 18 January 1982, 2.5 lakh textile workers in the 60 cotton mills in Bomaby city went on indefinite strike. The strike lasted throughout 1982 and spilled over to 1983 before fizzling out gradually. "The accelerated rate of growth and activity witnessed during late seventies appears to be a thing of the past and the eighties appear to throw a challenge at the industry which can be met only by radical thinking and long-term strategy."[30]

2.1.2.3. Structural changes in the industry:

In the pre-independence period, especially during the war years, the Indian cotton mill industry enjoyed great prosperity. In the post-independence period, especially from the sixties, the

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[28] D.P. Dhar, "Approach to the Development of the Textile Industry in the Fifth Plan," Commerce, 127, No.3269 (December 29, 1973), 9.

[29] A.N. Buch, "Sick Mills to be Scrapped?" Indian Express, December 18, 1982.

[30] M. Shanmugam, "Indian Textile Industry - the Current Scenario," Indian Express, August 28, 1983.

industry turned 'sick'. However, there have been some structural changes in the industry since 1951.

(i) There has been steady growth in the spinning capacity. The number of spinning mills increased from 103 in 1951 to 525 in 1983; the number of installed spindles increased from 11.00 million in 1951 to 22.53 million in 1983. But there was no growth in the weaving capacity in the mill sector. The number of composite mills was 275 in 1951 and 280 in 1983. The number of installed looms was 1.95 lakhs in 1951 and 2.11 lakhs in 1983.[31]

(ii) There has been a tremendous increase in the proportion of cloth produced by the decentralised sector. While in 1951 the percentage of handloom and powerloom cloth to total cloth production in the country was only 21.4, it rose to 69.9 in 1982. In absolute terms, handloom and powerloom cloth production increased from 1013 million metres in 1951 to 5441 million metres in 1982, while mill cloth production declined from 3727 million metres to 2347 million metres between 1951 and 1982.[32]

(iii) There has been a tremendous growth of the powerloom sector. "Since 1980 the organised cotton mill sector no longer occupies the 'commanding heights' of the Indian textile industry. That has been

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[31] The Indian Cotton Mills' Federation, Op.cit., p. 18.

[32] Ibid., p.29.

taken up by the apparently decentralised powerloom sector . . . . This sector accounts for at least 48 percent of the country's textile output."[33] The powerlooms "have increased their share of the market at the expense of the mills and the handloom sector."[34]

(iv) There has been an increase in the production of man-made fabrics, especially from the seventies.

(v) There has been a change in the ownership and control of textile mills. Until a couple of decades ago, textile mills were all in the private sector. Now, there are a large number of mills which are owned by the National Textile Corporation or the State Textile Corporations. Thus a significant part of the textile industry now belongs to the public sector.

(vi) The establishment of co-operative spinning mills is another structural change in the industry. The Government has followed a policy of encouraging the organisation of spinning mills in the co-operative sector.

2.2. Origin and Development of the Cotton Mill Industry in Kerala

Kerala is a small state situated in the south west corner of the Indian Union. The former princely states of Travancore and

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[33] Omkar Goswami, "Indian Textile Industry, 1970-1984: An Analysis of Demand and Supply," Economic and Political Weekly, XX, No.38 (September 21, 1985), 1603.

[34] Ibid., p.1612.

Cochin and the Malabar District of the Madras Province were brought under one state from 1956 to be known as Kerala as a result of the formation of states on linguistic basis.

The industrial development of the state began during the late 19th century. In Kerala also it was the cotton mill industry which set in motion the process of industrialization. "In the large industries sector, the earliest known registered factory is the Malabar Spinning and Weaving Company at Panniankara in Calicut. It was started in 1884 with an initial investment of Rs.6 lakhs."[35] The Malabar Spinning and Weaving Company was promoted by Mr. Velayudhan Mudaliar of Calicut. It was registered as a joint stock company in 1883 and the foundation stone of the mill was laid on 8th March 1884. The initial capital of the company consisted of 3000 shares of Rs.200 each. The mill commenced operations with 300 mule spindles and 200 labourers. The mill is still functioning but it is now under the management of Kerala State Textile Corporation.[36]

The second important textile unit set up in the state was the Quilon Spinning Mills started in 1884 under European management. But it ceased working with the outbreak of the First World War.[37]

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[35] Kerala State Large and Medium Industries Directory (Trivandrum, 1967), p.12.

[36] P. Damodaran, "Birth Centenary of Cotton Mill," Malayala Manorama, March 7, 1984.

[37] Kerala State Large and Medium Industries Directory, p.12.

One of the oldest textile mills in Kerala which is still functioning is the Sitaram Textiles Ltd. It was established in 1908 as a private limited company - the Sitaram Spinning and Weaving Mills. Started as a small powerloom factory, it gradually grew into a large composite mill. In 1953 liquidation proceedings were started against the company. Since then the mill worked on and off till 1972 when the unit was put to public auction by the court and the Government of Kerala purchased the unit. A new company in the name of Sitaram Textiles Ltd was registered on December 14, 1975 and the new mill was commissioned in 1978. The government of Kerala owns the company fully now.[38]

Though the first textile mill in the State was established as early as 1884, the development of the textile industry took place only after 1940. The years of incorporation of the 27 textile mills now existing in the State are given in Appendix I. The number of mills incorporated during each decade can be seen in Table-2.1.

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[38] The Business Directory - Kerala 1981 (Kottayam: National Publishers, 1981), pp.838-40.

TABLE - 2.1

Number of textile mills incorporated during each decade

Decade	No. of mills
Before 1940	2
1940 - 1950	4
1950 - 1960	6
1960 - 1970	13
1970 - 1980	2
Total	27

Source: Data collected from the mills through questionnaire

During the pre-independence era there was hardly any textile industry worth the name in the State. The development of the industry took place after independence and during the plan periods. The development is particularly significant during the third plan period, 1961-66, when 12 units (i.e. almost half the number of existing units) were established in the State. All the 12 units were spinning mills.

The development of the textile industry took place in the private sector, but its growth in the private sector was far from satisfactory. Some of the mills became sick units and were taken over by the National Textile Corporation. The State Government also came forward to help the industry. "The Kerala State Textile Corporation was incorporated in 1972 with the major objective of promoting textile industry in the State and ensuring rapid modernisation of sick mills by providing adequate financial assistance to procure necessary plant and equipment."[39] In 1978, the Corporation was entrusted with the management of three textile mills in the State, namely, Malabar Spinning and Weaving Mills Ltd., Kottayam Textiles Ltd., and Prabhuram Mills Ltd. "These mills were nationalised and vested with the Corporation as fully owned undertakings with retrospective effect from 1.9.1983."[40] Out of the 27 textile mills in the State at present, 10 mills have been transferred to the public sector on

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[39] State Planning Board, Economic Review-1981 (Trivandrum),p.87.

[40] State Planning Board, Economic Review-1986 (Trivandrum),p.50.

account of sickness. It is a clear indication that the health of the industry has been deteriorating over the years.

2.3. Present position of the cotton mill industry in Kerala.

At present, there are 27 cotton mills in Kerala, 22 of them pure spinning mills and 5 of them composite mills.

Spinning Mills:

1. Vijayamohini Mills, Trivandrum (National Textile Corporation unit).
2. Trivandrum Spinning Mills Ltd., Trivandrum (Kerala Government undertaking).
3. The Quilon Co-operative Spinning Mills Ltd., Quilon.
4. Prabhuram Mills, Alleppey (Kerala State Textile Corporation unit)
5. Kerala Spinners Limited, Alleppey.
6. Kottayam Textiles, Kottayam (Kerala State Textile Corporation unit).
7. Kathayee Cotton Mills Limited, Ernakulam.
8. G.T.N. Textiles Limited, Ernakulam.
9. The Asok Textiles Limited, Ernakulam.
10. Alagappa Textiles (Cochin) Mills, Trichur (National Textile Corporation unit)
11. Kerala Lakshmi Mills, Trichur (National Textile Corporation unit)
12. Trichur Cotton Mills Limited, Trichur.

13. Vanaja Textiles Limited, Trichur.

14. Rajgopal Textile Mills (P) Limited, Trichur.

15. Precot Mills Limited, Palghat.
(Formerly, Premier Cotton Spinning Mills Limited).

16. Sri Bhagavathi Textiles Limited, Palghat.

17. Madras Spinners Limited, Palghat.

18. The Calicut Modern Spinning & Weaving Mills Limited, Malappuram.

19. The Malappuram Co-operative Spinning Mills Limited, Malappuram.

20. Cannanore Spinning & Weaving Mills, Cannanore (National Textile Corporation unit)

21. Cannanore Co-operative Spinning Mills Limited, Cannanore.

22. Thiruvepathi Mills Private Limited, Cannanore.

Composite Mills:

1. Parvathi Mills, Quilon (National Textile Corporation unit).

2. Chakolas Spinning & Weaving Mills Limited, Ernakulam.

3. Sitaram Textiles Limited, Trichur (Kerala Govt. undertaking).

4. Malabar Spinning & Weaving Mills, Calicut (Kerala State Textile Corporation unit)

5. The Western Indian Cotton Limited, Cannanore.

As on January 1, 1983, the total spindles installed in the 27 cotton mills in Kerala were 6.23 lakhs and the total number of looms installed in the 5 composite mills in the State was 1504.[41]

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[41] The Indian Cotton Mills' Federation, Op.cit., p.19.

2.3.1. Regional Distribution

The distribution of the cotton mills in the different districts of the State can be seen from Table - 2.2.

TABLE - 2.2

District-wise distribution of cotton mills in Kerala

Districts	Spinning mills	Composite mills	Total
Trichur	5	1	6
Ernakulam	3	1	4
Cannanore	3	1	4
Palghat	3	-	3
Trivandrum	2	-	2
Quilon	1	1	2
Alleppey	2	-	2
Malappuram	2	-	2
Kottayam	1	-	1
Calicut	-	1	1
Idikki	-	-	-
Pathanamthitta	-	-	-
Wynad	-	-	-
Kasaragod	-	-	-
Total	22	5	27

There is a sizeable concentration of the industry in the central part of the State in the two adjacent districts of Trichur and Ernakulam. The three districts of Trichur, Ernakulam and Cannanore account for half the number of mills in the State. Most of the

other districts have one or two mills each. The district-wise distribution of cotton mills in Kerala is illustrated in Figure 2.1.

The larger number of cotton mills found in the three districts of Trichur, Ernakulam and Cannanore can be explained by the fact that they are three of the industrially well developed districts of Kerala. In terms of the number of registered factories working at the end of 1982, Ernakulam district occupied the first place in the State followed by Cannanore, Calicut and Trichur in the second, third and fourth places respectively.[42]

2.3.2. Sector-wise Distribution

The textile mills in the State now operate in three different sectors, namely, private sector, public sector and co-operative sector. The number of mills in each sector is as follows:

TABLE - 2.3

Sector-wise distribution of cotton mills in Kerala

Sector	No. of mills
Public Sector:	
State owned	2
NTC owned	5
KSTC owned	3
	10
Private sector	14
Co-operative Sector	3
Total	27

[42] State Planning Board, Economic Review-1984 (Trivandrum),p.56.

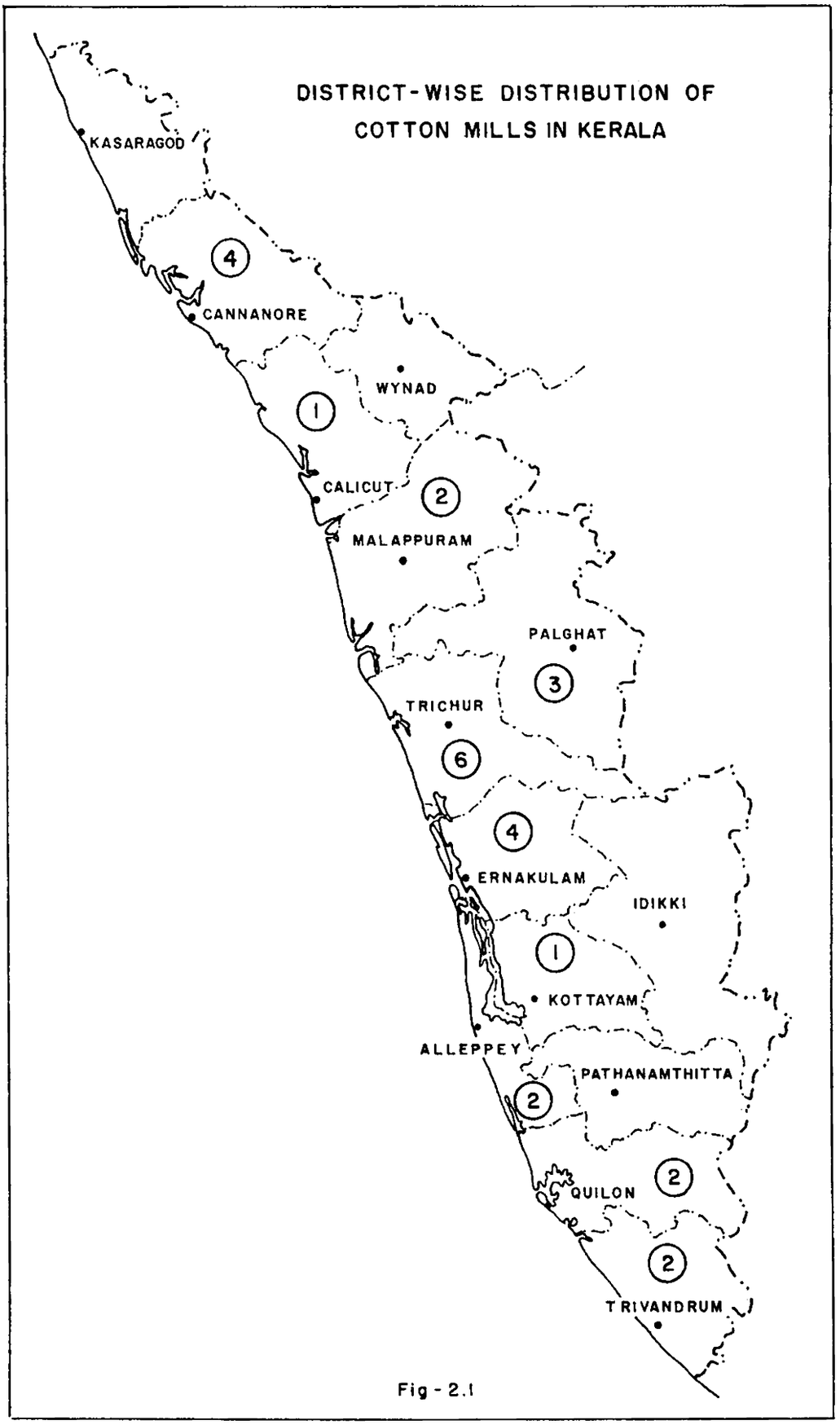
DISTRICT-WISE DISTRIBUTION OF
COTTON MILLS IN KERALA
KASARAGOD
4
CANNANORE
WYNAD
1
CALICUT
2
MALAPPURAM
PALGHAT
3
TRICHUR
6
4
ERNAKULAM
IDIKKI
1
KOTTAYAM
ALLEPPEY
PATHANAMTHITTA
2
2
QUILON
2
TRIVANDRUM

Fig - 2.1

The mills now in the public sector were started as private sector units. When their operation became unprofitable and the units faced liquidation they were transferred to the public sector as a rehabilitation measure to prevent their closure. The textile industry was a private sector industry in origin but became partly public during its development on account of persistent sickness. However, its future expansion in the State is expected to be in the co-operative sector. Only two mills were set up in the State after 1964. Both these mills were co-operative spinning mills, the Malappuram Co-operative Spinning Mills and the Quilon Co-operative Spinning Mills. Work is in progress for the establishment of another co-operative spinning mill, the Alleppey Co-operative Spinning Mill at Kayamkulam in Alleppey district, with a licensed capacity of 25,000 spindles.

2.3.3. Size-wise distribution

"The most widely used method in the Cotton textile Industry for the measurement of size is the 'Number of Spindles and Looms Installed' in each individual unit."[43] The installed capacity data of 20 spinning mills and 4 composite mills have been collected from the Annual Reports of the mill companies. The number of spindles installed in each of the 24 textile mills is given in Appendix II. A frequency distribution of the 24 mills according to the size of

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[43] M.M. Mehta, Structure of Cotton-Mill Industry of India (Allahabad: Central Book Depot, 1949), pp.14-15.

their installed spindles as on 31st March 1985 is presented in Table-2.4.

TABLE - 2.4

Size-wise distribution of cotton mills in Kerala

Installed spindles	No. of Mills
10,000 - 20,000	9
20,000 - 30,000	10
30,000 - 40,000	2
40,000 - 50,000	2
50,000 - 70,000	-
70,000 - 80,000	1
Total	24

Source: Annual Reports

The number of spindles installed in the cotton mills of Kerala ranges from a minimum of 12,064 to a maximum of 70,164. However, 19 mills out of a total of 24 (i.e., 79 percent) have less than 30,000 installed spindles. The median size of the distribution calculated from their individual values is 24,316 spindles.

The number of looms installed in 4 composite mills is given in Table- 2.5.

TABLE - 2.5

Looms installed in composite mills of Kerala

Name of mill	No. of looms
Chakolas Spinning & Weaving Mills Ltd.	300
Sitaram Textiles Ltd.	336
Parvathi Mills	380
The Western India Cotton Ltd.	388

Source: Annual Reports

The mills in Kerala are of small and medium size. "The size of units differs in different parts of the country. In Tamil Nadu, Kerala, Mysore, . . . the units are much smaller. The model unit in these states varies from 10,000/15,000 spindles and 200/400 looms. Medium-sized units . . . . have 15,000/30,000 spindles and 400/600 looms."[44]

The size of cotton mills in Kerala seems to be less than the economic size suggested for cotton mills by different authorities. In 1932, the Indian Tariff Board stated: "We have, except in case of Ahmedabad Mills, accepted as a reasonable economical standard a capacity corresponding to not less than 1,000 looms and 35,000 to 40,000 spindles."[45] "The Textile Reorganisation Committee (Manubhai

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[44] Mamoria, Op.cit., p.275.

[45] Mehta, Op.cit., p.217.

Shah Committee), in 1968, set up by the Gujarat Government to study the profitability of textile mills pointed out: 'All existing mills having less than 50,000 spindles should be raised to that size and new spinning units only of 50,000 spindles or 50,000 spindles and 1,000 looms should be licensed. Capacity below that is uneconomic'."[46]

However, as Mehta says, "one cannot be dogmatic regarding the minimum scale of efficient operation."[47] Quoting from E.A.G. Robinson's Structure of Competitive Industry (pp.23-24), Mehta states: "It has been held that in cotton-textile industry a mill of 20,000 spindles and 500 looms can secure all the economies of division of labour and integration of processes, open to a large-sized unit."[48]

2.3.4. Paid-up Capital of mills

The paid-up equity capital values of 23 mill companies/societies in Kerala have been collected from their Balance sheets. In the case of units owned by National Textile Corporation, the capital contribution by the Head office of the Corporation to the unit concerned is treated as its paid-up equity capital. The paid-up equity capitals of individual mills are given in Appendix III. Table-2.6 presents a frequency distribution of the mills according to the size of their paid-up equity capitals as on 31st March 1985.

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[46] Mamoria, Op.cit., p.277.

[47] Mehta, Op.cit., p.207.

[48] Ibid.

TABLE - 2.6

Capital-wise distribution of cotton mills in Kerala

Paid-up equity capital (Rs. in lakhs)	No. of mills
0 - 25	5
25 - 50	9
50 - 75	2
75 - 100	1
100 - 200	3
200 - 300	2
300 - 400	1
Total	23

Source : Annual Reports

The paid-up equity capital of individual mills varies from Rs.13.94 lakhs to Rs.308.50 lakhs. However, 14 mills out of a total of 23 have paid-up equity capital values of less than Rs.50 lakhs. The total paid-up equity capital of 23 mills as on 31st March 1985 amounts to Rs.17.61 crores.

Six mills have paid-up capitals of Rs.100 lakhs and above. They are Precot Mills Ltd., Cannanore Spinning & Weaving Mills, Trivandrum Spinning Mills Ltd., Sitaram Textiles Ltd., Malappuram Co-operative Spinning Mills Ltd. and Parvathi Mills. Four of these are public sector units, one a private sector unit and another a co-operative unit.

2.3.5. Production and Sales

The values of production and sales of 20 mills have been collected from their Income Statements. The total value of production of 20 mills in Kerala for the year 1984-85 amounted to Rs.104.41 crores; the total sales turnover for the year 1984-85 was Rs.103.63 crores.

2.3.6. Employment

During the year 1984-85, 13,752 persons were directly employed in 23 cotton mills in Kerala, according to the information supplied by the mill managements.

The cotton mill industry in Kerala is dispersed all over the State and functions simultaneously under the private, public and co-operative sectors. It has a total equity capital investment of over Rs.17.61 crores; provides direct employment to over 13,752 persons and has an annual sales turnover of over Rs.100 crores. But the important question is whether the cotton mill industry of the State is a profitable enterprise.

In Chapter III the profitability of the industry in Kerala shall be analysed.

* * * * *

CHAPTER - III

P R O F I T A B I L I T Y

No business can survive without profits. Profit is the force which drives the business enterprise forward. As a firm ceases to make profits, it slowly grinds to a halt. The unit becomes 'sick'. According to the Reserve Bank of India, "a unit may be considered as sick if it has incurred cash loss for one year and . . . is likely to continue to incur cash losses for the current year as well as the following year."[1] Thus profit is a basic necessity to ensure the survival and growth of an industry. "The relation among business, profits and economic growth is basically very simple. Profit determines investment and investment is essential to growth."[2] In this chapter the profitability of the cotton mill industry in Kerala will be examined.

"Perhaps no term or concept in economic discussion is used with a more bewildering variety of well-established meanings than profit."[3] The term 'profit' is used in a number of expressions such

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[1] Reserve Bank of India, Report on Trend and Progress in Banking in India, 1977-78, p.25.

[2] Harold W. Stevenson and J. Russel Nelson, Profits in a Modern Economy (Bombay: Vora & Co. Publishers Pvt. Ltd., 1969), p.9.

[3] F.H. Knight. As cited by K.P.M. Sundharam and M.C. Vaish, Principles of Economics 7th ed. (Agra: Ratan Prakashan Mandir, 1968), p.475.

as gross profit, operating profit, profit after tax, etc., to mean different things. Company profits are expressed in rupees. Such absolute figures of profits can be misleading while making inter-firm comparisons. It is, therefore, more meaningful to use ratios to measure the profitability of business firms. "A device for making financial data more meaningful is to reduce figures to ratios. The ratios, being free from units of measurement, are more easily comparable between two different situations for their relative assessment."[4]

The profitability of a business firm can be studied in relation to its sales and in relation to its investment. Profitability expresses the relationship between the figure of profit of a firm and its sales volume or investment in assets. However, since the term 'profit' is used in a number of ways there can be different profitability ratios.

3.1. Profitability Ratios

In this study, eight ratios have been used to measure the profitability of the industry. They are: (i) Gross profit margin, (ii) Operating profit margin, (iii) Earnings per share (EPS), (iv) Return on Capital Employed (ROCE), (v) Return on Assets (ROA), (vi) Operating assets turnover, (vii) Gross profit per spindle, (viii) Operating profit per spindle.

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[4] Nafees Baig, Problems on Managerial Accounting (New Delhi: Sterling Publishers Private Limited, 1974), p.200.

3.1.1. Gross Profit Margin

It is the ratio of gross profit to sales, expressed as a percentage. It is calculated by dividing gross profit by sales and multiplying the result by 100. Gross profit is defined as profit before interest, depreciation and taxes. It is arrived at by deducting all expenses other than interest, depreciation and taxes from the total of sales plus increase in stock. Sales is taken as the net sales, i.e., sales less excise duty, discount and returns.

Sales represent the gross revenue of a business enterprise. Without adequate sales a business cannot hope to prosper. But what is more important is the profitableness of the sales. When the cost of goods sold and the expenses of doing the business are deducted from the sales revenue, there must be a satisfactory margin of income. The ratio of gross profit margin measures the profitableness of sales of a firm. It indicates the relation between production cost and selling price. "The gross profit margin reflects the efficiency with which management produces each unit of product."[5]

3.1.2. Operating Profit Margin

It is the ratio of operating profit to sales expressed as a percentage. It is calculated by dividing operating profit by sales and multiplying the result by 100. Operating profit is defined as gross profit minus interest and depreciation. In other words, it

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[5] I.M. Pandey, Financial Management 2nd ed. (New Delhi: Vikas Publishing House Pvt. Ltd., 1981), p.518.

is the profit after interest and depreciation but before tax and adjustment of other income.

This ratio indicates the margin left after deducting all expenses of a business - manufacturing, administrative, selling and financing - from its sales revenue adjusted for changes in the level of stock. It is from this margin that the firm has to meet income tax payments, dividend payouts and retained earnings. An adequate margin is vital for the firm's growth.

3.1.3. Earnings per share

The equity shareholders are the real and residual owners of a company. The earning of a satisfactory return on their investment in the company is the ultimate objective of financial management of a company. Being the residual owners of a company, the equity shareholders are entitled to the residual profits, i.e., the net profit after taxes and after preference dividend.

> The profitableness of the common shareholders' investment can be measured in many . . . ways. One such measure is to calculate the earnings per share. The earnings per share are calculated by dividing the net profit after taxes less preference dividend by the total number of common shares outstanding. [6]

> The earnings per share simply show the profitability of the firm on a per-share basis; it does not reflect how much is paid as dividend and how much is retained in the business. But as a profitability index, it is a valuable and widely used ratio. [7]

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[6] Ibid., p.523.

[7] Ibid., p.524.

3.1.4. Return on Capital Employed

The profitability of a business firm should also be measured in relation to the investment in the firm which is represented by total assets or capital employed. "The ultimate test of any business is the rate of income earned on the capital invested. The return on capital may be measured by the ratio of income to capital."[8]

Return on capital employed is a ratio which is widely used to measure the profitability of investment in a firm. It expresses the relation between profit before interest, depreciation and taxes and the capital employed, as a percentage.

> A number of different measures of capital employed have been used in the past. It is now becoming accepted that by capital employed we mean the total long term funds employed in the business. In the balance sheet of a business, this can be defined either as the total of shareholders' funds and borrowed funds, or as the net assets of the business, the two values being the same.[9]

For the purpose of this study, 'capital employed' has been taken as the aggregate of net worth (i.e., the shareholders' funds), long-term liabilities and bank borrowings. A company's capital employed thus represents those funds "on which it is expected to provide

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[8] John N. Myer, Financial Statement Analysis 4th ed. (New Delhi: Prentice-Hall of India Pvt. Ltd., 1978), p.192.

[9] Wright M.G., Financial Management (London: McGraw-Hill Publishing Co. Ltd., 1970), p.13.

a return, whether in interest on borrowed funds or dividends to shareholders."[10] Since the figure of capital employed includes borrowed funds, the earnings measured against the capital employed are the profits before deducting interest.

The return on capital employed is a measure of the financial success of a firm. It shows whether the firm has succeeded in generating sufficient return to the suppliers of capital, namely, the creditors and the owners. " 'Return on capital employed' is a measure of the economic justification of a particular line of business."[11]

3.1.5. Return on Assets

It is a ratio used to measure the profitability of the firm in relation to investment. It expresses the relation between operating profit and operating assets as a percentage. Operating profit is defined as profit after interest and depreciation but before tax and other income. Operating assets are defined as the total of net fixed assets, capital work-in-progress and current assets.

James Van Horne has given the 'Return on assets' ratio as:[12]

$$\frac{\text{Net profits after taxes}}{\text{Total tangible assets}}$$

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[10] Ibid.

[11] Man Mohan and S.N. Goyal, Principles of Management Accounting (Agra: Sahitya Bhawan, 1972), pp.326-7.

[12] James C. Van Horne, Fundamentals of Financial Management 5th ed. (New Delhi: Prentice-Hall of India Pvt. Ltd., 1984), p.114.

However, for the purpose of this study, in the numerator of the ratio 'operating profit' has been substituted in place of 'net profits after taxes' because it is desired to measure the pretax profitability of investment. Moreover, when "the return is based on assets, consistency requires that non-operating or non-recurring income be excluded."[13] To correspond with the 'operating profit' in the numerator of the ratio, the denominator has been taken as 'operating assets' which are really total tangible assets minus investments, because total tangible assets constitute the total of net fixed assets, capital work-in-progress, current assets and investments.

Return on assets is a measure of the overall efficiency of a business concern. "The return on assets is a useful measure of the profitability of all financial resources invested in the firm's assets. It evaluates the use of total funds without any regard to the sources of funds."[14] It can be used "to appraise the performance of operating management in the use of assets."[15] .

The Return on assets ratio has certain limitations.

> This ratio is conceptually unsound as it excludes interest charges from the net profit figure. The total assets have been financed from the "pool" of funds supplied by creditors and owners. In measuring the return on assets, the intention is to judge the effectiveness in using the "pool" of funds. However, the net profit . . . in the numerator of the ratio excludes the interest charges . . . resulting in an under-statement of the earnings generated by the "pool" of funds.[16]

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[13] Myer, Op.cit., p.193.

[14] Pandey, Op. cit., p.521.

[15] Myer, Op. cit., p.193.

[16] Pandey, Op.cit., p.521.

The denominator of the ratio is also not free from defects. "The total of the fixed assets is usually an extremely complex item affected by the price level at the date of acquisition of the assets, the length of time that has elapsed since acquisition, depreciation policies pursued, replacements and betterments, and so forth."[17] The denominator of the ratio (operating assets) tends to be understated, because the fixed assets' valuation convention of 'historical cost less depreciation' results in the undervaluation of fixed assets. "As fixed assets tend to be under-valued in company accounts in a period of inflation, the denominator of the rate of return (net assets) is understated, and the numerator (profits) is overstated because depreciation charges are too low,"[18] being based on the book value of fixed assets.

3.1.6. Operating assets turnover

It expresses the relationship between sales and operating assets. It is calculated by dividing sales by the operating assets.

"The turnover ratio tells us the relative efficiency with which a firm utilizes its resources to generate output."[19] The operating efficiency of a firm, revealed by the Return on assets ratio, is determined by two factors: (i) operating profit margin, and (ii)

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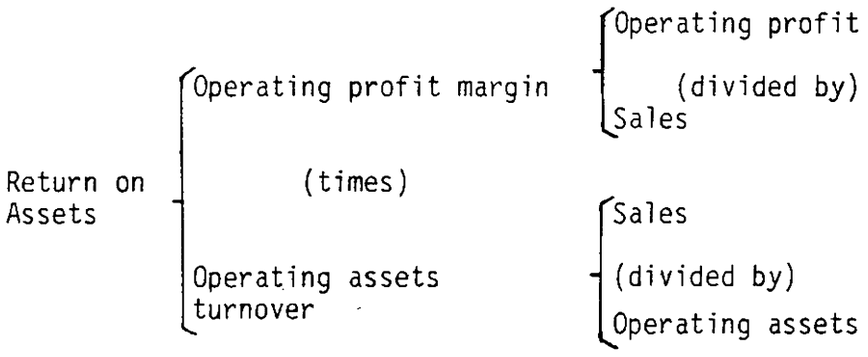
[17] Myer, Op.cit., p.194.

[18] Singh A. and G. Whittington, Growth, Profitability and Valuation: A Study of United Kingdom Quoted Companies (London: The Syndics of the Cambridge University Press, 1968), p. 25.

[19] Van Horne, Op.cit., p.114.

operating assets turnover. "Neither the net profit margin nor the turnover ratio by itself provides an adequate measure of operating efficiency. The net profit margin ignores the utilization of assets, whereas the turnover ratio ignores profitability on sales. The return-on-assets ratio, or earning power, resolves these shortcomings. An improvement in the earning power of the firm will result if there is an increase in turnover on existing assets, an increase in the net profit margin, or both."[20]

The DuPont chart illustrates the interrelation of these ratios.



3.1.7. Gross profit per spindle

Spindles are the major item of machinery installed in spinning mills to produce yarn. The number of installed spindles vary from mill to mill. By relating the profit earned by a mill to the number of spindles installed in the mill, the profitability of the mill in relation to investment can be measured.

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[20] Ibid., p.115.

Gross profit per spindle is calculated by dividing the total gross profit by the number of installed spindles in a mill. It is a useful measure of profitability in terms of the physical investment in a mill.

This study includes 4 composite mills also. For purposes of uniform interfirm comparison, the number of looms in composite mills have been converted to spindles in the proportion of 1 loom: 50 spindles, which is the proportion adopted by SITRA for its inter-firm comparison surveys.[21]

3.1.8. Operating profit per spindle

It is calculated by dividing the total operating profit by the number of installed spindles in a mill. It expresses the operating profit earned on each spindle installed in the mill.

Eight ratios have been selected for studying the profitability of the industry. Gross profit margin and operating profit margin reveal the profitability in relation to sales. Return on capital employed and Return on assets measure profitability in relation to investment in financial terms. Gross profit per spindle and operating profit per spindle measure profitability in terms of investment in physical terms. Earnings per share and operating assets turnover are also good indicators of profitability. A comprehensive picture

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[21] Indra Doraiswamy, Financial Performance in Boom and Recession (Coimbatore: The South India Textile Research Association, 1984), p.11.

of the profitability of the cotton mill industry in Kerala can be obtained with the help of these ratios.

3.2. Profitability during the five year period 1980-81 to 1984-85

This study covers a period of 5 years from 1980-81 to 1984-85. First of all, the profitability of the industry during this 5 year period will be analysed.

3.2.1. Measurement of Profitability

3.2.1.1. Profit as a percentage of sales

(i) Gross profit margin: The median, range and standard deviation of the gross profit margins of the mills included in this study for the 5 years from 1980-81 to 1984-85 are presented in Table-3.1.

TABLE - 3.1

Gross Profit Margins (%)

Year	Median	Range	Standard deviation
1980-81	13.09	23.44	5.94
1981-82	0.99	24.66	6.27
1982-83	6.54	29.51	7.09
1983-84	6.83	35.04	8.53
1984-85	4.74	35.74	9.33

Source: Calculated from Annual Reports

The median represents the average for the industry. The Range, being the difference between the largest and the smallest values, shows the range of variation. In addition, there is a certain amount of "spread" of the individual values around the central value. "This spread may be expressed in various statistical measures; but by far the most accepted and generally applicable measure is the standard deviation,"[22] which measures the variations of individual values in relation to the arithmetic mean.

The median gross profit margin slumped from 13.09 percent in 1980-81 to 0.99 percent in 1981-82 and then rose in the subsequent years but not to the level in 1980-81. It was only in 1980-81 that all the units had positive gross profit margins while in the remaining 4 years some units had negative gross profit margins. Each year there is considerable interfirm variation in the gross profit margins.

(ii) Operating profit margin: The median, range and standard deviation of the operating profit margins of the mills included in this study for the 5 years from 1980-81 to 1984-85 are given in Table - 3.2.

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[22] Norbert Lloyd Enrick, Management Control Manual for the Textile Industry (Bombay: Vora & Co. Publishers Pvt. Ltd., 1969), p.232.

TABLE - 3.2

Operating Profit Margins (%)

Year	Median	Range	Standard deviation
1980-81	4.04	40.90	8.68
1981-82	(-) 11.01	42.12	10.42
1982-83	(-) 4.45	33.92	8.88
1983-84	(-) 6.22	41.62	10.21
1984-85	(-) 3.48	36.25	11.14

Source: Calculated from Annual Reports

As in the case of gross profit margins, the median operating profit margin slumped from (+) 4.04 in 1980-81 to (-) 11.01 in 1981-82 and then improved to some extent in the subsequent years. While in 1980-81 only 5 units made operating losses, in 1981-82 all units except two made operating losses and in 1982-83, 1983-84 and 1984-85 the majority of units made operating losses.

Each year there is considerable interfirm variation in the operating profit margins. The interfirm variation in the operating profit margins is larger than the interfirm variation in the case of gross profit margins, as revealed by the Range and Standard deviation.

3.2.1.2. Profit as a percentage of investment

(i) Return on Capital Employed: The median, range and standard deviation of the Returns on capital employed of the mills included in this study for the 5 years from 1980-81 to 1984-85 are presented in Table-3.3.

(ii) Return on Assets: The median, range and standard deviation of the Returns on assets of the mills included in this study for the 5 years from 1980-81 to 1984-85 are given in Table-3.4.

TABLE - 3.4

Return on Assets (%)

Year	Median	Range	Standard deviation
1980-81	5.15	35.39	8.08
1981-82	(-) 9.71	38.47	7.87
1982-83	(-) 5.89	28.63	7.97
1983-84	(-) 5.17	35.13	8.77
1984-85	(-) 4.98	37.10	11.99

Source: Calculated from Annual Reports

The median Return on assets was the highest in the year 1980-81 and the lowest in 1981-82. While in 1980-81 only 5 units recorded negative returns, in 1981-82 only two units were able to earn positive Returns on assets. In the other years, majority of the units recorded negative returns.

Each year there is considerable interfirm variation. The variation in the case of Operating profit margin and Return on assets may be compared because both the ratios have operating profit as the numerator. The extent of variation among individual mills in respect of both these ratios is more or less the same as can be seen

from the Range and Standard deviation figures. This indicates that the extent of variation of the denominators of the ratios, namely, sales and operating assets, is more or less the same among different mills.

3.2.1.3. Profit per spindle

(i) Gross profit per spindle: The median, range and standard deviation of the gross profits per spindle of the mills included in this study for the 5 years from 1980-81 to 1984-85 are presented in Table - 3.5.

TABLE - 3.5

Gross Profits per spindle (Rupees)

Year	Median	Range	Standard deviation
1980-81	154.20	256.00	69.86
1981-82	10.01	241.41	61.08
1982-83	76.80	416.72	108.32
1983-84	104.28	411.11	121.30
1984-85	59.46	652.21	187.83

Source: Calculated from Annual Reports

The highest median gross profit per spindle of Rs.154.20 was recorded in 1980-81 and the lowest median gross profit per spindle of Rs.10.01 was recorded in 1981-82. There is wide interfirm variation each year.

(ii) Operating profit per spindle: The median, range and standard deviation of the operating profits per spindle of mills included in this study for the 5 years from 1980-81 to 1984-85 are given in Table-3.6.

TABLE - 3.6

Operating Profits per spindle (Rupees)

Year	Median	Range	Standard deviation
1980-81	44.23	570.95	126.73
1981-82	(-) 139.69	396.93	103.52
1982-83	(-) 61.45	465.18	115.57
1983-84	(-) 95.24	428.78	98.60
1984-85	(-) 49.00	503.34	146.02

Source: Calculated from Annual Reports

The highest median operating profit per spindle is recorded in the year 1980-81 and the lowest in 1981-82. Every year there is wide variation in the operating profit per spindle earned by different mills.

3.2.2. Evaluation of profitability of the industry

Two features which emerge from an assessment of the profitability of the industry during the 5 year period 1980-81 to 1984-85 are:

(i) decline in profitability over the period, and (ii) interfirm variation in profitability.

3.2.2.1. Decline in profitability

The industry was profitable during the year 1980-81; all the mills earned positive gross profit margins and only 5 mills had negative operating profit margins. However, the profitability of the industry declined sharply in 1981-82. Even though the profitability of the industry increased during the subsequent years, it did not reach the level achieved in 1980-81. Among the 5 years covered in this study, 1980-81 was the most profitable year for the cotton mill industry in Kerala. On the contrary, 1981-82 was the least profitable for the industry; the years 1982-83, 1983-84 and 1984-85 were also none too good for the industry. The medians of Operating profit margin, Return on assets and the Operating profit per spindle were negative for all the four years from 1981-82 to 1984-85. The decline in profitability of the industry during the period of study is illustrated in Figure 3.1.

Industrial environment of the period: The variation in profitability from year to year during the period of study can be understood by examining the industrial environment which prevailed during this period.

The condition of the industry has varied from year to year. "Between the years 1977 and 1981, the industry completed one full cycle in profitability - boom, normal conditions and recession. The

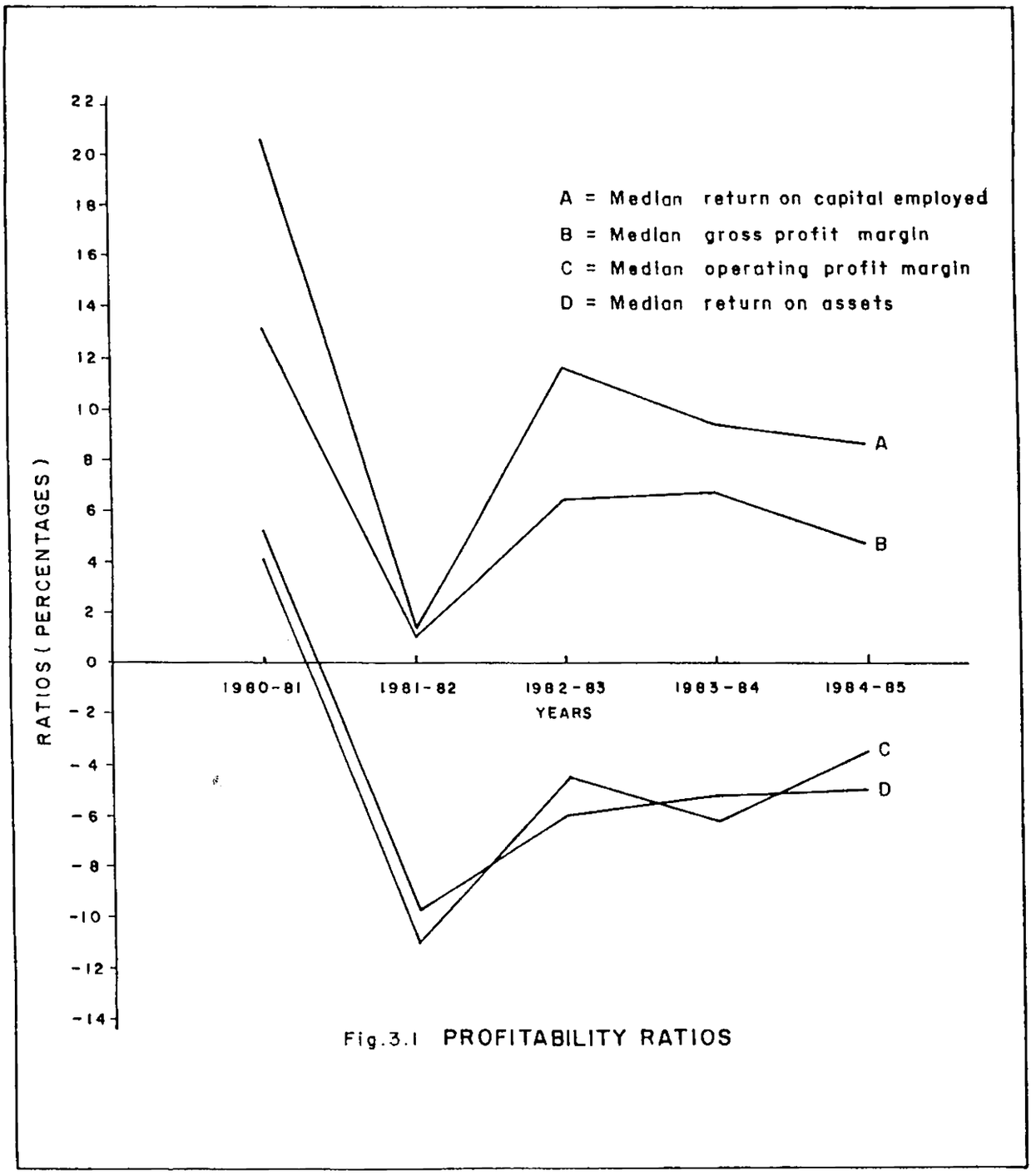

Fig.3.1 PROFITABILITY RATIOS

representative years for recession are 1977 and 1981 and that of boom are 1979 and 1980."[23] Therefore the first year of the study, 1980-81 (July 1980 - June 1981), can be taken as a normal year marking the transition from boom to recession.

The year 1981-82 was an abnormal one for the mill industry in Kerala. During the year, thirteen textile mills in the State had to face a prolonged strike extending over six months from October 1981 to April 1982 on the issue of Bonus. Nine of the mills included in this study had to face the strike for periods ranging from 3 to 6 months.

The working of mills in Kerala in 1982-83 was adversely affected by the power-cut imposed by the Government of Kerala from December 1982. "Due to the failure of the monsoon in 1982, Kerala Government imposed an unexpected power cut of 20% from December 1982. This power cut was enhanced to 40% from January 1983 and was at that level till May, 1983."[24] "In the month of June, 1983 there was complete power cut of 100%."[25]

During the year 1983-84 also, the mills in Kerala were affected by power-cut and recession. The 22nd Annual Report of G.T.N. Textiles Ltd states:

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[23] Doraiswamy, Op. cit., p.11.

[24] Premier Cotton Spinning Mills Ltd., Annual Report 1983 (Coimbatore, 1983), p.9.

[25] G.T.N. Textiles Ltd., 21st Annual Report 1982-83 (Alwaye, 1983),p.4.

> The severe power-cut imposed by the Government of Kerala which affected the working of the previous year continued to some extent in the year under review also. It was only from 1.6.1984 that restrictions on power consumption were totally relaxed. Besides, . . . the continued recessionary trend and lack of consumer demand faced by the textile industry affected the working results of your company also.[26]

The closing months of the year 1984-85 marked a revival of the industry and its return to normal conditions. The Annual Report of Precot Mills Ltd for 1985 states: "During the later part of the year under review there were distinct indications that the recessionary trend had weakened thus raising hopes about the revival of the industry."[27] (Precot Mills' accounting year ended on 31st May.)

Thus only 1980-81 can be considered as a normal year for the cotton mill industry in Kerala. The rest of the period of this study is marked by strikes, power-cuts and recessionary trends. As a result, profitability of the industry during these four years has been significantly reduced.

3.2.2.2. Interfirm variation in profitability

There is considerable interfirm variation in the profitability of individual firms included in the study. Two significant trends can be discerned in this interfirm variation in profitability.

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[26] G.T.N. Textiles Ltd., 22nd Annual Report 1983-84 (Alwaye, 1984), p.4.

[27] Precot Mills Ltd., Annual Report 1985 (Coimbatore, 1985), p.6.

Firstly, the interfirm variation in the operating profit margin is larger than the interfirm variation in gross profit margin. This seems to indicate that the operating profits vary much more than gross profits as between individual mills. Operating profit being gross profit minus depreciation and interest payments, this trend indicates wide variation among mills in respect of depreciation charges and interest payments which in turn is the result of varying levels of investment in fixed assets and borrowings.

The second significant trend in interfirm variation is that there is much wider variation among mills in respect of the rates of return on capital employed as compared to the gross profit margins. As both the return on capital employed and the gross profit margin have 'gross profits' as the numerator, the difference in variation is due to the denominators of the ratios, 'capital employed' and 'sales' respectively. The wider variation in rates of return on capital employed seems to indicate that the 'capital employed' varies much more than 'sales' as between different mills. In other words, while individual mills earn varying rates of gross profit margin on sales, they do so by employing even more widely varying levels of capital.

Capital employed is defined as the total of net worth (share capital plus reserves), long-term liabilities (debentures and term loans) and bank borrowings for working capital. Wide variation in capital employed will produce wide variation in interest payments which contributes to the wider variation in operating profit margins

as compared to the gross profit margins noticed earlier.

3.2.3. Performance of individual mills

The mean gross profit margins, operating profit margins, returns on capital employed and returns on assets for the 5 year period for each mill included in the study are presented in Table-3.7. However, in order to conceal the identity of the mills, each mill is identified by a letter such as A, B, C and so on. Individual mills will be designated throughout this study by the same identification letters.

TABLE - 3.7

Profitability Ratios (%)
(Average for 5 years 1980-81 to 1984-85)

Name of mill	Gross profit margin	Operating profit margin	ROCE	ROA
A	19.27	7.27	29.30	6.83
B	8.72	(-) 3.66	16.20	(-) 3.45
C	5.80	(-) 7.18	11.53	(-) 4.97
D	12.55	(-) 11.44	8.97	(-) 5.95
E	10.01	(-) 11.24	10.28	(-) 7.45
F	8.74	(-) 0.41	22.13	(-) 1.00
G	(-) 5.27	(-) 21.96	(-) 8.79	(-) 17.67
H	10.07	(-) 0.90	25.89	(-) 0.32
I	5.32	(-) 5.69	7.40	(-) 4.43
J	(-) 3.90	(-) 9.40	(-) 22.99	(-) 12.63
K	(-) 0.86	(-) 7.48	3.15	(-) 14.13
L	(-) 1.36	(-) 11.99	(-) 6.51	(-) 14.66
M	17.44	4.98	18.20	3.98
N	9.74	(-) 16.63	4.76	(-) 9.35
O	2.30	(-) 11.61	1.26	(-) 10.70
P	11.70	2.52	11.77	3.92
Q	9.96	(-) 7.33	15.51	(-) 2.01
R	1.76	(-) 22.05	1.58	(-) 16.58
S	8.64	0.60	23.44	1.84
T	6.59	(-) 3.72	12.56	(-) 3.68
U	3.72	(-) 4.40	5.78	(-) 4.03
V	0.83	(-) 15.54	(-) 0.20	(-) 12.87
W	3.61	(-) 4.84	11.51	(-) 7.14
Median Values	6.59	(-) 7.18	10.28	(-) 4.97

Source: Calculated from Annual Reports

Notes: 1. In the case of mill J, the data for 1980-81 were not available. Hence the average has been calculated for 4 years (1981-82 to 1984-85).

2. In the case of mills E and R, the average calculated is for 3 years (1980-81 to 1982-83) as data were not available for the last two years.

3. In the case of mill D, data were available only for two years and hence the average calculated is for 2 years (1980-81 and 1981-82).

The most profitable and the least profitable mills

Eight mills are seen to have profitability ratios equal to or higher than the median values consistently in all the four ratios used. These most profitable mills, in the order of their profitability, are: A, M, H, P, S, F, B and T. Except mill P, the other seven mills are private sector mills. In fact, mill A is one of the top ranking mills in South India as a whole as reported in the company's Annual Report for 1982.

Seven other mills are seen to have profitability ratios less than the median values consistently in the case of all the four ratios used. These least profitable mills are: G, L, R, V, J, O and K. Five of them are public sector mills, one a cooperative mill and another a private limited company.

Out of the 23 mills included in this study, one-third of them have shown consistently better performance, one-third have shown

consistently worse performance and the other one-third have shown average performance, over the 5 year period from 1980-81 to 1984-85. This seems to be in line with the general trend in the cotton textile industry as a whole. "In any given year, a large proportion of mills (about 30-40 percent) even in the private sector, make marginal profits or losses to varying extents."[28]

3.3. Profitability during 1980-81

Since 1980-81 is the only normal year within the period covered by this study, an analysis was made of the profitability of the industry in Kerala during the year 1980-81.

3.3.1. Measurement of Profitability

3.3.1.1. Profit as a percentage of sales

(i) Gross profit margin: The gross profits as percentages of sales of 22 mills for 1980-81 are given in Appendix IV, along with their median, range and standard deviation values.

All the mills have earned positive margin on sales. But there is considerable variation among mills. The industry has a median gross profit margin of 13.09 percent.

(ii) Operating profit margin: The operating profits as percentages of sales of 22 mills for 1980-81 are given in Appendix V, along with their median, range and standard deviation values.

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[28] A.R.Garde, "The Indian Textile Industry: From Sickness to Health," Commerce Annual Number 1985, 151, No.3893, 45.

As in the case of gross profit margins there is considerable variation among mills. The range of variation of operating profit margins is higher than the range of variation of gross profit margins. The median operating profit margin is 4.04 percent. Five mills have failed to earn positive operating profit margin.

Except in the case of two mills, N and D, the positions of the mills in the two tables which are arranged in the descending order of gross profit margins and operating profit margins do not vary significantly. Mills in the top half of the gross profit table figure in the top half of the operating profit table also. However, mill N has shifted from the second position in the gross profit table to the penultimate position in the operating profit table. Mill D has shifted from the top half in the gross profit table to the bottom half in the operating profit table. This is due to larger interest and depreciation charges resulting from proportionately higher investment in fixed assets and larger borrowings.

3.3.1.2. Profit as a percentage of investment

(i) Return on Capital Employed: Gross profits as percentages of capital employed of 22 mills for 1980-81 are given in Appendix VI, along with their median, range and standard deviation values.

All the mills have earned positive rates of return. The median rate of return on capital employed for the industry is 20.59 percent. But the rates of return for individual mills vary between a maximum of 66.33 percent and a minimum of 4.35 percent.

The rate of return on capital employed for the industry in Kerala seems to be less than the rate for the industry as a whole. The mean rate for the 22 mills studied here works out to only 21.30 percent. "Earlier studies by SITRA have shown that the return on capital for spinning mills over a period of 20 years averaged about 25% before depreciation and interest."[29] The interfirm comparison survey carried out by SITRA among textile mills in South India revealed an overall average rate of return on capital employed for the period 1977-81 amounting to 29.4 percent. The average rate of return for the South Indian mills for the calender years 1980 and 1981 were 35.0 and 14.0 percent respectively.[30] The weighted arithmetic average for the two years 1980 and 1981 works out to 25.10 percent which is higher than 21.3 percent - the average rate of 22 mills in Kerala for the period 1980-81 (i.e. July 1, 1980 - June 30, 1981).

It may be noted that there is a slight difference in the definition of 'capital employed' used for the calculation of the rate between this study and SITRA's study. SITRA has defined 'capital employed' as 'fixed assets plus current assets minus current liabilities',[31] i.e., net tangible assets excluding investments. 'Capital employed' has been defined in this study as 'net tangible assets (i.e. net worth plus long term liabilities) plus bank borrowings'. Since the

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[29] Doraiswamy, Op.cit., p.3.

[30] Ibid.

[31] Ibid., p.5.

denominator (capital employed) in this study for the calculation of the rate of return is higher, the return worked out for the 22 mills in Kerala will be slightly understated.

(ii) Return on Assets: Operating profits as percentages of operating assets of 22 mills for 1980-81 are given in Appendix VII, along with their median, range and standard deviation values.

The median rate of return on assets for the industry is 5.15 percent. Five mills have failed to earn positive returns on assets.

(iii) Operating assets turnover: The number of times the mills have turned over their operating assets during the year 1980-81 are presented for 22 mills in Appendix VIII.

The turnover rates for individual mills vary between 0.34 and 2.21 times. The median rate for the industry is 1.09 times. However, nine out of the 22 mills were able to achieve only turnover rates of less than 1.

3.3.1.3. Profit per spindle

(i) Gross profit per spindle: The gross profits per spindle of 22 mills for 1980-81 are given in Appendix IX, along with their median, range and standard deviation values.

The gross profits per spindle of individual mills vary widely between a maximum of Rs.303.32 and a minimum of Rs.47.32. The median gross profit per spindle is Rs.154.20.

The gross profit per spindle of mills in Kerala compares well with the gross profit per spindle of South Indian mills as a whole. The average gross profit per spindle revealed by SITRA's interfirm comparison survey of South Indian mills is Rs.157.80 for the period 1977-81;[32] the weighted arithmetic average for the calender years 1980 and 1981 is Rs.153.51. As against these, the average gross profit per spindle for the mills in Kerala works out to Rs.161.02 for 1980-81 (i.e. July 1980-June 1981).

(ii) Operating profit per spindle: The operating profits per spindle of 22 mills for 1980-81 are given in Appendix X, along with their median, range and standard deviation values.

The median operating profit per spindle is Rs.44.23. The operating profits per spindle of individual mills vary much more than the gross profits per spindle, the range of variation being Rs.570.95 in the case of operating profits per spindle and Rs.256.00 in the case of gross profits per spindle.

The operating profit per spindle of mills in Kerala compares very unfavourably with operating profit per spindle of South Indian mills as a whole. The average operating profit per spindle revealed by SITRA's interfirm comparison survey of South Indian mills is Rs.66.00 for the period 1977-81;[33] the weighted arithmetic average

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[32] Doraiswamy, Op.cit., p.4.

[33] Ibid., p.5.

for the calender years 1980 and 1981 is Rs.46.76. As against these, the average operating profit per spindle for the mills in Kerala works out to only Rs.28.76 for 1980-81 (i.e. July 1980 - June 1981).

(iii) Depreciation and Interest per spindle: The gross profit per spindle for the Kerala mills compares well with the gross profit per spindle for the South Indian mills, but the operating profit per spindle for the Kerala mills compares rather badly with the operating profit per spindle for the South Indian mills. To understand this contradiction, we should compare the depreciation per spindle and the interest per spindle as between the Kerala mills and the South Indian mills.

TABLE - 3.8

Depreciation and Interest per Spindle (Rupees)

	SITRA MILLS[34] 1977-81	SITRA MILLS* 1980 & 1981	KERALA MILLS 1980-81
Average Depreciation per spindle	37.3	44.73	56.70
Average Interest per spindle	52.6	59.02	75.57

* Weighted average

Source: Calculated from Annual Reports of Kerala mills and SITRA's 7th Interfirm Comparison Survey Report

[34] Ibid.

As can be seen from the above table, both the average depreciation per spindle as well as the average interest per spindle are higher in the case of Kerala mills. That accounts for the lower average operating profit per spindle of Kerala mills.

3.3.1.4. Earnings per share

The earnings per equity share of face value Rs.100 of the 22 mills for the year 1980-81 are given in Appendix XI.

There is wide variation among mills in their earnings per share. The median EPS amounts to Rs.26.23. Five mills have negative earnings. There are three mills whose Earnings per share are less than Rs.10. Five mills have Earnings per share between Rs.20 - Rs.50; another five mills have EPS between Rs.50 - Rs.100 and four mills have EPS above Rs.100.

Dividend Payouts: During the year 1980-81, four private sector mills have declared dividends on equity shares at the following rates:

A - 15%

B - 10%

M - 18%

Q - 12%

3.3.2. Evaluation of profitability of the industry

The median, range and standard deviation of the different

profitability ratios of 22 mills for the year 1980-81 are given in Table-3.9.

TABLE - 3.9

Profitability Ratios for 1980-81

Ratios	Median	Range	Standard deviation
Gross profit margin (%)	13.09	23.44	5.94
Operating profit margin (%)	4.04	40.90	8.68
Return on Capital Employed (%)	20.59	61.98	12.46
Return on Assets (%)	5.15	35.39	8.08
Operating assets turnover (times)	1.09	1.87	-
Gross profit per spindle (Rs)	154.20	256.00	69.86
Operating profit per spindle (Rs)	44.23	570.95	126.73
Earnings per share (Rs)	26.23	522.66	-

Source: Calculated from Annual Reports

There is considerable interfirm variation in profitability in the industry. The rates of operating profit margin show greater variation among mills than the rates of gross profit margin. Similarly, the operating profits per spindle show wider variation among individual mills than the gross profits per spindle. This seems to indicate that the operating profits vary much more than the gross profits as between individual mills, which in turn indicates variation

among mills in respect of interest payments and depreciation charges.

Similarly considerable interfirm variation is noticed in the case of Earnings per share. This variation is due to the different levels of equity investments in individual mills and the different levels of earnings.

The profitability of the industry in Kerala seems to be a little worse than the overall profitability of the mills in South India as revealed by SITRA survey.

TABLE - 3.10

Profitability Ratios of SITRA mills and Kerala mills

Ratios	SITRA MILLS 1977-81	SITRA MILLS* 1980 & 1981	KERALA MILLS 1980-81
Average Return on Capital Employed (%)	29.4	25.10	21.30
Average Gross profit per spindle (Rs)	157.8	153.51	161.02
Average Operating profit per spindle (Rs)	66.0	46.76	28.76

* Weighted average

Source: Annual Reports of Kerala mills and SITRA's 7th Interfirm Comparison Survey Report

Even though the average gross profit per spindle of Kerala mills seems to be higher than the average for the SITRA mills, the

average operating profit per spindle of Kerala mills is only about two-thirds of that of the SITRA mills. This is due to the higher average depreciation and interest per spindle in the case of Kerala mills.

3.3.3. Performance of individual mills

3.3.3.1. The most profitable and the least profitable mills

Eight ratios have been used for measuring the profitability of mills. Leaving out the operating assets turnover ratio, which is strictly not a profitability ratio, in the case of all the other seven ratios, 5 mills are consistently seen to have ratios higher than the median ratio, while 4 mills are consistently seen to have ratios lower than the median ratio. The five most profitable mills, in the order of their profitability, are P, M, A, K and I. The four least profitable mills are C, R, G and U.

It is worth noting that some of the mills which have shown better performance over the 5 year period such as mills H, S, F, B and T have not done well in 1980-81. Similarly, mill K which earned good profits in 1980-81 performed badly over the remaining period and ended up as one of the least profitable mills for the 5 year period.

3.3.3.2. Difference in asset turnover ratios

An interesting shift can be observed in the position of individual mills when comparing their gross profit margins and their

rates of return on capital employed. Five mills, namely, B, F, H, S and W, which were having gross profit margins less than the median value are found to have returns on capital employed higher than the median value. (See Appendix IV and Appendix VI). This upward shift can be explained in terms of their operating assets turnover ratios. All these 5 mills have operating assets turnover ratios higher than the median turnover ratio. In fact, four of them have turnover ratios higher than the third quartile for the industry. (See Appendix VIII).

Similarly, five mills (N, D, O, V and Q) which were having gross profit margins higher than the median value are found to have returns on capital employed less than the median value. This downward shift can also be explained in terms of their operating assets turnover ratios, because all these five mills have turnover ratios lower than the median turnover ratio. In fact, two of them have the lowest turnover ratios.

All the mills which have shifted upwards because of their better asset turnover ratios are private sector mills, while 3 out of the 5 mills which have shifted downwards are public sector units. As a matter of fact, 7 out of the nine public sector units included in this study have asset turnover ratios lower than the median turnover ratio.

3.4. Findings on Profitability

There is wide inter-year variation in the profitability of the industry. Over the period of study, the profitability of the

industry has declined. The year 1980-81 was the most profitable and 1981-82 the least profitable.

There is considerable inter-mill variation in profitability each year. The operating profits vary much more than the gross profits as between mills. The variation in capital employed by the mills is wider than the variation in their sales.

Eight mills, representing one-third of the mills studied, have shown consistently better performance and seven other mills consistently worse performance over the period of study.

During 1980-81, the profitability of the industry in Kerala seems to be lower than that of South Indian mills as a whole. The difference is more pronounced in respect of operating profits due to higher interest and depreciation charges in Kerala mills.

In 1980-81, five mills have succeeded in earning better returns on capital employed in spite of poor gross profit margins on account of their better asset turnover ratios. Five other mills with better gross profit margins have recorded poor returns on capital employed due to their lower asset turnover ratios.

Between 1980-81 and 1984-85 five mills have improved their financial performance in relation to other mills while in the case of one mill its relative performance has worsened during this period.

Profit variability between years and between mills is not peculiar to the cotton mill industry in Kerala. It is a phenomenon

of the Indian cotton mill industry as a whole. "The Indian cotton textile industry has an uneven history of cyclical booms and glooms."[35] "The textile mill industry as a whole is known to be a low profit industry subject to large cyclic fluctuations in its profitability."[36] Moreover, profits in the textile industry are lower than in other industries and also have a declining trend. "On the whole gross profit as a percentage of sales, gross profit as a percentage of capital employed and profit after tax as a percentage of net worth in respect of cotton textile industry are not only lower than those in the other industries but also have declining trend with wide fluctuations."[37]

Kasthuri Sreenivasan, former Director of SITRA, sees profit variability as a malaise affecting the viability of the industry. "The profitability of the textile industry is lower than the average for all industries in the country. It is also obvious that the variation from year to year is also much greater in the textile industry than the others."[38] "So long as the industry has such a wide variation built into it, it is difficult to make it viable as a whole."[39]

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[35] Raj K. Nigam, "Foreword," to P.R. Ojha, Corporate Dividend Policy in Indian Cotton Textile Industry (Allahabad: Kitab Mahal, 1978), p.i.

[36] Garde, Op.cit., p.45.

[37] Ojha, Op.cit., p.10.

[38] Kasthuri Sreenivasan, India's Textile Industry (Coimbatore: The South India Textile Research Association, 1984), p.83.

[39] Ibid., p.90.

"There are a number of heterogenous factors contributing to profit variability and causal relationships are known to exist between these factors and profit. But what is of practical significance is to locate the important factors, isolate their effect and assess the relative contribution of each factor."[40]

In the following chapters of this study, the various factors which contribute to profit variability in the industry will be examined.

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[40] Indra Doraiswamy, "Financial Management" in Management of Cotton Spinning Industry (New Delhi: Management Development Institute, 1976), p.96.

CHAPTER - IV

COST STRUCTURE AND PRODUCTIVITY

"Profits are defined as the difference between a firm's (or an economy's) total revenues and its total costs."[1] Therefore, the profits of a business firm can be increased by reducing its costs or increasing its sales or by both. Conversely, the profits of a business decline when its cost of production rises or the sales fall. Samuelson and Nordhaus ask: "Why do firms care about costs? Clearly they must pay careful attention to costs because every dollar of cost reduces the firm's profits."[2] Therefore, to understand the profit variability among cotton textile mills, it is to the sales volume and cost structure of the mills that one should turn one's attention.

The factors which influence profits in a spinning mill are:

1. Yarn selling price less raw material cost i.e., the net output value.
2. Labour cost determined by labour productivity and wages.
3. Total sales turnover influenced by ring spinning machine productivity.

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[1] Paul A. Samuelson and William D. Nordhaus, Economics 12th ed. (Singapore: McGraw Hill Book Company, 1985), p.660.

[2] Ibid., p.461.

4. 'Other costs' i.e. stores, power, overheads, etc.
5. Pattern of production.[3]

Sales turnover and cost of production are two important variables affecting the profitability of a mill. Cost of production is, in turn, affected by labour productivity and machine productivity. In this chapter, the cost structure and productivity of the cotton mill industry in Kerala will be analysed.

Cost of Production

"The normal concept of cost most widely used is the 'money cost' of production which relates to the money expenditure of a firm on wages and salaries paid to labour, payments incurred on machinery and equipment, payment for materials, power, light, fuel, transportation etc., payments for rents and insurance and payments to the government by way of taxes."[4] However, the total cost of production must include not only the 'money costs' but also non-cash expenditure such as depreciation.

The total cost of producing an article can be analysed into different cost elements. "The total expenditure incidental to produc-

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[3] Indra Doraiswamy, "Financial Management" in Management of Cotton Spinning Industry (New Delhi: Management Development Institute, 1976), pp.96-7.

[4] K.P.M. Sundharam and M.C. Vaish, Principles of Economics 7th ed. (Agra: Ratan Prakashan Mandir, 1968), p.271.

tion, administration, selling and distribution may be analysed . . . as follows:

a. Direct material.

b. Direct wages.

c. Direct expenses (if any).

d. Overhead."[5]

"The first three items constitute prime cost, so that the elements of cost may be said to comprise prime cost and overhead."[6] Overhead includes all indirect expenses. "The main groups into which overhead may be subdivided are the following:

1. Production overhead, including services.
2. Administration overhead.
3. Selling overhead. ⎫
4. Distribution overhead. ⎭ Sometimes combined."[7]

To analyse the cost structure of a firm it, therefore, becomes necessary to classify the total expenditure of the firm into various cost elements such as material cost, labour cost, production or manufacturing overhead, administrative overhead and selling and distribution overhead.

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[5] L.W.J. Owler and J.L. Brown, Wheldon's Cost Accounting and Costing Methods 14th ed. (Plymouth: The English Language Book Society and MacDonald and Evans, 1978), p.7.

[6] Ibid., p.8.

[7] Ibid., p.10.

Classification of Cost

Cost data for the purpose of this study have been collected from the Profit and Loss Accounts forming part of the Annual Reports of the individual mills. The cost of production has been classified into three major components, material, labour and 'other costs'. The 'other costs' represent the overheads and include expenditures on stores and spares, power and fuel, repairs and maintenance, administration and miscellaneous items, and selling and distribution. Further, interest payments and depreciation allowances are classified separately.

The cost data collected from the Profit and Loss Accounts of individual mills are absolute figures expressed in rupees. To carry out comparative analysis of the cost structures of different mills the 'common-size statement' method of analysis has been adopted which consists in expressing each component item of a statement as a percentage of the total of the statement. "In the common-size income statement, the various parts are . . . compared with the whole; that is, the total income from sales is divided into its forms of disposition."[8] In this study each component of cost has been expressed as a percentage of the value of output which is sales plus increase in stock.

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[8] Myer, Op.cit., pp.140-1.

4.1. Analysis of Cost Structure of Spinning Mills

The cost structures of spinning mills and composite mills shall be analysed separately as their cost structures are bound to differ from each other.

4.1.1. Material, Labour and Other costs

The average material costs, labour costs and other costs of 19 spinning mills for the 5 year period 1980-81 to 1984-85 are presented in Table-4.1, along with the median and co-efficient of variation values.

The median value is used to represent the average for the industry. The coefficient of variation is used as a measure of the interfirm variation in cost structure.

> A favorite adaptation of the standard deviation, as used in the textile industry, is the Coefficient of Variation. This is merely the standard deviation divided by the average and expressed as a percent . . . . While the standard deviation is expressed in absolute values, . . . the coefficient of variation is always a relative figure. This makes it a better means of comparison of related data. [9]

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[9] Norbert Lloyd Enrick, Management Control Manual for the Textile Industry (Bombay: Vora & Co., Publishers Pvt. Ltd., 1969), p.234.

TABLE - 4.1

Cost of Production as % of value of output
(Average for 5 years 1980-81 to 1984-85)

Name of mill	Material cost	Labour cost	Other costs
A	46.22	16.95	17.72
B	60.08	15.80	15.61
C	62.25	17.15	14.99
D	56.95	19.05	12.18
E	51.40	24.65	13.98
H	61.20	15.74	13.23
I	55.54	25.31	13.91
J	62.07	33.85	7.97
K	57.34	30.37	13.44
L	59.04	30.59	11.69
M	51.29	13.96	17.42
N	64.37	16.62	10.19
O	54.07	26.32	17.46
P	53.64	19.93	14.77
Q	58.23	13.07	18.88
T	72.10	13.48	7.91
U	57.56	24.77	14.27
V	53.84	30.40	14.71
W	71.07	11.13	14.21
Median	57.56	19.05	14.21
Coefficient of Variation	10.73	32.46	21.05

Source: Calculated from Annual Reports

The median values for the average material costs, labour costs and other costs are 57.56 percent, 19.05 percent and 14.21 percent respectively of the value of output. The Coefficient of Variation values are 10.73, 32.46 and 21.05 for the material costs, labour costs and other costs respectively. The interfirm variation in labour cost is almost three times the variation in material cost; similarly, the interfirm variation in other costs is twice the variation in material cost. This seems to indicate that the interfirm variation in gross profits can be explained to some extent by the variations in labour costs and other costs.

4.1.1.1. Correlation Analysis of Gross Profit Variation

In order to measure statistically the relationship between changes in profits and the changes in various cost components, correlation analysis is used. "When the relationship is of a quantitative nature, the appropriate statistical tool for discovering and measuring the relationship and expressing it in a brief formula is known as correlation."[10]

Pearson's Coefficient of simple correlation, r, has been calculated to analyse the correlation between gross profit margin and each cost component separately. The results are presented in Table-4.2.

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[10] Frederick E. Croxton, Dudley J. Cowden and Sidney Klein, Applied General Statistics 3rd ed. (New Delhi: Prentice-Hall of India Pvt. Ltd., 1979), p.389.

TABLE - 4.2

Correlation Analysis of Gross Profit Variation

Dependent Variable	Independent Variable	r	r^2
Average Gross Profit margin	Average material cost	(-) 0.39	0.15
Average Gross profit margin	Average labour cost	(-) 0.70	0.49
Average gross profit margin	Average other costs	(+) 0.44	0.19

There is no significant correlation between gross profit margins and material costs on the one hand and between gross profit margins and other costs on the other as the correlation coefficients are less than 0.50. However, significant correlation is noticed between gross profit margins and labour costs, as the coefficient of correlation is (-) 0.70 in this case. The correlation is negative which means that as labour cost increases profit margin declines. The coefficient of determination, r^2, has a value of 0.49 which means that 49 percent of the variation in gross profit margins can be explained by the variations in labour costs. Thus labour cost is an important factor contributing to inter-mill variations in gross profits.

4.1.1.2. Cost comparison between Best mills and Worst mills

Eight mills (including 6 spinning mills) which have shown consistently better performance and seven mills (including 5 spinning

mills) which have shown consistently worse performance during the 5 year period have already been identified in Chapter III. A comparison of the cost structures of these two groups of best and worst spinning mills can now be made.

TABLE - 4.3

Cost Structure of Best Spinning Mills

Name of mill	Average Material cost	Average Labour cost	Average Other costs
A	46.22	16.95	17.72
M	51.29	13.96	17.42
H	61.20	15.74	13.23
P	53.64	19.93	14.77
B	60.08	15.80	15.61
T	72.10	13.48	7.91
Overall Average	57.42	15.98	14.44

TABLE - 4.4

Cost Structure of Worst Spinning Mills

Name of mill	Average Material cost	Average Labour cost	Average Other costs
L	59.04	30.59	11.69
V	53.84	30.40	14.71
J	62.07	33.85	7.97
O	54.07	26.32	17.46
K	57.34	30.37	13.44
Overall Average	57.27	30.31	13.05

The overall average material cost of the best spinning mills is 57.42 percent of the value of output; that of the worst spinning mills is 57.27 percent. The overall average labour costs of the best and the worst spinning mills are 15.98 percent and 30.31 percent respectively. The overall average other costs of the best and the worst spinning mills are respectively 14.44 percent and 13.05 percent of the value of output. The cost comparison between the best mills and the worst mills is illustrated in Figure 4.1.

The cost structures of the two groups of best spinning mills and worst spinning mills differ from each other only in respect of the labour cost. The proportions of material cost and other costs in the two groups are more or less the same. But the proportion of labour cost in the group of worst mills is almost double that in the best mills.

Labour cost thus plays a significant role in producing inter-firm variation in profitability. In other words, labour cost is one of the determinants of profit variation among mills.

4.1.2. Interest and Depreciation Charges

Interest payments and depreciation allowances are two items of cost which determine the operating profit of a firm given the quantum of its gross profit, as operating profit is defined as gross profit less interest and depreciation. In Chapter III, it has been observed that operating profits of mills vary widely. An analysis of interest and depreciation charges of the spinning mills should throw light on the intermill variation in operating profits.

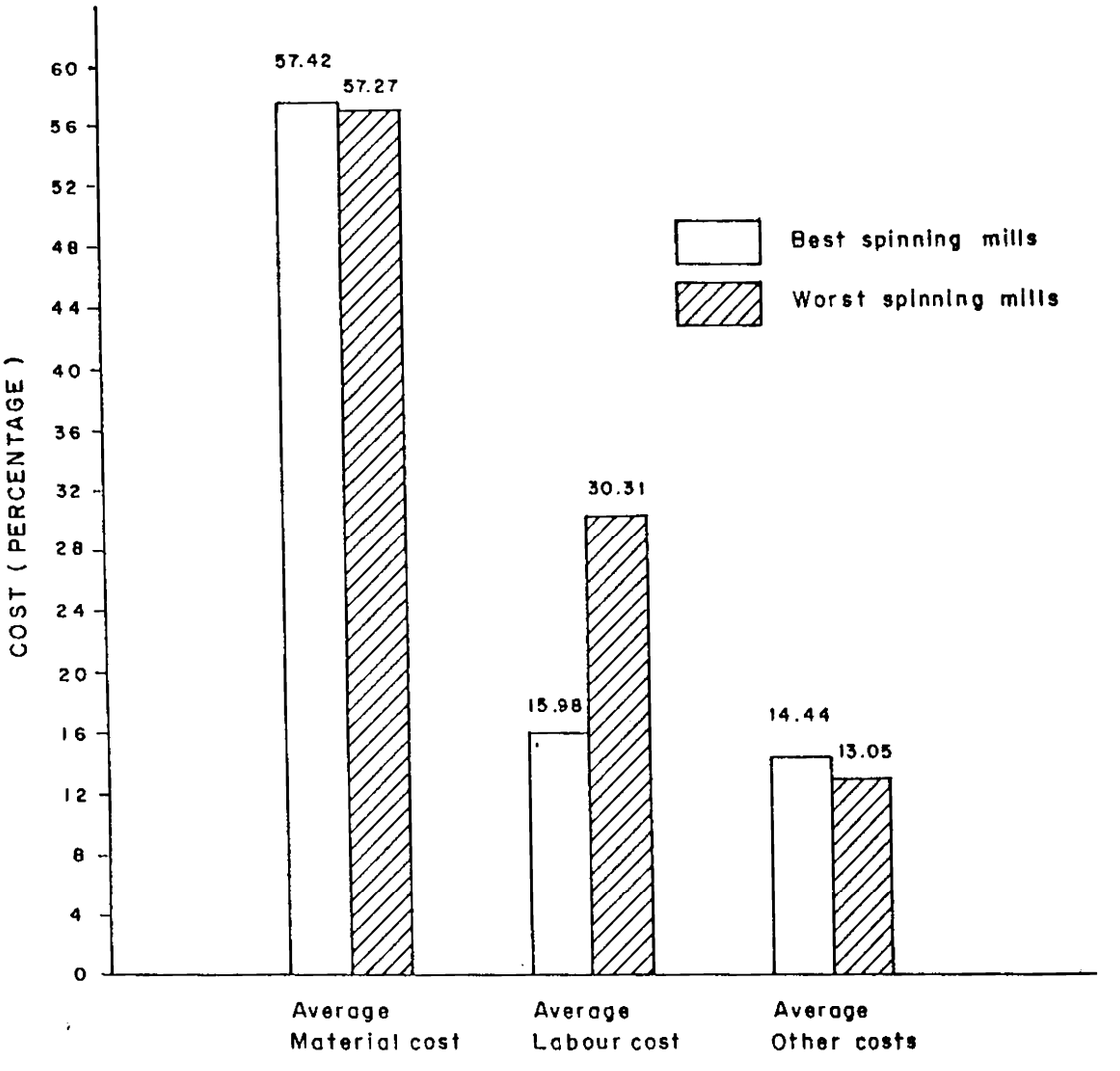

Fig. 4.1 THE AVERAGE COST OF PRODUCTION 1980-81 TO 1984-85

Table-4.5 gives the average interest payments and depreciation charges for the 5 year period of study as percentages of the value of output for 19 spinning mills, along with the median and coefficient of variation values.

TABLE - 4.5

Interest and Depreciation as % of value of output

(Average for 5 years 1980-81 to 1984-85)

Name of mill	Interest	Depreciation
A	5.22	6.77
B	7.14	5.24
C	8.82	3.69
D	13.88	8.36
E	13.15	8.25
H	4.81	6.02
I	5.74	4.98
J	1.61	3.98
K	5.06	1.36
L	7.86	2.67
M	4.78	7.48
N	13.25	11.76
O	9.45	4.32
P	4.60	4.49
Q	9.38	7.68
T	7.86	2.28
U	3.64	3.78
V	8.58	7.24
W	6.17	2.21
Median	7.14	4.98
Coefficient of variation	44.20	47.59

Source: Calculated from Annual Reports

The median value for the average interest payments of mills is 7.14 percent of the value of output, with a coefficient of variation of 44.20. The median value for the average depreciation allowances of mills is 4.98 percent of the value of output, the coefficient of variation being 47.59. As revealed by the coefficient of variation values, the extent of inter-mill variation in interest payments and depreciation charges is more or less the same.

4.1.2.1. Correlation Analysis of Operating Profit Variation

To understand how far the variations in operating profit among mills can be explained in terms of the variations in interest and depreciation, correlation analysis is necessary.

Pearson's coefficient of simple correlation is calculated for operating profit margins and interest payments and for operating profit margins and depreciation charges separately. The results are presented in Table-4.6.

TABLE - 4.6

Correlation Analysis of Operating Profit Variation

Dependent variable	Independent variable	r	r^2
Average operating profit margin	Average interest payment	(-) 0.50	0.25
Average operating profit margin	Average depreciation allowance	(-) 0.25	0.06

It can be seen from the results that there is moderate correlation between interest payments and operating profit margins while there is only negligible correlation between depreciation allowances and operating profit margins. It means that variations in depreciation allowances do not account for the inter-mill variations in operating profits; but variations in interest payments influence the variations in operating profits. However, variations in interest payments explain only 25 percent of the variations in operating profits.

Operating profit obviously depends on the quantum of gross profit. Multiple correlation analysis can be used to see how much of the variation in operating profits is explained by variations in gross profits and interest payments jointly.

Operating profit margins have been taken as the dependent variable (X_1), gross profit margins as the first independent variable (X_2) and interest payments expressed as percentages of value of output as the second independent variable (X_3). The result of the analysis is presented below.

The regression equation:

$$X_{c1.23} = (-)1.49\ (+)0.57\ X_2 (-)1.17\ X_3$$

Regression coefficients:

$$b_{12.3} = (+)0.57$$

$$b_{13.2} = (-)1.17$$

Coefficient of multiple determination:

$$R^2_{1.23} = 0.53$$

Coefficient of multiple correlation:

$$R_{1.23} = 0.73$$

For a change of one unit in gross profit margin there is a positive change of 0.57 in operating profit margin: for a change of one unit in interest payment, there is a negative change of 1.17 in operating profit margin. The correlation between operating profit margins on the one hand and gross profit margins and interest payments on the other is significant. 53 percent of variations in operating profit margins is explained by the variations in gross profit margins and interest payments.

Thus interest cost is a factor which contributes to variations in operating profits among mills.

4.1.2.2. Interest and Depreciation in Best and Worst Mills

It would be enlightening to see whether the best spinning mills and the worst spinning mills differ in respect of interest cost and depreciation allowance. A comparison is presented in Tables-4.7 and 4.8.

TABLE - 4.7

Interest and Depreciation of Best Spinning Mills

Name of mill	Average Interest Cost	Average Depreciation Allowance
A	5.22	6.77
M	4.78	7.48
H	4.81	6.02
P	4.60	4.49
B	7.14	5.24
T	7.86	2.28
Overall Average	5.74	5.38

TABLE - 4.8

Interest and Depreciation of Worst Spinning Mills

Name of mill	Average Interest Cost	Average Depreciation Allowance
L	7.86	2.67
V	8.58	7.24
J	1.61	3.98
O	9.45	4.32
K	5.06	1.36
Overall Average	6.51	3.91

The overall average interest cost for the worst spinning mills is higher than that for the best spinning mills. But, in the case of depreciation allowance, the overall average is higher for the group of best spinning mills. This is probably due to the fact that the best mills provide more depreciation on account of their continuing modernisation.

4.1.3. Cost Comparison between Kerala mills and SITRA mills

Cost data for SITRA mills are not available for the period of this study, 1980-81 to 1984-85. However, various components of the cost of production expressed as percentages of the yarn sales revenue and averaged for the 5 year period from 1977 to 1981 are available for the SITRA mills.[11] They are presented in Table-4.9 along with cost components for Kerala mills expressed as percentages of the value of output and averaged for the 5 year period 1980-81 to 1984-85.

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[11] Doraiswamy, Financial Performance in Boom and Recession, p.10.

TABLE - 4.9

Average Cost of Production for Spinning Mills in Kerala (1980-81 to 1984-85) and in SITRA Survey (1977-81)

Type of mill	As % of sales value/value of output				
	Material cost	Wages	Other costs	Interest	Depre-ciation
SITRA mills	58.2	14.0	15.1	3.7	2.9
Kerala mills	58.33	21.01	13.92	7.42	5.40

Source : Annual Reports of Kerala mills and 7th Interfirm Comparison Survey Report of SITRA

Material cost and 'other costs' are more or less the same for the mills in Kerala as well as the mills included in SITRA survey. However, the labour cost of SITRA mills is only about two-thirds of the labour cost of Kerala mills. But it may be noted that the data for the SITRA mills are for the period 1977-81, while the data for the Kerala mills are for the period 1980-81 to 1984-85. The higher labour cost for the Kerala mills may be partly due to the fact that the data are for a later period and may be a reflection of the increase in wage rates over time.

Incidentally, the textile mill workers in Tamil Nadu are being paid better wages than in the other textile centres of the country. "A worker in Tamil Nadu is today the highest paid cotton textile

worker."[12] The minimum monthly earnings of the lowest-paid operative in cotton textile mills during 1982 was Rs.724.80 in Tamil Nadu, while it was only Rs.700.54 in Bombay, Rs.677.20 in Ahmedabad, Rs. 584.88 in West Bengal, Rs.643.01 in Bhavnagar and Rs.639.56 in Kanpur.[13] The fact that the labour cost of textile mills in Kerala is higher than that of SITRA mills is an indication that textile wages in Kerala are quite high even on a country-wide comparison.

As in the case of mills in Kerala, there is wide interfirm variation in labour cost in the case of SITRA mills too. "The inter-mill differences in wages cost continue to be high and vary from 7% to 30%."[14] Moreover, labour cost is seen to have a significant influence on profits of mills. "It is noticed that mills which were able to maintain wages cost at 12% and less did not generally incur losses even in recession. As against this, mills with wages cost of 18% and above invariably could not make profits even during normal trading conditions or at best earned only very nominal profits."[15]

Interest cost and depreciation allowance of mills in Kerala are almost double that of SITRA mills. The higher interest cost for Kerala mills may be partly due to the increase in interest rates

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[12] Sreenivasan, Op.cit., p.161.

[13] The Indian Cotton Mills' Federation, Op.cit., p.78.

[14] Doraiswamy, Financial Performance in Boom and Recession, p.8.

[15] Ibid.

over time as the data for Kerala mills are for a later period. Similarly, the higher depreciation allowance for Kerala mills may be partly due to the difference in age of the mills in Kerala and the SITRA mills.

4.2. Cost Structure of Composite Mills

In Kerala there are only 5 composite mills out of a total of 27 textile mills. Among the 23 mills included in this study, 4 are composite mills. Since the number of composite mills is so small, there is no scope for detailed analysis of their cost structure. In Table 4.10 each component of cost expressed as a percentage of the value of output and averaged for the 5 year period 1980-81 to 1984-85 for the 4 composite mills is presented.

TABLE - 4.10

Cost of Production of Composite Mills as % of Value of Output (Average for 5 years 1980-81 to 1984-85)

Name of mill	Material cost	Labour cost	Other costs	Interest	Depre-ciation
S	48.85	24.95	17.51	4.38	3.93
F	45.68	21.98	23.76	4.30	4.67
G	46.06	30.99	28.22	12.24	3.88
R	44.50	25.63	28.13	13.16	10.19
Overall Average	46.27	25.89	24.41	8.52	5.67
Overall Average for spinning mills	58.33	21.01	13.92	7.42	5.40

Source: Calculated from Annual Reports

The overall average cost percentages of spinning mills are also presented in the above table. For composite mills material cost forms a lower proportion of the total value of output than for spinning mills. All other cost components as percentages of the value of output are higher for the composite mills.

4.2.1. Structure of Composite Mills in SITRA Survey

In the SITRA survey of South Indian mills a comparison is made between the cost structures of spinning mills and composite mills. The results are similar to what we have observed above in the case of mills in Kerala. "With regard to various items of cost, composite mills compare favourably with spinning mills in the raw material cost which is 8% lower than that in spinning mills. On the other hand, all the other major cost items are higher in composite mills . . . . However, depreciation amounts are found to be lower for composite mills than for spinning mills and this could result from the difference in the average age between composite and spinning mills. In contrast, the interest paid is somewhat more in the case of composite mills because of the higher working capital employed."[16]

The average cost of production as percentages of sales value of spinning and composite mills included in the SITRA survey for the period 1977-81 is presented in Table-4.11.

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[16] Ibid., p.9.

TABLE - 4.11

Average Cost of Production (1977-81) for SITRA Mills

Type of mill	As % of Sales value				
	Materials	Wages	Other costs	Interest	Depre-ciation
Spinning mills	58.2	14.0	15.1	3.7	2.9
Composite mills	50.1	20.7	22.6	4.5	2.1
Overall Average	56.5	15.4	16.6	3.9	2.7

Source: 7th Interfirm Comparison Survey Report of SITRA

Comparing the cost percentages of composite mills in Kerala and those included in SITRA survey, it can be observed that the cost percentages for the Kerala mills are higher except in the case of material cost which is about 4 percent less for the mills in Kerala.

4.3. Analysis of Sales Volume

Cost of production and sales turnover are two sides of the same coin - profit. In the preceding two sections, the cost structure has been analysed in detail. In this section, sales volume will be analysed. However, the analysis will be confined to spinning mills alone as the number of composite mills in the study is only 4. The analysis is carried out for the 3 year period, 1982-83 to 1984-85, because the necessary detailed data are available only for these 3 years. Moreover, 3 spinning mills are not included in the

analysis - mills D and E for want of data and mill C because it spins entirely synthetic yarn.

The sales turnover plus/minus the increase/decrease in stock of finished goods is the total value of output of a firm. The annual values of output of different mills are obviously different. While analysing the cost structure, by adopting the common-size method of analysis, the values of output of different mills were reduced to a common size, namely, 100 percent. Now the absolute values of output of the spinning mills included in the study shall be analysed.

"Production is any process or procedure designed to transform a set of input elements into a specified set of output elements . . . . A production system can be broken down into the three component parts of inputs, outputs and process."[17] Thus output is a function of inputs and the production process. "Basically, materials, labour and energy constitute the input. Plant and facilities make up the process."[18]

In a spinning mill, spindles are the major item of plant engaged in the production process and the production capacity of a spinning mill is stated in terms of spindles. Therefore, to make interfirm comparison of the values of output of spinning mills, it would be meaningful to state the output values per installed spindle in each mill.

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[17] Martin K. Starr, Production Management: Systems and Synthesis 2nd ed. (New Delhi: Printice-Hall of India Pvt. Ltd., 1976), p.24.

[18] Ibid., p.27.

In Table-4.12 are presented the average values of output per installed spindle for the 3 year period 1982-83 to 1984-85 for 16 spinning mills. The arithmetic mean and the coefficient of variation of the values are also calculated.

TABLE - 4.12

Output per Installed Spindle

(Average for 3 years 1982-83 to 1984-85)

Name of mill	Output per spindle (Rs.)
A	1112
B	1845
H	2285
I	1204
J	1025
K	885
L	1137
M	1863
N	1651
O	931
P	1014
Q	2093
T	2601
U	761
V	829
W	2266
Mean = 1469	Coefficient of Variation = 40.11

Source: Calculated from Annual Reports

The average per spindle output values of individual mills vary between a maximum of Rs.2601 and a minimum of Rs.761. The arithmetic mean of the values in Rs.1469 and the Coefficient of variation is 40.11.

The average sales value per spindle in rupees of the spinning mills included in SITRA survey are available for 5 years from 1977 to 1981.

TABLE - 4.13

Sales Value per Spindle of SITRA Spinning Mills (1977-1981)

Years	Average sales value per spindle (Rs)
1977	1209
1978	1324
1979	1336
1980	1449
1981	1449
Overall Average	1353

Source: 7th Interfirm Comparison Survey Report of SITRA

The sales value has increased from Rs.1209 to Rs.1449 over the 5 year period, probably due to increase in selling price of yarn over time. The higher average value of output per spindle of Rs.1469 recorded for the mills in Kerala for the later period 1982-83 to 1984-85 is also probably due to increase in selling price of yarn.

The inter-mill variation in output values of mills in Kerala is rather extensive. It should be enlightening to analyse the reasons for such extensive variation in output values. The value of output is determined by the quantity of production and the price realised per unit of output. It is to be examined which of these two factors account for the variations observed in the output values of different mills.

4.3.1. Analysis of Production

The output of a spinning mill is yarn. The production of yarn of a mill is measured in kilograms. The average production of yarn per spindle for the 3 year period 1982-83 to 1984-85 for 16 spinning mills is given in Table-4.14, along with their mean and coefficient of variation values.

TABLE 4.14

Production of yarn per spindle

(Average for 3 years 1982-83 to 1984-85)

Name of mill	Production of yarn per spindle (Kgs)
A	22.888
B	44.021
H	78.278
I	34.361
J	37.088
K	25.894
L	39.360
M	43.334
N	52.768
O	24.229
P	26.718
Q	49.840
T	61.981
U	22.545
V	19.014
W	68.802
Mean = 40.695	Coefficient of Variation = 42.38

Source: Calculated from Annual Reports

The average production per spindle varies between 78.278 and 19.014 kgs. The mean value is 40.695 kg and the coefficient of variation value is 42.38.

The quantum of production per spindle exhibits wide inter-mill variation. That can be taken as an indication that the quantity of production is a factor contributing to the variations in output values.

The quantity of production of a mill depends on two factors: (a) the production rate and (b) the spindle utilisation. The spindles installed in a spinning mill are normally worked on three shifts of 8 hour duration each. The production rate or machine productivity of a mill is measured in terms of the quantity of production per spindleshift. All the spindles installed in a mill are seldom used to the maximum capacity. Lower spindle utilisation reduces quantity of output. Thus variations in the quantity of production per spindle may be due to inter-mill variations in production rate (machine productivity) or spindle utilisation (machine utilisation), or both. The inter-mill variations in both machine productivity and machine utilisation shall be analysed to assess the contribution of each factor to the variations in output values.

Table-4.15 gives the average production per spindleshift measured in grams and the average spindle utilisation measured as a percentage of installed spindles for the 3 year period 1982-83 to 1984-85 for each of the 16 spinning mills. The mean and coefficient of variation values of both the variables are also calculated.

TABLE - 4.15

Production per Spindleshift and Spindle Utilisation

(Average for three years 1982-83 to 1984-85)

Name of mill	Production per spindleshift (gms)	Spindle utilisation (%)
A	33	72.07
B	53	79.00
H	98	81.24
I	47	77.09
J	83	40.67
K	52	77.80
L	68	69.99
M	55	92.53
N	77	67.02
O	33	72.75
P	36	72.14
Q	69	83.41
T	69	79.84
U	32	59.21
V	27	70.82
W	102	73.90
Mean	58.38	73.09
Coefficient of variation	39.31	15.17

Source: Calculated from primary data collected from mills

Production of yarn per spindleshift varies between 102 and 27 grams for the different mills; the spindle utilisation varies between 92.53 percent and 40.67 percent. The coefficient of variation

value for production per spindleshift is 39.31 which is almost equal to the coefficient of variation values for output per spindle and production per spindle. But the coefficient of variation value for spindle utilisation is much less, namely, 15.17.

From the foregoing analysis, it is clear that corresponding to the interfirm variations in output values, there is as much interfirm variation in machine productivity and a lesser degree of interfirm variation in machine utilisation. It may, therefore, be stated that both machine productivity and machine utilisation are contributory factors to output value variations. The extent of contribution of each factor can be measured statistically by applying the correlation analysis.

The simple correlation coefficients have been calculated between: (i) output values per spindle and production per spindleshift, (ii) output values per spindle and spindle utilisation. The results are given below:

TABLE - 4.16

Correlation Coefficients between Output Values, Production and Spindle Utilisation

Dependent Variable	Independent Variable	r	r^2
Output value per spindle	Production per spindleshift	(+) 0.69	0.48
Output value per spindle	Spindle utilisation	(+) 0.52	0.27

There is significant correlation between output values per spindle on the one hand and production per spindleshift and spindle utilisation on the other. Variations in production per spindleshift explain 48 percent of the variations in output values of different mills. Variations in spindle utilisation among mills account for 27 percent of output value variations.

A multiple correlation analysis would highlight the relationship between these three variables much more clearly.

Such an analysis has been carried out by taking output value per spindle as the dependent variable (X_1), production per spindleshift as the first independent variable (X_2) and spindle utilisation as the second independent variable (X_3). The result of the analysis is presented below:

The Regression equation:

$$X_{c1.23} = (-)1653.05 \ (+)\ 18.16\ X_2\ (+)\ 28.21\ X_3$$

Regression coefficients:

$$b_{12.3} = 18.16$$

$$b_{13.2} = 28.21$$

Coefficient of multiple determination:

$$R^2_{1.23} = 0.76$$

Coefficient of multiple correlation:

$$R_{1.23} = 0.87$$

The multiple correlation analysis reveals a highly significant correlation between output values on the one hand and production per spindleshift and spindle utilisation on the other. Both the latter factors together account for 76 percent of variations in output values of different mills.

4.3.2. Analysis of Price

Yarn which is the output of a spinning mill is not a uniform product. There are different types of yarn such as coarse, medium or fine depending on the 'count' of the yarn. Thus different mills may produce yarns of different counts such as 20s, 40s, 60s, 80s etc; or the same mill may produce a combination of different counts of yarn.

The prices realised by the spinning mills on sale of the yarn produced by them can now be analysed. The actual selling prices of yarn are not available. However, the value of output per kg of yarn produced can be calculated and used as a measure of price realisation on sale of yarn.

In Table-4.17 three variables are presented, namely, the average value of output per kg of yarn, the average count of yarn produced, and the average production per spindleshift, for the 3 year period 1982-83 to 1984-85 for 16 spinning mills. The mean and coefficient of variation values for the three variables are also calculated.

TABLE - 4.17

Value of output per kg of yarn, Count of yarn and Production of yarn per spindleshift

(Average for 3 years 1982-83 to 1984-85)

Name of mill	Value of output per kg of yarn (Rs)	Count of yarn	Production per spindleshift (Grams)
A	48.39	77.37	33
B	41.41	56.67	53
H	29.01	32.10	98
I	35.11	52.46	47
J	27.61	26.99	83
K	33.69	53.97	52
L	28.80	40.17	68
M	42.90	68.55	55
N	31.10	38.56	77
O	38.87	69.23	33
P	38.13	65.95	36
Q	41.80	56.27	69
T	33.49	46.07	69
U	33.97	54.75	32
V	43.81	72.00	27
W	30.08	38.12	102
Mean	36.14	53.08	58.38
Coefficient of variation	16.71	27.51	39.31

Source: Calculated from Annual Reports and primary data collected from mills

The three variables exhibit different degrees of variation as revealed by their coefficient of variation values. But there is a certain pattern in their variations which can be easily highlighted through a correlation analysis.

The coefficient of correlation between average count and value of output per kg of yarn is (+) 0.92. This indicates a very close relationship between price realisation and the yarn count. Higher counts of yarn secure higher prices. The same trend has been observed in a Survey on Spinning Costs carried out by SITRA wherein the yarn selling prices in rupees per kg for different counts are given.[19]

The coefficient of correlation between average count and production per spindleshift is (-) 0.85. This indicates a very significant negative relationship between production and the yarn count. The finer the count, the lower the production per spindleshift. Thus a mill which spins finer counts is likely to secure lower production per spindleshift but higher price per kg of yarn sold, compared to a mill which spins medium or coarse counts of yarn.

Price realisation on sale of yarn is one of the two factors which, along with the quantity of production of yarn, determine the total value of output of a spinning mill. It can be measured through a correlation analysis how much of the variation in output values

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[19] Indra Doraiswamy and C.P. Ramaswamy, A Survey on Spinning Costs (Coimbatore: The South India Textile Research Association, 1986), pp.5-6 and 8.

is due to variations in price realisation of different mills. The coefficient of correlation between output values per spindle and output values per kg of yarn produced is (-)0.15. It means that there is no correlation between price realisation on sale of yarn and the value of output of a mill. Thus, even though finer counts of yarn secure higher prices, such differences in price realisations do not contribute to variations in the total values of output of different mills.

The inter-mill variation in output values is a function of machine productivity and machine utilisation, the selling price of yarn and the pattern of production of yarn have no influence on output value variations.

4.3.3. Relation between labour productivity and output

Spinning of yarn is a production process. Every production process has inputs and outputs. "An input or factor of production is a commodity or service used by firms in their production processes. Inputs are combined to produce outputs."[20] "In general, inputs fall into three groups: land and natural resources, labour and capital."[21] Capital consists of machines used for production. "Labour consists of the human time spent in production."[22]

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[20] Samuelson and Nordhaus, Op.cit., p.25.

[21] Ibid.

[22] Ibid.

The output of a production process is determined by the productivities of the factors of production. For a spinning mill, capital and labour are the two important factors of production. It has already been observed that the values of output of spinning mills depend on their machine productivity. Now the relationship between their labour productivity and output values should be examined. Labour productivity of a spinning mill has been measured by expressing the quantity of production of yarn per rupee of wages.

Table-4.18 gives the production of yarn (in grams) per rupee of wages for 16 spinning mills, averaged for the 3 year period 1982-83 to 1984-85.

TABLE - 4.18

Production of Yarn per Rupee of Wages

(Average for 3 years 1982-83 to 1984-85)

Name of mill	Production of yarn (Grams) per rupee of wages
A	124
B	142
H	230
I	107
J	101
K	98
L	106
M	173
N	156
O	93
P	123
Q	190
T	176
U	107
V	72
W	279

Mean = 142 Coefficient of variation = 37.96

Source : Calculated from Annual Reports

The correlation coefficient between the average values of output per spindle and the average production of yarn (in grams) per rupee of wages has been worked out. The correlation coefficient

'r' is found to be (+)0.87 and the coefficient of determination is 0.76.

Output values of spinning mills are thus seen to have a very significant correlation with labour productivity. Higher labour productivity contributes to higher output values. Thus variations in output values of different mills are the result of different levels of machine productivity, machine utilisation and labour productivcity. "Factors usually do not work alone . . . . In other words, the quantity of a good produced depends jointly upon all the available inputs."[23]

4.3.4. Relation between variations in output values and profitability

Variations do exist among mills in their total output values. How are these variations related to their profitability? Do mills with higher output values earn higher profit margins and returns? A correlation analysis will provide the answer.

Two correlation coefficients have been worked out; the first between average output values per spindle and average gross profit margins and the second between average output values per spindle and average returns on assets. The first coefficient should reveal the relation between output and profitability on sales while the second coefficient should reveal the relation between output and profitability on investment.

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[23] Ibid., p.579.

The results of the correlation analysis carried out for all the 19 spinning mills with the 5-year period averages are presented below. Five-year averages have been used because profitability ratios have been worked out in Chapter III for the 5-year period.

TABLE - 4.19

Correlation between output values and profitability ratios

Dependent variable	Independent variable	r	r^2
Average gross profit margin (%)	Average output value per spindle (Rs)	(+)0.10	0.01
Average return on assets (%)	Average output value per spindle (Rs)	(+)0.23	0.05

There seems to be no association between variations in output values and variations in profitability ratios. In other words, the inter-mill variations in profitability are not related to the variations of output values of mills. It means that output values, as such, are not the real determinants of profitability.

The same output may be produced with different values of raw materials. Hence, the determining factor, as regards profitability is concerned, is not the value of output as such but rather the net output value or the gross value added which is value of output minus the cost of raw materials. Therefore, what is to be examined is the relationship between profitability ratios - gross profit margins

and returns on assets - and the gross values added per spindle (i.e. net output values per spindle) instead of the gross output values per spindle.

The gross value added per spindle, averaged for the 5 year period 1980-81 to 1984-85, of 16 spinning mills are presented in Table-4.20.

TABLE - 4.20

Gross Value Added per Spindle
(Average for 5 years 1980-81 to 1984-85)

Name of mill	Gross value added per spindle (Rs)
A	602
B	708
H	754
I	547
J	403
K	400
L	474
M	789
N	543
O	428
P	487
Q	729
T	612
U	367
V	380
W	602
Mean = 552	Coefficient of Variation = 24.65

Source: Calculated from Annual Reports

A correlation analysis is carried out between gross value added per spindle and the profitability ratios with the 5 year averages for 16 spinning mills, i.e. excluding 3 mills, so as to make the results more accurate. Mill C is excluded because it spins entirely synthetic yarn; mills D and E are excluded because only two years' data are available in their case. The results of the analysis are presented below.

TABLE - 4.21

Correlation between gross value added and profitability ratios

Dependent variable	Independent variable	r	r^2
Average gross profit margin (%)	Average gross value added per spindle (Rs)	(+)0.70	0.49
Average return on assets (%)	Average gross value added per spindle (Rs)	(+)0.63	0.40

Here there is a significant positive correlation between variations in profitability ratios and variations in gross value added per spindle. In fact 49 percent of the variations in gross profit margins and 40 percent of the variations in return on assets are explained by the variations in gross value added per spindle. What it signifies is that it is not enough to generate higher output values per spindle, the output should be generated with lesser material cost. Therefore, one of the important factors which determine the

profitability of a spinning mill is the gross value added per spindle or, in other words, the net output value per spindle.

4.4. Summary of Findings

In this chapter, the cost of production and the value of output of cotton textile mills in Kerala were analysed with a view to identifying the factors which contribute to inter-mill variations in profitability.

4.4.1. Cost of Production of Spinning Mills

Costs have been classified primarily into 3 components, material cost, labour cost and other costs. Of these, labour cost is seen to have significant negative correlation [r = (-) 0.70] with gross profit margins. Material cost and other costs have no significant correlation with gross profit margins.

The average labour cost of the worst performers among spinning mills is almost double that of the best performers. Material cost and other costs of the two groups show no difference.

Even though both interest payments and depreciation allowances are deducted from gross profit in arriving at the operating profit, there is some correlation [r = (-)0.50] only between interest payments and operating profit margins. There is no correlation between operating profit margins and depreciation allowances. Fifty three percent

of the variations in operating profit margins is explained by variations in gross profit margins and interest payments.

SITRA survey data for 1977-81 and Kerala mill data for 1980-81 to 1984-85 are compared. Material costs and other costs for both groups of mills are the same. But labour costs, interest payments and depreciation allowances are found to be higher for the Kerala mills.

4.4.2. Cost of Production of Composite Mills

In the case of composite mills, their material cost is lower than that of the spinning mills, while all the other costs are higher than the corresponding figures for the spinning mills.

4.4.3. Value of Output of Spinning Mills

There is rather extensive inter-mill variation in the total values of output. The value of output of a mill is determined by the quantity of production and the price realised per unit of output.

Selling price of yarn depends on its 'count'. There is a positive correlation ($r = 0.92$) between price realisation and count of yarn produced. At the same time, there is a negative correlation [$r = (-)0.85$] between the count produced and production per spindle-shift. In other words, finer counts secure higher prices but record lower production. However, there is no significant correlation between price realisation and the value of output of mills.

Quantity of production and value of output seem to be correlated. The quantity of production is determined by: (i) machine productivity and (ii) machine utilisation. Both machine productivity and machine utilisation are correlated to values of output, the correlation coefficients being (+)0.69 and (+)0.52 respectively. The multiple correlation analysis of the three factors gives a correlation coefficient of 0.87.

The values of output of spinning mills are also seen to be correlated to labour productivity measures [r = (+)0.87].

However, output values and profitability ratios do not seem to be correlated. There seems to be no association between the variations in output values and the variations in profitability ratios. But there is significant positive correlation between gross value added per spindle (i.e. the net output value per spindle) and the profitability ratios, the correlation coefficients being (+)0.70 in the case of gross profit margins and (+)0.63 in the case of return on assets percentages.

From the analysis in this chapter some of the important factors which account for the inter-mill variations in profitability have been identified. Labour cost, interest payments and gross value added are three important determinants of profits of a mill. Machine productivity, machine utilisation and labour productivity are the three factors which determine the value of output of a mill which in turn influences the gross value added (i.e. the net output value).

The findings of this study correspond with some of the findings of an earlier study by SITRA. "The labour cost expressed as a percentage of the sales turnover . . . . is the single largest factor influencing profit variability accounting for over 50% of the difference in profit margin . . . . Statistical analysis of the data of all mills confirmed the high association between wages and profits, the correlation coefficient being 0.84."[24]

"The 'other costs' such as stores, power, overheads were found to be not related to profits."[25] "The raw material cost . . . is about the same in high and low profit mills."[26]

"The differences in counts and types of yarn spun between mills did not have much effect on the differences in profits."[27]

"The machine productivity is also a major factor influencing profits . . . . The machine productivity which is determined by machine utilisation and production per spindle is highly correlated with profit per spindle (r = 0.83)."[28]

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[24] Indra Doraiswamy, "Financial Management" in Management of Cotton Spinning Industry (New Delhi: Management Development Institute, 1976), p.98.

[25] Ibid., p.100.

[26] Ibid., p.99.

[27] Ibid., p.97.

[28] Ibid., p.99.

CHAPTER - V

ASSET STRUCTURE

In Chapter IV it was seen that the values of output of individual spinning mills differ. Similarly, individual spinning mills operate with different levels of assets. In this Chapter an analysis of the investment in operating assets of the spinning mills is carried out.

5.1.1. Types of Assets

"Basically assets are of two types . . . . The two broad classes of assets are designated respectively fixed assets and current assets. The essential distinction between these two classes is based on the purpose for which the particular investment is made. If it is intended that the asset acquired shall be used in the business permanently or at least until its value is extinguished, then it is regarded as a fixed asset. Where, on the other hand, an asset is acquired with the intention of selling it either in its present form or after subjecting it to some process of manufacture it is regarded as a current asset."[1]

There are some assets which do not fall into either of these classes. One such group of assets is referred to as Intangible assets.

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[1] Magee C.C., Financial Accounting and Control (London: George Allen and Unwin Ltd., 1968), p.61.

These are assets which have no physical form but appear in the balance sheet at cost or at an arbitrary value. "In finance and accounting . . . . the term intangible is limited to three chief items, goodwill, patents and organization expense, with occasionally some item of an allied nature. When these intangible assets are found in the balance sheet, the accepted practice is to eliminate them, partly for reasons of conservatism and partly so as to make figures comparable."[2]

"Another class of assets which is sometimes regarded as a problem is investments in outside companies . . . . They are often referred to as trade investments."[3] "Occasionally a concern will have sums invested in stocks and bonds of other concerns . . . . Any analysis of finances will distinguish and treat separately such items when they are of more than nominal amount."[4]

A firm needs to invest both in fixed assets and current assets. Fixed assets represent the production facilities necessary to carry on the production process. "The current assets are cash, temporary investments which are readily convertible into cash, receivables created by the sale of merchandise, merchandise, and advances on

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[2] Bion B. Howard and Miller Upton, Introduction to Business Finance (New York: McGraw-Hill Book Company Inc., 1953), p.74.

[3] Magee, Op.cit., pp.63-64.

[4] Howard and Upton, Op.cit., p.73.

merchandise."[5] "It is from these items that funds are provided, day in and day out, to meet maturing obligations whether for wages, the payment of merchandise, insurance, rent, taxes or interest."[6]

Thus both fixed assets and current assets are required for operating a firm. They may, therefore, be termed as the operating assets of a firm.

5.1.2. Current Assets Policy

The relative proportion of investment in fixed assets and current assets is a factor affecting the profitability of a concern.

> A firm needs fixed and current assets to support a particular level of output. However, to support the same level of output, the firm can have different levels of current assets . . . . The level of current assets can be measured by relating current assets to fixed assets. Dividing current assets by fixed assets gives the CA/FA ratio. Assuming a constant level of fixed assets, a higher CA/FA ratio indicates a conservative current assets policy and a lower CA/FA ratio means an aggressive current assets policy . . . . These policies have different risk-return implications. A conservative policy means lower return and risk, while an aggressive policy produces higher return and risk.[7]

5.1.3. Asset turnover

A firm's investment in fixed assets and current assets should

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[5] Roy A. Foulke, Practical Financial Statement Analysis, 6th ed. (New Delhi: Tata McGraw-Hill Publishing Co. Ltd., 1972), p.71.

[6] Ibid., p.72.

[7] I.M. Pandey, Financial Management 2nd ed. (New Delhi: Vikas Publishing House Pvt. Ltd., 1981), pp.335-7.

be sufficient to sustain a high level of sales turnover. Moreover, the investment should be utilised efficiently to produce high turnover. The adequacy of investment in assets and its effective utilisation can be measured by relating the investment to sales achieved. "A . . . test of efficiency in the utilization of asset commitments is the 'operating asset turnover', which divides the average investment in total operating assets over the year into the net sales figure for the year."[8] Efficiency in the utilisation of fixed assets and current assets may be tested separately by calculating two turnover ratios: fixed assets turnover ratio and current assets turnover ratio.

"Ordinarily a deficient turnover is looked upon as evidence of excessive asset investment. It may result from an inadequate investment in assets, on the other hand, that is reflected in deficient sales."[9]

5.1.4. Caution in Comparison of Fixed Assets

Comparison of the asset structure, especially fixed assets, of different firms calls for caution. "The assets shown in a balance sheet are largely unexpired or unamortized costs. The balance sheet does not usually show the market value of assets."[10] The value of fixed assets shown in a balance sheet is arrived at by deducting depreciation from the original cost of the assets. Therefore, the

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[8] Howard and Upton, Op.cit., p.140.

[9] Ibid.

[10] Myer, Op.cit., p.24.

balance sheet value of fixed assets depends upon the price prevailing at the time of their acquisition. Differences between firms in the balance sheet value of fixed assets will be partly a reflection of the change in the price level of fixed assets over time and may not represent fully genuine differences in investment between firms. "The fact that companies have fixed capital stocks of varying age composition which may be revalued from time to time or may be valued at historic cost, less depreciation, means that inter-firm comparisons need to be made with caution."[11]

However, it is reassuring to remember that "although the accounting information is imperfect, it is, in many respects, the best information available to management and (more so) to shareholders."[12]

5.2. Analysis of Investment in Operating Assets

The cotton mills included in this study have invested various amounts in fixed assets, current assets, trade investments and intangible assets. The intangible assets have been deducted from the total of share capital and reserves for calculating the net worth. The trade investments of cotton mills in Kerala are nominal amounts only, forming a very small part of the total assets. They usually represent shareholdings in employees' cooperative societies organised by the mill employees.

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[11] Singh and Whittington, Op.cit., p.220.

[12] Ibid., p.221.

5.2.1. Fixed Assets and Current Assets per Spindle

The major investments of cotton mills are in fixed assets and current assets. The investments in fixed assets and current assets have been expressed per installed spindle for each mill in order to make the interfirm comparison meaningful. Fixed assets are taken as net fixed assets plus capital work-in-progress.

Table-5.1 gives the investment in fixed assets and current assets per spindle for each of the 19 spinning mills studied, averaged for the 5 year period 1980-81 to 1984-85. The mean and coefficient of variation values are also calculated.

TABLE - 5.1

Fixed Assets and Current Assets per Spindle
(Average for 5 years 1980-81 to 1984-85)

Name of mill	Fixed assets per spindle (Rs)	Current assets per spindle (Rs)
A	693	475
B	671	814
C	1586	1626
D	772	524
E	657	324
H	428	701
I	642	528
J	292	501
K	100	325
L	229	732
M	1434	845
N	1870	855
O	534	466
P	627	836
Q	1104	696
T	1161	1193
U	285	491
V	546	415
W	568	684
Mean	747	686
Coefficient of variation	62.23	44.71

Source: Calculated from Annual Reports

The average fixed assets per spindle of the spinning mills included in the study amount to Rs.747; the average current assets per spindle are Rs.686. There is a lot of variation among individual mills in respect of both fixed assets and current assets per spindle. But the inter-mill variation is greater in the case of fixed assets per spindle. This is obviously due to the fact that the mills have been established at different periods and the fixed asset values represent their 'original cost less depreciation'. As a result, older mills are bound to have lesser amounts of fixed assets per spindle than the newer mills.

5.2.2. Relation between Investment and Profitability

Return on assets is the profitability ratio which indicates the profitability on the investment in operating assets. Therefore, the variations in return on assets have been correlated with the variations in fixed assets per spindle, current assets per spindle and total operating assets per spindle. The results are presented in Table-5.2.

TABLE - 5.2

Correlation between Investment and Return on Assets

Dependent variable	Independent variable	r	r^2
Average return on assets	Average fixed assets per spindle	(+)0.32	0.10
Average return on assets	Average current assets per spindle	(+)0.25	0.06
Average return on assets	Average total assets per spindle	(+)0.32	0.10

Rates of return on assets are not significantly correlated to the investment in fixed assets or current assets or total operating assets. However, the association between return on assets and investment in operating assets in positive, which means that the higher the investment the higher the return. This positive association gives an indication that expenditure on modernisation may probably have a positive influence on profitability.

5.2.3. Expenditure on Modernisation

Increase in the total value of fixed assets may be the result of expansion of existing installed capacity, expenditure on modernisation, or revaluation of the existing assets. By considering the increase in fixed assets per spindle, the effect of expansion of existing installed capacity can be eliminated and attention can be concentrated on the effect of expenditure on modernisation. However, the increase due to revaluation of existing assets has been ignored.

Table-5.3 gives the increase in fixed assets value per spindle of 19 spinning mills between 1980-81 and 1984-85. In the case of 3 mills, there have been revaluations of existing assets, but the increase due to such revaluations has been ignored.

TABLE - 5.3

Increase/Decrease in Fixed Assets per Spindle

Between 1980-81 and 1984-85

Name of mill	Increase/decrease in fixed assets per spindle (Rs)
A	73
B	(-)159
C	110
D	(-) 22
E	104
H	127
I	310
J	50
K	0
L	(-) 99
M	660
N	(-)709
O	92
P	480
Q	140
T	315
U	(-) 93
V	(-)101
W	23

Mean = 68 Coefficient of variation = 399.22

Source: Calculated from Annual Reports

The per spindle increase or decrease in fixed asset values can be taken as an index of modernisation expenditure. As can be seen from the table there is wide variation among mills in respect of their expenditure on modernisation. In fact, in the case of some mills, the value of their fixed assets has declined, signifying no expenditure on modernisation.

To understand the effect of modernisation expenditure on profitability, a correlation analysis has been carried out between the increase in fixed assets per spindle on the one hand and operating profit per spindle and return on assets on the other. The results are presented in Table-5.4.

TABLE - 5.4

Correlation between Modernisation Expenditure and Profitability

Dependent variable	Independent variable	r	r^2
Average operating profit per spindle	Increase in fixed assets per spindle	0.73	0.53
Average return on assets	Increase in fixed assets per spindle	0.53	0.28

There is significant correlation between the expenditure on modernisation and operating profit per spindle and fairly good correlation between expenditure on modernisation and return on assets. Fifty three percent of variations in operating profit per spindle and 28 percent of variations in return on assets are explained by

the variations in expenditure on modernisation. A mill which spends more on modernisation of its fixed assets is likely to have a higher rate of return on its investment. Thus, expenditure on modernisation of fixed assets is a determinant of profitability.

5.2.4. Investment in fixed assets by SITRA mills

The overall average value of fixed assets per spindle of spinning mills covered in SITRA's 7th Interfirm comparison survey, for the 5 year period 1977 to 1981, is Rs.331.[13] As against this, the average value of fixed assets per spindle of spinning mills in Kerala, for the 5 year period 1980-81 to 1984-85, is Rs.747. The difference in value is probably the result of differences in age between SITRA mills and Kerala mills.

5.2.5. Current assets policy

The Current assets/Fixed assets ratio indicates whether a firm is following a conservative or aggressive current assets policy. The average CA/FA ratios of 19 spinning mills for the 5 year period 1980-81 to 1984-85 are presented below in Table-5.5.

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[13] Doraiswamy, Financial Performance in Boom and Recession, p.10.

TABLE - 5.5

Current Assets/Fixed Assets Ratios
(Average for 5 years 1980-81 to 1984-85)

Name of mill	CA/FA ratio
A	0.70
B	1.22
C	1.05
D	0.68
E	0.52
H	1.65
I	0.88
J	1.73
K	3.29
L	3.30
M	0.64
N	0.46
O	0.90
P	1.40
Q	0.64
T	1.07
U	1.75
V	0.77
W	1.21

Source: Calculated from Annual Reports

The individual ratios vary from a minimum of 0.46 to a maximum of 3.30. The median ratio is 1.05.

An aggressive current assets policy is expected to produce higher return on assets. Therefore, Pearson's correlation coefficient has been calculated to assess the covariation between CA/FA ratios and the rates of return on assets. The value of r is found to be (-)0.45. Even though there seems to be no significant correlation between current assets policy and profitability, the direction of covariation (negative) is revealing. The lower the ratio, the higher the profitability.

An analysis of the CA/FA ratios of the best and the worst spinning mills, identified earlier in Chapter III on the basis of profitability ratios, throws light on the impact of current assets policy on profitability.

In Table-5.6 the average CA/FA ratios of the best and the worst spinning mills are presented.

TABLE - 5.6

CA/FA Ratios of Best and Worst Spinning Mills
(Average for 5 years 1980-81 to 1984-85)

Best mills	CA/FA ratio	Worst mills	CA/FA ratio
A	0.70	L	3.30
M	0.64	V	0.77
H	1.65	J	1.73
P	1.40	O	0.90
B	1.22	K	3.29
T	1.07		
Overall Average	1.11	Overall Average	2.00

Source: Calculated from Annual Reports

On the whole, the best spinning mills have generally lower CA/FA ratios, suggesting that they follow a more aggressive current assets policy than the worst mills. The overall average CA/FA ratio for the worst spinning mills is almost double the overall average ratio for the group of best spinning mills.

Thus the current assets policy pursued by mills does have some influence on their profitability.

5.2.6. Asset Utilisation

The sales turnover achieved by the investment in operating assets may vary from mill to mill. The utilisation of assets in generating sales by different mills can be compared with the help of asset turnover ratios.

Table-5.7 gives the average asset turnover ratios for the 5 year period (1980-81 to 1984-85) of 19 spinning mills.

TABLE - 5.7

Asset Turnover Ratios
(Average for 5 years 1980-81 to 1984-85)

Name of mill	Fixed assets turnover	Current assets turnover	Total assets turnover
A	1.62	2.44	0.95
B	2.63	2.14	1.17
C	2.04	1.94	0.98
D	0.91	1.37	0.54
E	1.10	2.38	0.72
H	4.38	2.74	1.67
I	2.03	2.30	1.06
J	3.76	2.18	1.38
K	9.11	3.05	2.24
L	5.14	1.58	1.20
M	1.13	1.89	0.69
N	0.82	1.75	0.55
O	1.74	2.03	0.92
P	1.84	1.29	0.75
Q	1.53	2.45	0.93
T	2.07	2.02	1.01
U	2.93	1.77	1.09
V	1.49	1.93	0.84
W	3.70	3.17	1.67

Source: Calculated from Annual Reports

The fixed assets turnover ratios vary from a minimum of 0.82 times to a maximum of 9.11 times, the range of variation being 8.29. But the range of variation is only 1.88 in the case of current assets turnover ratios and 1.70 in the case of total assets turnover ratios.

The higher range of variation in the case of fixed assets turnover ratios is due to the large variations in the value of fixed assets of different firms on account of the differences in their age.

Better utilisation of operating assets should normally result in higher return on assets. To see the relationship between asset utilisation and return on assets of the spinning mills in Kerala, a simple correlation coefficient has been calculated between the total operating assets turnover ratio and the return on assets. The value of r is (-)0.31. It means that there is no significant correlation between asset utilisation and return on assets. The negative value of r indicates that the higher the turnover the lower the return, and vice versa. This tendency seems to be contrary to theoretical expectations.

A comparison of the asset turnover ratios of the two groups of best and worst spinning mills presents a similar unexpected result. In Table-5.8 the operating assets turnover ratios of the best spinning mills and the worst spinning mills are given.

TABLE - 5.8

Operating Assets Turnover Ratios of the Best and Worst Spinning Mills

(Average for 5 years 1980-81 to 1984-85)

Best mills	Turnover ratio	Worst mills	Turnover ratio
A	0.95	L	1.20
M	0.69	V	0.84
H	1.67	J	1.38
P	0.75	O	0.92
B	1.17	K	2.24
T	1.01		
Overall Average	1.04	Overall Average	1.32

Source: Calculated from Annual Reports

The overall average of the operating assets turnover ratios of the worst spinning mills is higher than that of the best spinning mills. This is contrary to theoretical expectations. The lower turnover ratios of the best spinning mills and the association of lower turnover ratios with higher returns on assets can be explained in terms of our earlier findings.

In the earlier sections of this Chapter, it was observed that higher profits and returns are associated with higher investment per spindle on account of expenditure on modernisation. Therefore, the lower turnover ratios of the more profitable mills are due to their higher investment in assets for the purpose of modernisation

and are not really a sign of deficient sales.

5.3. Summary of Findings

Chapter V is devoted to an analysis of the asset structure of spinning mills. The major investments of spinning mills are to be found in fixed assets and current assets; trade investments form a very small proportion of total investments.

The investment in fixed assets and current assets per spindle varies between mills; but the inter-mill variation is greater in the case of fixed assets per spindle.

There seems to be no significant correlation between the investment in assets and the return on assets. However, higher returns seem to be associated with higher investment in assets.

Individual spinning mills have incurred varying amounts of expenditure on modernisation of their fixed assets, measured in terms of the increase in the fixed assets value per spindle over the 5 year period of study. The expenditure on modernisation of fixed assets is positively correlated to operating profit per spindle and return on assets.

Current assets/Fixed assets ratios of firms indicate their approach - whether aggressive or conservative - to current assets policy. Even though CA/FA ratios of spinning mills are not significantly correlated to profitability ratios, the more profitable mills seem to follow an aggressive current assets policy because they have generally lower CA/FA ratios than the least profitable mills studied.

Fixed assets turnover ratios of individual spinning mills vary much more widely than the current assets or total operating assets turnover ratios. There is no significant correlation between operating assets turnover ratio and return on assets. But, contrary to expectation, higher returns are seen to be associated with lower turnover ratios and the more profitable mills seem to have lower turnover ratios. The more profitable mills have lower asset turnover ratios because of their higher investment in fixed assets for purpose of modernisation. Production with the help of modern, technologically advanced machines has helped these mills to earn higher margins on sales and thus higher returns on investments inspite of lower asset turnover ratios. Thus expenditure on modernisation of fixed assets is an important factor contributing to higher profitability of mills. An aggressive current assets policy also helps in earning higher profits.

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CHAPTER - VI

FINANCIAL STRUCTURE

A manufacturing concern has to invest money in fixed assets and current assets to carry on the production process. The funds required for investing in assets can be raised from different sources such as share capital, debentures, term loans and short-term borrowings. The combination of these different sources of finance employed by a firm in financing its assets represents the firm's financial structure. The financial structure of a firm has a definite influence on its profitability through the effect of financial leverage. In Chapter V the investment in operating assets of cotton textile mills in Kerala was analysed. The manner of financing such investment and the resultant financial structure and its effect on profitability on account of financial leverage will be studied in this chapter.

6.1.1. Financial structure and Capital structure

The assets of a firm can be financed by two types of funds: owners' funds and creditors' funds. Owners' funds are represented by share capital - equity and preference - and retained earnings. Creditors' funds may be secured in the form of debentures, term loans, short-term borrowings and current liabilities. A firm may use different proportions of the different sources of funds to finance its assets. The composition of the long-term sources of finance employed by a firm is referred to as its capital structure. The composition

of all the sources of finance - both long-term and short - term-is the firm's financial structure.

Weston and Brigham have distinguished between financial structure and capital structure:

> Financial structure refers to the way the firm's assets are financed: it is the entire right-hand side [liabilities side] of the balance sheet. Capital structure is the permanent financing of the firm, represented primarily by long-term debt, preferred stock, and common equity, but excluding all short-term credit. Thus, a firm's capital structure is only a part of its financial structure.[1]

Capital structure has been precisely defined by Pandey. "The term capital structure is used to represent the proportionate relationship between the various long-term forms of financing, such as debentures, long-term debt, preference capital and common share capital including reserves and surpluses (viz., retained earnings)."[2]

6.1.2. Financial leverage

The financial structure of a firm is a vital factor in its success or failure because the debt-equity mix in the financial stru-

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[1] J.Fred Weston and Eugene F. Brigham, Managerial Finance 6th ed. (Hinsdale, Illinois: The Dryden Press, 1978), p.663. It may be noted that in the U.S.A. the assets are shown on the left-hand side of a balance sheet while the liabilities and capital are shown on the right-hand side.

[2] Pandey, Op.cit., p.203.

cture has important implications for the shareholders' earnings and risk. "Capital is a necessary factor of production, and like any other factor, it has a cost."[3] The various capital components such as different types of debts, preference share capital and equity share capital have their own specific costs. The rate of interest on debt is fixed. Moreover, the company has a legal obligation to pay interest on debt, irrespective of its earnings. The rate of preference dividend is also fixed. However, the rate of equity dividend is not fixed because the equity shareholders are the residual owners entitled to the residual income.

The fact that certain capital components have fixed costs provides an opportunity to raise the residual earnings of equity shareholders, by earning on the fixed cost capital more than their costs. "The use of the fixed charges sources of funds, such as debt and preference capital along with the owners' equity in the capital structure is described as financial leverage or trading on equity."[4] By employing financial leverage, a firm can increase its earnings per equity share. "The primary motive of a company in using financial leverage is to magnify the shareholders' earnings under favourable economic conditions . . . . When the difference between the earnings generated by assets financed by the fixed charges funds and the costs of these funds is distributed to the shareholders, they

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[3] Weston and Brigham, Op.cit., p.695.

[4] Pandey, Op.cit., p.205.

get additional earnings without increasing their own investments. Consequently, the earnings per share or the rate of return on the common shareholders' equity increases."[5]

However, as pointed out by Weston and Brigham, financial leverage is a two-edged sword and may sometimes produce the opposite effect.

> Whenever the return on assets exceeds the cost of debt, leverage is favorable and the return on equity is raised by using it. However, leverage is a two-edged sword, and if the returns on assets are less than the cost of debt, then leverage reduces the returns on equity. This reduction is greater the more leverage a firm employs.[6]

Thus, though financial leverage may be used to boost the earnings per share, there is a risk of increased losses when conditions are unfavourable. "The firm's financial and capital structure generates financial risk, which may be defined as the risk that is created by the use of debt in the financial structure . . . . Presence of financial risk is typified by fluctuations in net income that are larger than fluctuations in operating income."[7]

6.1.3. Leverage Ratios

The financial structure of a company gives an indication of

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[5] Ibid.

[6] Weston and Brigham, Op.cit., pp.687-8.

[7] Iqbal Mathur, Introduction to Financial Management (New York: Macmillan Publishing Co., Inc., 1979), p.243.

the long-term financial condition or solvency of the company. A company's financial structure can be studied with the help of leverage ratios.

> In practice, leverage is approached in two ways. One approach examines balance sheet ratios and determines the extent to which borrowed funds have been used to finance the firm. The other approach measures the risks of debt by income statement ratios designed to determine the number of times fixed charges are covered by operating profits.[8]

6.1.3.1. Debt ratio

The first of the leverage ratios is a balance sheet ratio which is calculated "to determine the proportion of debt in total financing. Many variations of these ratios exist; but all these ratios indicate the same thing - the extent to which the firm has relied on debt funds in financing assets."[9] One variation of the debt ratio is the ratio of total debt to total assets. "The ratio of total debt to total assets, generally called the debt ratio, measures the percentage of total funds provided by creditors. Debt includes current liabilities and all bonds."[10]

The implications of the debt ratio are explained by Pandey.

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[8] Weston and Brigham, Op.cit., p.30.

[9] Pandey, Op.cit., p.508.

[10] Weston and Brigham, Op.cit., p.30.

> A high ratio shows that the claims of creditors are greater than those of owners. A very high ratio is unfavourable from the firm's point of view . . . . During the periods of low profits, a highly debt-financed company suffers great strains; it cannot earn sufficient profits even to pay the interest charges of creditors . . . . A low debt-equity ratio implies a greater claim of owners than creditors . . . . During the periods of low profits, the debt servicing will prove to be less burdensome for a company with low debt-equity ratio. However, from the shareholders' point of view, there is a disadvantage during the periods of good economic activities if the firm employs a low amount of debt.[11]

6.1.3.2. Interest coverage ratio

The second of the leverage ratios is the interest coverage ratio which is used to test the firm's debt-servicing capacity. It is also called the times-interest-earned ratio. "The times-interest-earned ratio is determined by dividing earnings before interest and taxes . . . by the interest charges. The times-interest-earned ratio measures the extent to which earnings can decline without resultant financial embarrassment to the firm because of inability to meet annual interest costs."[12] The ratio "shows how many times the interest charges are covered by funds that are ordinarily available to pay the interest charges . . . . A higher ratio is desirable; but too high ratio indicates that the firm is very conservative in using debt, and that it is not using credit to the best advantage

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[11] Pandey, Op.cit., pp.509-510.

[12] Weston and Brigham, Op.cit., p.31.

of shareholders. A lower ratio indicates excessive use of debt, or inefficient operations."[13] Franks and Scholefield have indicated a crude standard for the interest coverage ratio. "It is generally accepted that for a manufacturing company a ratio of four and above is acceptable."[14]

Determination of the optimum leverage for a firm is a difficult task. As Wright says: "Setting the level of debt capacity considered as sustainable is one of the most critical decisions management must make. Critical because setting the level too high exposes the business to the risk of failure; setting it too low means the return on equity is not as high as it might otherwise be."[15]

The financial structure of the cotton textile mills in Kerala shall now be examined to see to what extent they have employed financial leverage and with what effect on their profitability.

6.2.1. Financial Structure of Cotton Mills

The various sources of finance utilised by the cotton mills in Kerala are equity shares, preference shares, reserves, debentures, term loans from banks and other financial institutions, borrowings

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[13] Pandey, Op.cit., pp.511-2.

[14] Julian R. Franks and Harry H. Scholefield, Corporate Financial Management 2nd ed. (England: Gower Press, 1977), p.212.

[15] M.G. Wright, Financial Management (London: McGraw Hill Publishing Co. Ltd., 1970), p.201.

from banks for working capital, short-term loans and deposits, and current liabilities and provisions. Out of the 23 cotton mills whose balance sheets have been analysed for 5 years from 1980-81 to 1984-85 only one mill has issued debentures; while seven mills have issued preference shares for very nominal amounts. Thus, debentures and preference shares are negligible as sources of finance for the cotton mills. Term loans, short-term borrowings, equity capital and reserves constitute the major sources of finance. The relative proportion of each source can be seen from Table-6.1 which presents the financial structure of 20 cotton mills (whose data were available) for 1984-85.

TABLE - 6.1

Financial Structure of Cotton Mills in Kerala : 1984-85

(Rs. in lakhs)

Name of mill	Current Liabilities	Term Loans	Preference Shares	Equity shares plus Reserves
A	111.74	31.11	-	105.65
B	190.31	86.78	-	58.95
C	390.11	90.95	10.00	144.32
F	148.17	62.23	-	47.92
G	708.41	93.93	-	(-)160.45
H	180.58	75.11	2.56	32.38
I	328.71	312.17	-	12.55
J	176.96	84.90	-	(-) 25.82
K	107.04	12.89	-	(-) 43.38
L	272.07	26.57	-	(-) 44.17
M	623.04	495.52	-	564.81
N	220.37	291.15	-	38.53
O	250.39	124.02	-	(-) 74.48
P	158.10	216.97	-	251.69
Q	419.06	349.75	-	180.49
S	190.37	27.17	-	77.51
T	339.49	120.56	-	218.25
U	44.26	-	5.99	52.98
V	145.41	176.98	-	(-)114.56
W	224.37	101.03	5.00	35.40
Total	5228.96	2779.79	23.55	1358.57

Notes: 1. Mill M has debentures amounting to Rs.94.50 lakhs.

2. Current liabilities include bank borrofings for working capital, short-term loans and deposits, and provisions, besides current liabilities.

Source: Annual Reports

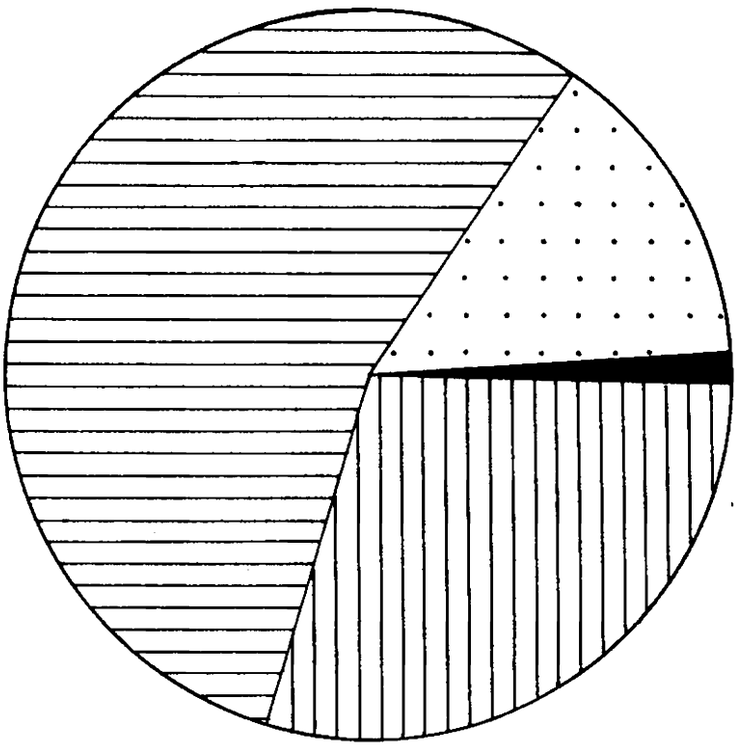
The contribution of each source as a percentage of the total finance provided is as follows: current liabilities - 55.13%; term loans - 29.30%; debentures - 1.0%; preference shares - 0.25%; equity shares plus reserves - 14.32%. Current liabilities provide 55% of the funds required to finance the investment in assets. Short-term and long-term liabilities together contribute 85.43% of total financing. Net worth, comprising of equity shares, reserves and preference shares, account for only 14.57% of total financing. The financial structure of the cotton mill industry in Kerala in 1984-85 is illustrated in Figure 6.1.

Six of the 20 mills in the above table show negative net worth figures. It means that the original investments by the owners of these mills have been completely eroded by accumulated losses. These mills survive entirely on the funds provided by their creditors. They are akin to buildings whose foundation has been washed away, ready to topple over any moment.

Of these six mills, three are NTC units which were taken over by NTC on account of sickness. The negative net worth indicates that these mills have not so far been fully rehabilitated. Of the remaining three mills with negative net worth, one is a co-operative mill, another is a private limited company and the third is a unit owned by the State government.

It can be seen in Table -6.1 that the industry depends more on short-term debt than on long-term debt. While long-term debt

Fig.6.1 FINANCIAL STRUCTURE OF COTTON MILL INDUSTRY IN KERALA, 1984 - 85



Preference shares and debentures - 1 %

Equity shares plus reserves - 15 %

Term loans - 29 %

Current liabilities - 55 %

sources provide 30.30 percent of total funds, short-term debt sources provide 55.13% of total funds. In the case of individual mills, except 3 mills, all the other mills have more short-term debt than long-term debt in their capital structure.

The cotton mills in Kerala seem to have even more short-term debt than the mills in South India as a whole. The 7th Interfirm comparison survey conducted by SITRA has revealed that the average current liabilities per spindle of the mills included in the survey amounted to Rs.281 for the calender year 1980 and Rs.312 for the calender year 1981.[16] The weighted arithmetic average for 1980 and 1981 taken together works out to Rs.295.61. As against this, the average short-term liabilities per spindle of 21 cotton mills in Kerala amounted to Rs.491.37 for the year 1980-81. In the case of Kerala mills, 'short-term liabilities' include bank borrowings for working capital and other short-term loans and deposits. But, in the SITRA survey, 'current liabilities' do not include these items and as a result the current liabilities per spindle of SITRA mills are understated to some extent. Nevertheless, the average short-term liabilities per spindle of cotton mills in Kerala exceed the average current liabilities per spindle of SITRA mills by about Rs.200.

Weston and Brigham elaborate on the disadvantages of using too much short-term debt:

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[16] Indra Doraiswamy, Financial Performance in Boom and Recession (Coimbatore: The South India Textile Research Association, 1984), pp.xxiv and iv.

> Even though short-term debt is generally less expensive than long-term debt, use of short-term debt subjects the firm to more risk than does long-term debt. This risk effect occurs for two reasons: (1) If a firm borrows on a long-term basis, its interest costs will be relatively stable over time, but if it borrows on a short-term basis, its interest expenses will fluctuate widely, at times going quite high . . . . (2) If a firm borrows heavily on a short-term basis, it may find itself unable to repay this debt or it may be in such a shaky financial position that the lender will not extend the loan; thus, the firm could be forced into bankruptcy. [17]

Thus, by relying more on short-term debt, the cotton mill industry in Kerala exposes itself to great risk. The risk is all the more greater because short-term debt is used to finance the investment in permanent assets, i.e. fixed assets.

The ideal way of financing the assets of a firm is to adopt a financial plan which matches the expected life of the asset with the maturity of the source of finance. "When the firm follows matching approach (also known as hedging approach), long-term financing will be used to finance fixed assets and permanent current assets and short-term financing to finance temporary or variable current assets."[18]

Table -6.2 gives the Fixed assets to Long-term funds (Net worth plus long-term liabilities) ratio, expressed as a percentage and averaged for 5 years from 1980-81 to 1984-85, for 23 cotton mills.

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[17] Weston and Brigham, Op.cit., p.149.

[18] Pandey, Op.cit., p.341.

TABLE - 6.2

Fixed Assets to Long-term Funds Ratio

(Average for 5 years from 1980-81 to 1984-85)

Name of mill	FA to LF (%)
A	110.46
B	95.45
C	133.33
D	125.65
E	118.38
F	67.50
G	369.12
H	102.38
I	87.00
J	257.80
K	LF Negative
L	66.90
M	107.15
N	92.99
O	146.32
P	53.00
Q	107.69
R	101.94
S	65.31
T	124.40
U	73.10
V	120.39
W	125.72

Source: Calculated from Annual Reports

It can be seen from the table that, for 15 mills out of the 23, fixed assets exceed long-term funds which means that fixed assets are partly financed by short-term liabilities. "An aggressive policy is said to be followed by the firm when it uses more short term financing than warranted by the matching plan . . . . Some extremely aggressive firms may even finance a part of their fixed assets with short-term financing. The relatively more use of short-term financing makes the firm more risky."[19]

6.2.2. Financing of growth in assets

During the 5-year period from 1980-81 to 1984-85 the investment in total assets of cotton mills has increased. The sources of finance which were employed to finance the additional investment in assets of 20 mills are analysed in Table - 6.3.

TABLE - 6.3

Financing of Additional Investment in Assets Between 1980-81 and 1984-85

(Rs. in lakhs)

Name of mill	Increase in total assets	Sources of finance		
		Current liabilities	Long-term liabilities	Net worth
A	82.68	33.06	6.06	43.56
B	(-)90.80	(-) 6.86	(-) 9.94	(-) 74.00
C	214.60	87.58	44.79	82.23
F	81.09	60.76	18.63	1.70
G	32.60	300.39	(-)48.08	(-)219.71
H	138.29	87.47	45.10	5.72
I	260.74	238.90	202.35	(-)180.51
J	0.84	13.11	52.05	(-) 64.32
K	(-)20.25	32.04	3.45	(-) 55.74
L	3.45	197.58	(-)68.03	(-)126.10
M	866.44	172.81	479.02	214.61
N	73.08	155.08	72.65	(-)154.65
O	20.41	168.01	51.06	(-)198.66
P	303.52	111.28	213.68	(-) 21.44
Q	364.03	208.44	179.28	(-) 23.69
S	65.81	36.83	27.17	1.81
T	432.12	215.34	47.80	168.98
U	(-) 0.94	(-) 3.20	-	2.26
V	(-)37.90	59.78	74.19	(-)171.87
W	203.37	136.25	54.86	12.26
Total	2993.18	2304.65	1446.09	(-)757.56

Source: Annual Reports

Over the five year period, there has been an aggregate additional investment in total assets amounting to Rs.2993.18 lakhs. However, different mills have varying amounts of additional investment in assets; 4 mills show decline in total assets over the period. The aggregate additional investment has been financed to the extent of 77 percent by current liabilities and 48.31 percent by long-term liabilities, while net worth has declined to the extent of 25.31 percent. The liabilities of the industry have increased more than its assets. As investment in assets has increased, net worth has declined and the short-fall is made up by short-term and long-term borrowings. In the case of 11 out of 20 mills whose data are presented in Table-6.3, net worth has declined which means that their growth is financed entirely by external sources, without any internal resource generation.

The funds invested by owners in the cotton mill industry in Kerala constitute a small proportion of total funds invested; a little less than 15 percent. Furthermore, additional investment in the industry over the last 5 years has been financed by creditors. This is an indication that the long-term liquidity or solvency of the industry is at stake.

6.2.3. Financial Leverage of Cotton Mills

The combined debt ratio, i.e., total debt to total assets expressed as a percentage, of twenty mills for 1984-85 calculated

from the total figures in Table-6.1 is 85.43. However, individual mills are bound to have varying debt ratios. The financial leverage employed by each mill and each mill's debt-servicing capacity have to be studied separately with the help of debt ratios and interest coverage ratios calculated for each mill. Table-6.4 gives the total debt to total assets ratio and the interest coverage ratio of each mill, averaged for the 5 year period from 1980-81 to 1984-85, along with the median values.

TABLE - 6.4

Financial Leverage Ratios

(Average for 5 years 1980-81 to 1984-85)

Name of mill	Total debt to total assets ratio (%)	Interest coverage ratio (times)
A	61	2.51
B	77	0.65
C	76	0.43
D	121	0.31
E	143	0.27
F	77	0.96
G	112	(-)0.63
H	87	1.09
I	72	0.68
J	101	(-)5.16
K	125	(-)0.66
L	96	(-)0.35
M	67	2.65
N	75	(-)0.22
O	86	0.38
P	35	11.29
Q	79	0.74
R	100	(-)0.64
S	69	1.29
T	87	0.61
U	49	0.07
V	111	(-)0.31
W	98	0.34
Median	86	0.38

Source: Calculated from Annual Reports

The debt ratios, that is, total debts expressed as percentage of total assets, of individual mills vary from a minimum of 35% to a maximum of 143%. The median debt ratio is 86 percent. In fact, except two mills, all other mills have debt ratios exceeding 60 percent. Seven mills have debt ratios of 100 percent or more which means that they are completely financed by debt and their net worth is negative. Incidentally, five of these seven mills are public sector units, one is a co-operative mill and the other a private limited company.

The debt ratios of cotton mills in Kerala seem to be rather high. "The norms prescribed by the Controller of Capital Issues (CCI) in the matter of the debt-equity ratio of firms are: (i) A company's debt-equity ratio should not exceed 2:1 (i.e. maximum percentage of debt in the total capital allowed is 66 2/3%)."[20] Twenty of the 23 cotton mills studied have debt percentages higher than the maximum prescribed by the Controller of Capital Issues. However, "according to Tandon Committee 'it is not practicable to legislate absolute standards for these ratios. Where the debt-equity ratios of a borrower are worse than the median for his industry the banker would endeavour to persuade the borrower to strengthen his equity as early as possible'."[21] In the case of cotton mills in Kerala

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[20] L.V.L.N. Sarma and Nagalakshmi Murali, "Corporate Debt Capacity - A Simulation Approach," The Chartered Accountant, XXIX (June 1981), 882.

[21] Ibid.

the median debt ratio seems to be on the high side. The effect of such high debt ratios on the cotton mills' debt-servicing capacity and earnings per share should now be examined.

The interest coverage ratios of individual cotton mills vary from a maximum of 11.29 times to a minimum of (-)5.16 times, with the median value of 0.38. Except in the case of mill P with an interest coverage ratio of 11.29 on account of its low debt ratio of 35% of assets, all other mills show poor debt-servicing capacity. Only 4 mills other than mill P have been able to earn sufficient profits to cover their interest charges at least once. There is a fairly good inverse association (r = [-] 0.58) between debt ratios and interest coverage ratios. The higher the debt ratio, the lower the debt-servicing capacity. This again points to higher than optimum debt in the capital structure of firms.

6.2.4. Optimum Leverage of Cotton Mills

The effect of debt financing on profitability can be analysed by correlating the earnings per share and debt ratio of each mill. In Chapter III, 1980-81 was identified as the most profitable year and 1981-82 as the least profitable year within the period of this study for the cotton mill industry in Kerala. As the effect of leverage will be felt most prominently during prosperous as well as depressing conditions, it would be enlightening to carry out an EPS - debt ratio analysis for both 1980-81 and 1981-82.

Table - 6.5 presents the total debt to total assets ratio and earnings per share of 22 mills for the year 1980-81. Similarly, in Table-6.6 are given the total debt to total assets ratio and earnings per share of 23 mills for the year 1981-82.

TABLE - 6.5

Total debt to total assets ratio and Earnings per share: 1980-81

Name of mill	Total debt to total assets ratio (%)	Earnings per share (Rs.)
P	16	202.03
U	46	6.87
I	51	104.70
O	56	71.73
N	60	(-) 9.45
M	62	120.79
A	63	69.16
Q	65	211.25
L	67	22.54
S	67	20.97
B	69	29.92
F	74	71.12
V	77	6.94
T	80	21.36
H	81	52.95
W	83	7.43
C	83	(-)311.41
R	84	(-) 30.95
K	87	67.60
G	90	(-) 17.25
D	117	(-) 18.35
E	131	47.21
Median	71.50	

Source : Calculated from Annual Reports

TABLE - 6.6

Total debt to total assets ratio and Earnings per Share: 1981-82

Name of mill	Total debt to total assets ratio (%)	Earnings per share (Rs.)
P	26	74.42
U	54	(-) 13.87
I	62	2.02
M	64	(-) 7.02
A	64	35.55
S	65	(-) 21.90
N	70	(-) 22.19
O	71	(-) 84.06
B	72	(-) 68.61
C	75	(-)143.53
Q	78	(-)421.25
F	80	(-) 13.21
J	84	(-) 23.50
L	84	(-) 82.31
T	91	(-) 92.36
H	92	(-)104.05
W	93	(-)101.18
V	97	(-) 26.67
R	99	(-) 35.93
G	108	(-)133.47
K	116	(-) 97.48
D	124	(-)159.32
E	141	(-)247.07
Median	80	

Source: Calculated from Annual Reports

Higher financial leverage or debt financing seems to be employed when the industry faces depression as the median debt ratio for 1981-82 is higher than that for 1980-81.

In 1980-81, two mills have debt ratios of less than 50 percent and two mills have debt ratios higher than 100 percent. The remaining 18 mills have debt ratios ranging from 51 percent to 100 percent. To see the relationship between debt ratios and earnings per share, the debt ratios can be grouped into classes and the average earnings per share for each class can be calculated.

TABLE - 6.7

Debt ratio groups and average EPS: 1980-81

Range of debt ratios (%)	Average Earnings per share (Rs.)
51-75	71.27
76-100	(-)25.42

As the percentage of debt in the capital structure exceeds 75, earnings per share seem to decline.

In 1981-82, one mill has a debt ratio below 50 percent while 4 mills have debt ratios exceeding 100 percent. The debt ratios are grouped into 3 classes and the average earnings per share for each class are calculated.

TABLE - 6.8

Debt ratio groups and average EPS: 1981-82

Range of Debt ratios (%)	Average earnings per share (Rs.)
51-75	(-) 35.96
76-100	(-)100.05
101-150	(-)159.34

As in the case of 1980-81, firms having debt ratios ranging from 51 to 75 percent have suffered much less losses than firms with debt ratios higher than 75 percent.

From the foregoing analysis it can be stated that, for cotton mills in Kerala, debt percentages ranging from 51 to 75 seem to represent the optimum range of financial leverage or debt financing.

6.3. Summary of Findings

This chapter contains an analysis of the financial structure of the cotton mill industry in Kerala. The analysis throws light on the solvency of the industry.

The cotton mills in Kerala have raised the funds necessary for investment in assets mainly through term loans, current liabilities and short-term borrowings, and equity shares and retained earnings. Debentures and preference shares do not find favour with cotton mills as sources of finance.

Ownership funds, i.e., net worth, contribute only about 15 percent of total investment, the rest of the funds are provided by creditors. Cotton mills in Kerala employ more short-term debt than long-term debt. The permanent investment in fixed assets is also generally financed partly by short-term debt.

There has been additional investment in assets during the 5 year period of study, but the additional investment in assets has been financed mostly by debt. Net worth or owners' investment has declined during the period in the case of 11 mills out of a total of 20 mills due to accumulated losses. Six of these 20 mills have negative net worth during 1984-85, signifying complete domination of debt in their capital structure.

The proportion of debt in the total capital of cotton mills in Kerala is quite high, in some cases even exceeding 100 percent. The debt-servicing capacity is extremely low. Only 5 mills have earned sufficient income to cover their interest charges fully.

In 1981-82, when the industry in Kerala as a whole faced unfavourable conditions, higher debt financing is seen to be resorted to by the mills.

As the proportion of debt in the capital structure exceeds a sustainable limit, the earnings per share seem to decline. Fifty to seventy five percent of total capital seems to be the optimum proportion of debt in the capital structure of cotton mills in Kerala as mills with debt proportions within this range earn the highest earnings per share.

Low ownership contribution, high debt ratio and poor debt-servicing capacity are the salient features of the financial structure of the cotton mill industry in Kerala. Resorting to more short-term debt even to finance the permanent investment in fixed assets, financing of additional investment in assets with debt and decline in the net worth are disturbing trends adversely affecting the financial solvency of the industry. These characteristics and trends indicate that the financial health of the industry is far from sound.

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CHAPTER - VII

WORKING CAPITAL MANAGEMENT

There are two concepts of working capital: gross working capital and net working capital. "Gross working capital is defined as the firm's total current assets; net working capital is current assets minus current liabilities. Working capital management involves all aspects of the administration of both current assets and current liabilities."[1]

"Current assets, by accounting definition, are assets normally converted into cash within one year."[2] These are cash and marketable securities, receivables, and inventories. Current liabilities, on the other hand, represent short-term credit which is defined as "debt originally scheduled for repayment within one year."[3] Examples of current liabilities are accounts payable (i.e. sundry creditors) and bills payable resulting from trade credit between firms, accrual accounts such as wages outstanding and interest accrued, short-term borrowings from banks, and other short-term loans and deposits.

In Chapter V the aggregate investment in current assets was considered and in Chapter VI the total amount of current liabilities

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[1] Weston and Brigham, Op.cit., p.159.

[2] VanHorne, Op.cit., p.163.

[3] Weston and Brigham, Op.cit., p.223.

was considered. In this chapter each component of current assets and current liabilities and their inter-relationships and inter-changes will be analysed.

7.1.1. Liquidity

The working capital policy of a firm has an influence on its profitability and risk. Current assets generally have a short life span of less than one year and are readily convertible into cash. Current assets are, therefore, said to possess liquidity. "The liquidity of a business is one of the key factors determining its propensity to success or failure."[4] A firm's liquidity can be strengthened by increasing the level of investment in current assets. Increased liquidity will ensure the technical solvency of the firm, i.e., its continuous ability to meet maturing obligations. "However, increased liquidity via increased levels of working capital decreases the firm's rate of return."[5] More funds will be tied up in current assets than are absolutely necessary, thereby creating idle investment and decreased rate of return. To raise the rate of return, liquidity will have to be sacrificed. In other words, the level of investment in current assets has to be reduced, thereby exposing the firm to greater risk of technical insolvency. Thus, working capital management involves a risk-return tradeoff.

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[4] Wright, Op.cit., p.123.

[5] Mathur, Op.cit., p.97.

The way in which a firm finances its current assets also involves a risk-return tradeoff. A firm can follow a variety of approaches in financing its current assets. A minimum investment in current assets is required throughout the year to carry on the production process smoothly. Such minimum investment is designated as permanent current assets. The rest of the investment in current assets is fluctuating or temporary. "If the firm adopts a hedging approach to financing, each asset would be offset with a financing instrument of the same approximate maturity. Short-term or seasonal variations in current assets would be financed with short-term debt; the permanent component of current assets would be financed with long-term debt or equity."[6]

To the extent that a greater part of the permanent current assets is financed by short-term debt or current liabilities the firm is said to follow an aggressive policy which involves high risk but promises high returns. To the extent that a greater part of the temporary current assets is financed by long-term sources of funds, the firm is said to follow a conservative approach to current asset financing. This approach involves less risk but also less profits. Thus the relative proportion of current assets and current liabilities in a firm gives an indication of its liquidity or short-term solvency. The current ratio is used to measure the firm's liquidity.

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[6] VanHorne, Op.cit., p.165.

7.1.1.1. Current Ratio

One of the most frequently used ratios to measure the liquidity of a firm is the current ratio. "The current ratio is computed by dividing current assets by current liabilities . . . . It indicates the extent to which the claims of short-term creditors are covered by assets that are expected to be converted to cash in a period roughly corresponding to the maturity of the claims."[7] The higher the current ratio, the greater the liquidity of the firm. "However, as is the case with all the ratios used by the analyst, it is quite impossible to make a fixed rule as to what is a satisfactory ratio . . . . Many years ago bank credit men came to the conclusion that the current ratio should be at least 200 percent to be satisfactory. This opinion has persisted until comparatively recent times, and it is still held by some . . . . On the basis of more recent investigations, however, most analysts today agree that one enterprise may be in perfectly good current position with a ratio of less than 200 percent while another may be in an unsatisfactory condition although it has a ratio of over 200 percent."[8]

Even though the current ratio is a widely used measure, it has certain limitations. "(1) It depicts liquidity at a particular point in time (2) it does not measure the quality of assets and (3)

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[7] Weston and Brigham, Op.cit., p.28.

[8] Myer, Op.cit., p.186.

since the ratio measures the past, it cannot measure the future solvency of the business concern."[9]

Since the current ratio does not consider the liquidity of the individual components of current assets, the picture revealed by it may turn out to be misleading. The liquidity of a firm can be more critically evaluated by the Acid-test ratio.

7.1.1.2. Acid-test Ratio

"A somewhat more accurate guide to liquidity is the quick, or acid-test ratio:

$$\frac{\text{Current assets less inventories}}{\text{Current liabilities}}$$

. . . . This ratio is the same as the current ratio except that it excludes inventories - presumably the least liquid portion of current assets - from the numerator. The ratio concentrates on cash, marketable securities, and receivables in relation to current obligations and thus provides a more penetrating measure of liquidity than does the current ratio."[10] The acid-test ratio measures the firm's ability to pay off short-term liabilities without relying on the sale of inventories.

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[9] Nafees Baig, Problems on Managerial Accounting (New Delhi: Sterling Publishers Pvt. Ltd., 1974), p.195.

[10] VanHorne, Op.cit., pp.105-6.

There is another variation of the acid-test ratio. "Acid Test Ratio or Quick Ratio

$$= \frac{\text{Liquid or Quick Assets}}{\text{Liquid or Quick Liabilities}}$$[11]

"Liquid assets would include cash, debtors after providing for bad and doubtful debts and securities which can be realised without difficulty. Liquid or quick liabilities refer to current liabilities less bank overdraft."[12] In this version of acid-test ratio, inventories are deducted from current assets and bank overdrafts are deducted from current liabilities. Overdrafts are excluded because they often tend to become a sort of permanent source of finance.

"Rule of the thumb is 1:1 for the acid-test ratio so that, if a business has quick ratio of at least 100 percent, it is considered to be in a fairly good current financial position."[13]

The overall liquidity position of a firm revealed by the current ratio and the acid-test ratio would depend on the liquidity of each component of current assets. Efficient management of inventories and receivables will improve the liquidity of the firm.

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[11] Mohan and Goyal, Op.cit., p.303.

[12] Ibid., p.302.

[13] Ibid., p.303.

7.1.2. Inventory Management

"Inventories form a link between production and sale of a product."[14] A large proportion of the current assets of a manufacturing company would be represented by inventories. Inventory represents investment of funds. "Proper inventory management requires maintaining neither high nor low levels of inventory. High inventory levels . . . increase carrying costs. Low inventories lower carrying costs but increase reorder costs and shortage costs."[15] Moreover, high inventory levels cause idle investment which lowers profits while low inventory levels expose the firm to the risk of stock-outs.

7.1.2.1. Inventory turnover ratio

The adequacy of investment in inventory by a firm can be determined with the help of the inventory turnover ratio. "The inventory turnover is defined as sales divided by inventories."[16] This ratio is an indicator of the liquidity of inventory. "Inventory turnover is an indication of the velocity with which merchandize moves through the business."[17] Generally, a higher turnover is said to signify better management of inventory. "Sometimes, a relatively high inventory turnover ratio may be the result of too low a level of inventory

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[14] VanHorne, Op.cit., p.213.

[15] Mathur, Op.cit., p.162.

[16] Weston and Brigham, Op.cit., p 32.

[17] Mohan and Goyal, Op.cit.. p.306.

and frequent stockouts . . . . When the inventory turnover ratio is relatively low, it indicates slow-moving inventory or obsolescence of some of the stock."[18]

There is another device to test the overinvestment or under-investment in inventory. This device consists in expressing the value of inventory in terms of months' value of production and sales. The Tandon Committee, a study group appointed by the Reserve Bank of India, has prescribed norms for holding inventories for 15 major industries including cotton textiles. These norms represent the maximum levels for holding inventory and are expressed in terms of months' or weeks' value of production and sales.

7.1.2.2. Structure of Inventory

The inventory of a manufacturing company comprises of three major items: raw materials, semi-finished goods and finished goods, and sometimes a fourth item, namely, stores and spares. "The structure of inventory can be analysed in two possible ways. First, the share of each component of inventory may be related to aggregate inventory, and secondly, indicators about the adequacy and inadequacy of each type of inventory may be developed"[19] by expressing each type of inventory in terms of months' value of consumption, production

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[18] VanHorne, Op.cit., p.110.

[19] R.M. Srivastava, "Inventory Management in Cotton Textile Industry," Management Accountant, 16(9) (September 1981), 430.

or sales. Such an analysis will reveal whether the structure of the inventory is properly balanced.

7.1.3. Management of Receivables

Another important component of the current assets of a firm is the Receivables. Credit sales help to increase the volume of total sales, but it also creates receivables or book debts which the firm has to collect in the future. As long as the book debts remain uncollected, the funds of the firm are blocked up. To the extent the funds are so blocked up, the liquidity of the firm declines. The objective of receivables management is to optimise the profits without endangering the liquidity of the firm. Credit sales should be expanded to increase the volume of sales and amount of profits, but investment in book debts should be kept low to ensure liquidity.

7.1.3.1. Average Collection Period

The effectiveness of the receivables management of a firm can be evaluated by calculating the average collection period. "The average collection period, which is a measure of the accounts receivable turnover, is computed in two steps: (1) annual sales are divided by 360 to get the average daily sales; (2) daily sales are divided into accounts receivable to find the number of days' sales tied up in receivables. This is defined as the average collection period, because it represents the average length of time that the firm must wait after making a sale before receiving cash."[20] The longer the

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[20] Weston and Brigham, Op.cit., p.33.

average collection period, the worse the liquidity of accounts receivable. "The average collection period is a rough measure of the overall quality of the accounts receivables and of the credit policies of a firm."[21] The aim of management would be to reduce the average collection period through prompt collection of accounts receivable.

7.1.4. Funds Flow Analysis

The balance sheet of a firm reveals its financial position as on a particular date. The current assets and liabilities shown in the balance sheet represent the funds invested in current assets and their sources on the balance sheet date. But the amounts of current assets and current liabilities are so volatile and keep on changing constantly due to the presence of the operating cycle in a manufacturing concern. There is a continuous movement of resources from cash to raw materials, to work-in-process, to finished goods, to receivables, and back to cash. Thus, there is a flow of funds between two balance sheet dates causing changes in the components of current assets and current liabilities. As a result the working capital changes from time to time.

The net change in working capital between two periods can be analysed through a funds flow statement or a statement of changes in working capital, which will show the net changes in the various

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[21] S.C. Kuchhal, Financial Management 7th ed. (Allahabad: Chaitanya Publishing House, 1980), p.62.

components of current assets and current liabilities. "The funds statement is a method by which we study the net funds flow between two points in time . . . . The funds statement portrays net rather than gross changes between two comparable financial statements at different dates."[22] In effect, the funds statement shows the uses of funds and their sources over a specific period of time. As such a working capital funds statement will be invaluable in analysing the working capital policy of a firm. "Although . . . the statement accounting for change in working capital accounts for the difference in the working capital at the beginning and end of a period, the object in preparing this statement is not to verify the working capital figure as of the end of the period, but rather to obtain a review of the financial activities of a business that have caused a change in working capital and thus in current position."[23] The statement helps to detect imbalances in the uses of funds and their financing.

7.2. Analysis of the Working Capital Management of Cotton Mills in Kerala

In Chapter VI the long-term liquidity or solvency of the cotton mill industry in Kerala was analysed. Here, the short-term liquidity of the mill industry in Kerala shall be examined by analysing the current assets and current liabilities of cotton mills.

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[22] VanHorne, Op.cit., p.137.

[23] Myer, Op.cit., p.108.

7.2.1. Working Capital per Spindle

Net working capital is the excess of current assets over current liabilities. It represents the amount of long-term funds used to finance current assets. It is the margin of safety available to short-term creditors and is therefore a measure of the liquidity of the firm.

The net working capital per spindle of the cotton mills in Kerala for 1980-81 and 1984-85 is presented in Table-7.1.

TABLE - 7.1

Working Capital per Spindle: 1980-81 and 1984-85

Name of mill	1980-81	1984-85
	Rs	Rs
A	64.21	(-)126.05
B	198.57	27.92
C	(-)347.17	(-)287.61
D	(-) 63.20	N.A.
E	77.73	N.A.
F	101.19	76.48
G	(-) 10.12	(-)597.81
H	(-) 4.70	88.91
I	332.41	(-) 79.27
J	N.A.	(-)140.43
K	25.23	(-)268.69
L	436.42	(-)247.66
M	16.66	1.21
N	343.99	(-)109.78
O	290.63	(-)374.79
P	525.26	403.55
Q	87.86	(-) 0.75
R	80.13	N.A.
S	61.38	124.51
T	(-) 20.39	(-)168.64
U	70.73	179.78
V	93.06	(-)193.21
W	(-) 62.64	(-)113.50
Mean	104.42	(-) 90.29

N.A. : Not Available

Source : Calculated from Annual Reports

For calculating the net working capital per spindle in the case of composite mills, the number of looms in such mills have been converted to spindles in the proportion of 1 loom : 50 spindles.

In 1980-81, the average net working capital per spindle is Rs.104.42. However, the individual values vary from Rs.525.26 to (-) Rs.347.17. Six of the 22 mills have negative net working capital figures which means that their current liabilities exceed their current assets.

In 1984-85, the average net working capital per spindle has declined to (-)Rs.90.29. Thirteen mills out of 20 mills whose data are available have negative net working capital figures indicating excess of current liabilities over current assets. It is clear that, in 1984-85, the liquidity of the industry is endangered and the industry faces technical insolvency. Of the seven mills which have positive net working capital per spindle, six are among the eight most profitable mills identified in Chapter III.

Even in 1980-81 which was the most profitable year among the 5 years of study (1980-81 to 1984-85), the average net working capital per spindle seems to be rather low. The 7th Interfirm comparison survey conducted by SITRA among South Indian mills has calculated their average net working capital per spindle as Rs.333 for the calender year 1980 and Rs.348 for the calender year 1981.[24] Current

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[24] Doraiswamy, Financial Performance in Boom and Recession, p.5.

liabilities, in this study, include bank borrowings for working capital, but current liabilities in the SITRA survey do not include bank borrowings for working capital and as a result the net working capital calculated in the SITRA survey would be slightly overstated. Nevertheless, the average net working capital per spindle for the Kerala mills is less than one-third of the figure for the SITRA mills.

7.2.2. Liquidity Ratios

The current ratio and the acid-test ratio are two specific ratios used to measure the liquidity of a firm.

Table-7.2 gives the current ratios and acid test ratios of cotton mills in Kerala for two years 1980-81 and 1984-85. Acid test ratio has been calculated by dividing quick assets (=current assets - inventory) by quick liabilities (=current liabilities - bank borrowings for working capital).

TABLE - 7.2

Liquidity Ratios: 1980-81 and 1984-85

Name of mill	1980-81		1984-85	
	Current Ratio	Acid test Ratio	Current Ratio	Acid test Ratio
A	1.10	0.65	0.73	0.39
B	1.26	0.70	1.04	0.62
C	0.82	0.59	0.88	0.53
D	0.88	0.95	N.A.	N.A.
E	1.21	0.55	N.A..	N.A.
F	1.46	0.77	1.20	0.45
G	0.99	0.70	0.63	0.89
H	0.99	0.44	1.09	0.55
I	2.48	2.24	0.88	0.78
J	N.A.	N.A.	0.78	0.51
K	1.06	0.23	0.55	0.23
L	2.45	0.92	0.77	0.54
M	1.02	0.70	1.00	0.58
N	1.82	0.89	0.89	0.23
O	1.94	0.76	0.54	0.30
P	4.47	3.02	1.96	2.47
Q	1.15	0.69	1.00	0.40
R	1.01	0.54	N.A.	N.A.
S	1.16	0.47	1.26	1.19
T	0.97	0.46	0.93	0.28
U	1.21	0.79	1.56	1.05
V	1.27	0.53	0.67	0.19
W	0.87	0.57	0.91	0.55
Mean	1.44	0.83	0.96	0.64

N.A. : Not Available

Source : Calculated from Annual Reports

In 1980-81, the most profitable of the five years studied, the average current ratio is 1.44 and the average acid test ratio is 0.83. Out of the 22 mills studied only 3 mills have current ratios exceeding the traditional standard of 2 and only 2 mills have acid test ratios exceeding the traditional standard of 1. Thus, by traditional standards, the liquidity of the mill industry even in 1980-81, the most profitable year of study, is weak.

The liquidity of the industry has further worsened in 1984-85, the last year of study. The average current ratio is 0.96 and the average acid test ratio is 0.64. Among the 20 mills studied, no mill was able to record a current ratio of 2, the traditional standard for current ratio; 12 of them have current ratios less than 1 which means that their current assets are less than their current liabilities. In respect of the acid test ratio, 3 mills have acid test ratios exceeding 1, the traditional standard. All the other mills have ratios less than 1 and as many as 8 mills have acid test ratios less than 0.50, which means that their quick assets are less than 50 percent of their quick liabilities.

Thus, in 1980-81, the liquidity of the industry was poor by traditional standards. But, in 1984-85, the liquidity has been totally eroded.

It would be enlightening to analyse the reason for the drop in current ratio as well as acid test ratio in 1984-85. In Table-7.3 the amounts of current assets and current liabilities in 1984-85 have been expressed as percentages of the amounts of current assets and

current liabilities in 1980-81. These percentages are index numbers which reveal the growth in current assets and current liabilities over the base year 1980-81.

TABLE - 7.3

Index Number of Current Assets and Current Liabilities : 1984-85

(1980-81 = 100)

Name of mill	Current Assets	Current Liabilities
A	94	142
B	80	97
C	139	129
F	140	170
G	110	174
H	214	194
I	130	366
J	90	108
K	75	143
L	115	365
M	136	138
N	165	338
O	85	304
P	148	338
Q	173	199
S	135	124
T	261	273
U	121	93
V	89	170
W	265	255

Source : Calculated from Annual Reports

The salient feature emerging from the table is that, in the case of 15 mills out of a total of 20, the index number of current liabilities are higher than the index number of current assets. It means that current liabilities have increased more than the current assets during the period of study. Therefore, the erosion in liquidity in 1984-85 is the consequence of higher growth in current liabilities than current assets.

7.2.3. The Structure of current assets

The current assets of a firm comprise of different short-term assets with different degrees of liquidity. The proportion that each type of current asset bears to the total has a significant influence on the overall liquidity of the firm. "Since the current ratio groups all the current assets into a single figure, though these separate assets vary substantially in their nearness to cash, a worthwhile device for testing the goodness of a current ratio is to determine the percentage composition of the individual items."[25]

The cotton mills in Kerala have five types of current assets: stock, debtors, cash and bank balances, loans and advances, and other current assets. Loans and advances include such items as advances for purchase, advances to staff and other operatives, advance payment of income tax and tax deducted at source, sundry deposits with government departments and prepaid expenses. Other current assets include

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[25] Howard and Upton, Op.cit., p.131.

interest accrued on investments, deposits and loans and other income accrued and receivable. In the case of units taken over by NTC, other current assets also include the balance amount due from the Commissioner of Payments as a result of the nationalisation.

Table-7.4 presents the amount invested in each type of current asset as a percentage of total current assets, averaged for 5 years, for 23 cotton mills in Kerala.

TABLE - 7.4

Structure of Current Assets

(Average for 5 years: 1980-81 to 1984-85)

Name of mill	As percentages of total current assets				
	Stock	Debtors	Cash and Bank Balance	Other Current assets	Loans and Advances
A	59.27	4.82	3.73	0.89	31.29
B	64.22	8.36	5.35	-	22.07
C	48.93	38.19	4.58	0.17	8.13
D	54.88	8.95	1.83	-	34.34
E	77.09	8.01	6.39	-	8.51
F	75.35	7.24	5.01	0.02	12.38
G	59.23	18.99	0.84	2.88	18.06
H	71.97	12.26	2.95	-	12.82
I	50.28	10.96	2.30	7.40	29.06
J	43.59	30.04	0.87	-	25.50
K	74.86	6.22	1.53	-	17.39
L	38.12	6.38	3.40	30.17	21.93
M	45.30	5.76	3.49	0.78	44.67
N	87.75	4.94	2.70	0.67	3.94
O	53.54	8.37	0.86	10.40	26.83
P	23.65	2.02	7.71	4.86	61.76
Q	73.89	7.20	6.88	-	12.03
R	62.52	31.59	0.75	-	5.14
S	59.46	18.30	2.94	1.85	17.45
T	67.01	13.88	4.76	-	14.35
U	57.84	17.45	3.29	-	21.42
V	76.92	8.00	0.61	0.33	14.14
W	58.83	7.27	15.35	0.33	18.22
Mean	60.20	12.40	3.83	2.64	20.93
Range	64.10	36.17	14.74	30.17	57.82

Source: Calculated from Annual Reports

Stock or inventory constitutes the largest proportion of current assets of cotton mills, followed by Loans and advances, Sundry debtors, Cash and bank balances, and Other current assets. There is no uniformity among mills in the proportion of stock as a percentage of total current assets. The percentages vary from 23.65 to 87.75. Except in the case of 5 mills, stock constitutes more than 50 percent of total current assets. In the case of Loans and advances too, there is wide variation among mills in the proportion of Loans and advances as percentage of total current assets. Cash and bank balances and Other current assets form very small percentages of total current assets. Sundry debtors are less than 20 percent of total current assets except in the case of 3 mills.

7.2.4. Structure of Current Liabilities

Current liabilities are short-term sources of funds which are used to finance the investment in current assets and sometimes even the investment in fixed assets. Cotton mills in Kerala have had recourse to five types of short-term liabilities. They are: (1) Creditors and other current obligations such as accrued expenses, bills payable, unclaimed dividends, trade deposits from dealers, etc., (2) Interest accrued on loans, (3) Provisions for taxation, gratuity, dividend, etc., (4) Bank borrowings for working capital on pledge and hypothecation of inventory, and (5) Fixed deposits and short-term loans.

Table-7.5 gives the contribution of each source of short-term finance as a percentage of total current assets, averaged for 5 years, for 23 cotton mills in Kerala.

TABLE - 7.5

Structure of Current Liabilities
(Average for 5 years: 1980-81 to 1984-85)

Name of mill	As percentages of total current assets				
	S. Creditors & Other current obligations	Interest accrued	Provi-sions	Bank Borrow-ings	Deposits & short-term loans
A	51.35	1.05	20.20	22.33	22.00
B	28.69	1.98	19.24	37.96	7.83
C	90.27	0.70	2.67	28.28	2.19
D	49.15	-	8.36	64.98	3.64
E	76.11	-	15.22	51.34	-
F	40.29	1.08	1.63	34.38	0.20
G	48.65	11.24	4.80	71.24	4.80
H	39.74	0.22	13.11	44.53	2.23
I	33.35	6.22	4.74	37.59	-
J	38.14	29.41	52.59	15.29	0.69
K	98.05	0.29	-	44.20	3.25
L	39.62	11.52	3.64	28.52	-
M	26.42	11.34	23.81	25.89	31.86
N	27.96	5.17	-	46.82	-
O	80.24	0.17	6.70	28.56	-
P	20.61	0.17	4.66	9.71	-
Q	50.97	1.39	1.68	42.88	15.34
R	69.26	3.67	0.08	28.22	-
S	37.52	-	19.52	28.54	-
T	95.59	-	-	21.07	-
U	43.56	1.23	3.24	30.44	-
V	46.65	5.92	30.04	32.27	-
W	66.92	0.56	0.50	40.13	8.22
Mean	52.14	4.06	10.28	35.44	4.45
Range	77.44	29.41	52.59	61.53	31.86

Source: Calculated from Annual Reports

The two major sources of short-term finance used by cotton mills are 'Creditors and other current obligations' and 'Bank borrowings'. Their proportion in each mill, however, varies but these two sources have been used by all the mills. 'Interest accrued on loans' and 'fixed deposits and short-term loans' have contributed only small amounts to total short-term financing. Moreover, these two sources have not been used by all the mills. 'Provisions' have been used by most mills to finance current assets to the extent of about 10%, on an average.

Thus, while inventory constitutes the major item of current assets of cotton mills, creditors and other current obligations, and bank borrowings obtained on the security of inventory form their major sources of short-term finance.

7.2.5. Structure of Inventory

A detailed analysis of inventory is necessary as it is the major item of current assets of cotton mills and forms the security for working capital loans from banks which is one of the two major sources of short-term finance. Table-7.6 presents the structure of inventory of cotton mills in Kerala for the 5 year period 1980-81 to 1984-85.

TABLE - 7.6

Structure of Inventory

(Average for 5 years: 1980-81 to 1984-85)

Name of mill	As % of total inventory			
	Raw materials	Finished & Semi-finished goods	Stores & Spares	Others
A	37.55	48.16	14.25	0.04
B	59.53	34.72	5.75	-
C	38.93	53.79	7.12	0.16
D	23.40	54.05	20.35	2.20
E	49.33	36.36	13.48	0.83
F	37.93	42.08	19.87	0.12
G	22.07	64.11	13.80	0.02
H	59.71	34.34	5.95	-
I	40.91	47.02	12.07	-
J	44.32	36.01	19.43	0.24
K	32.04	58.73	9.23	-
L	56.30	34.36	9.34	-
M	68.15	27.34	4.51	-
N	63.44	26.28	9.15	1.13
O	39.86	49.80	10.34	-
P	50.86	40.49	8.57	0.08
Q	57.00	33.63	9.37	-
R	23.06	61.54	15.27	0.13
S	40.54	47.30	12.16	-
T	64.20	29.77	5.59	0.44
U	45.66	51.91	2.43	-
V	33.57	45.19	14.96	6.28
W	68.16	25.75	6.09	-
Mean	45.94	42.73	10.83	0.50

Source: Calculated from Annual Reports

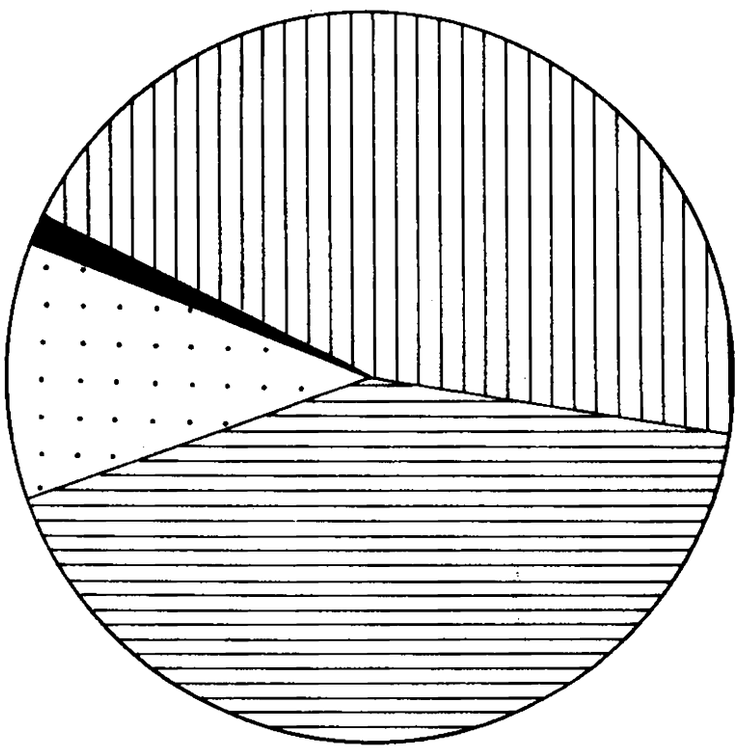
In the table, each item of inventory such as raw materials, finished and semi-finished goods (including cotton waste), stores and spares, and others (including loose tools, packing materials), is expressed as a percentage of total inventory. Raw materials and Finished and semi-finished goods are the two major components of inventory, accounting for 45.94% and 42.73% respectively of total inventory, on an average. But the relative proportion of these two items vary from mill to mill, ranging from 22.07% to 68.16%. Stores and spares make up about 10%, on an average, of total inventory. Other items are negligible. The structure of inventory is illustrated in Figure 7.1.

7.2.5.1. Level of Inventory Holding

Raw materials are stored to ensure smooth and continuous production while finished goods are stocked to facilitate continuous sales. Over-investment or under-investment in raw materials and finished products can be detected by relating the investment in these items to their annual consumption or production. In Table-7.7 each item of inventory is expressed in terms of their annual consumption or production. Raw materials and stores and spares are expressed as so many months' value of consumption, finished and semi-finished goods as so many months' value of production, averaged for the 5 year period 1980-81 to 1984-85.

Fig.7.1 STRUCTURE OF INVENTORY OF COTTON MILL INDUSTRY IN KERALA

1980 - 81 TO 1984 - 85



Others ..... 0.5 %

Stores and spares ..... 11 %

Finished and semi-finished goods .. 42.5%

Raw materials ..... 46 %

TABLE - 7.7

Level of Inventory Holding

(Average for 5 years: 1980-81 to 1984-85)

Name of mill	Raw materials as months' value of consumption	Finished & semi-finished goods as months' value of production	Stores & Spares as months' value of consumption
A	2.44	1.44	10.17
B	3.71	1.26	4.85
C	2.15	1.82	6.03
D	1.88	2.49	46.17
E	4.02	1.48	15.11
F	2.85	1.35	7.41
G	2.71	3.68	7.72
H	3.36	1.11	5.56
I	1.94	1.23	9.69
J	1.92	0.91	40.60
K	1.86	2.06	10.47
L	2.77	1.00	11.03
M	4.09	0.86	3.91
N	5.85	1.60	34.88
O	2.43	1.61	9.38
P	2.11	0.93	4.19
Q	4.83	1.45	11.42
R	2.27	2.52	5.11
S	4.18	2.06	12.47
T	4.13	1.70	11.82
U	3.16	2.25	4.82
V	3.04	2.10	86.43
W	2.21	0.65	6.65
Mean	3.04	1.63	15.91

Source: Calculated from Annual Reports

The overall average level of inventory holding for the industry is about 3 months' value of consumption for raw materials, about 1 1/2 months' value of production for finished and semi-finished goods, and about 16 months' value of consumption for stores and spares. In the case of stores and spares, the levels of holding of individual mills vary widely. The median level of holding for stores and spares is 9.69, i.e. about 9 1/2 months' value of consumption.

The maximum levels for holding inventory for the cotton and synthetic textile industry suggested by the Tandon Committee are:[26]

Raw materials: Cotton -

-Bombay and Ahmedabad areas - 2 months' consumption

-Eastern areas - Bihar, Orissa, W. Bengal and Assam -

- 3 months' consumption

-Other than the above areas - 2 1/2 months' consumption.

Stocks-in-Process: 3/4 month's cost of production

(Composite textile mills)

1/2 month's cost of production (Other mills)

Finished goods: 2 1/4 months' cost of sales.

According to the Tandon Committee norms, the maximum level of raw material holding is 2 1/2 months' consumption for cotton mills in Kerala. But the average raw material holding for the mills included in this study amounts to over 3 months' consumption. This indicates some degree of overinvestment in raw materials.

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[26] Vasant Desai, Indian Banking: Nature and Problems (Bombay: Himalaya Publishing House, 1979), p.168.

But, in the case of finished and semi-finished goods, the average investment of mills included in this study is well below the maximum levels suggested by the Tandon Committee.

The investment in stores and spares is obviously rather excessive, representing funds blocked up unnecessarily.

7.2.5.2. Inventory Turnover Ratios

The inventory turnover ratio measures the conversion of finished and semi-finished goods into sales. It indicates the velocity of conversion. In Table-7.8 the inventory turnover ratios of 23 cotton mills, averaged for 5 years from 1980-81 to 1984-85, are presented.

TABLE - 7.8

Inventory Turnover Ratios
(Average for 5 years: 1980-81 to 1984-85)

Name of mill	Turnover (Times)
A	9.25
B	9.95
C	8.18
D	4.68
E	8.53
F	8.86
G	3.43
H	11.51
I	11.11
J	13.00
K	7.73
L	13.23
M	17.60
N	10.11
O	8.01
P	15.62
Q	10.12
R	4.73
S	6.73
T	8.01
U	8.12
V	6.05
W	20.67
Mean	9.79

Source: Calculated from Annual Reports

The turnover ratios vary between 3.43 and 20.67. The more profitable mills are generally seen to have higher turnover ratios, while the less profitable mills are seen to have generally lower turnover ratios. The mean turnover ratio is 9.79. It means that the average investment in finished and semi-finished goods is about 1.23 months' value of sales. The investment in finished and semi-finished goods seems to be reasonable and its turnover seems to be satisfactory.

7.2.5.3. Financing of Inventory

Short-term loans are raised from banks on the security of inventory - by pledging or hypothecating inventory. Raw materials are usually purchased on credit. As a result their accumulation is financed to some extent by sundry creditors. Thus, bank borrowings and sundry creditors are the two important sources used to finance the build up of inventory.

Table-7.9 shows to what extent these two sources have been availed of by cotton mills in Kerala to finance their inventory holdings. Bank borrowings and bank borrowings plus sundry creditors have been expressed as percentages of inventory, averaged for the five year period 1980-81 to 1984-85.

TABLE - 7.9

Financing of Inventory Holdings
(Average for 5 years: 1980-81 to 1984-85)

Name of mill	As % of inventory	
	Bank borrowings	Bank borrowings plus S. Creditors
A	38.27	71.61
B	59.07	N.A.
C	58.90	N.A.
D	118.54	145.39
E	66.35	106.88
F	45.61	N.A.
G	119.15	174.75
H	62.34	78.83
I	73.84	108.18
J	34.95	106.24
K	60.30	112.16
L	71.27	158.02
M	58.55	85.11
N	53.29	71.91
O	50.73	139.29
P	40.95	95.31
Q	57.97	92.94
R	45.33	97.26
S	50.73	83.88
T	31.76	103.14
U	53.60	71.93
V	41.76	61.67
W	69.05	109.89
Mean	59.23	103.72

N.A. : Not Available

Source: Calculated from Annual Reports

On an average, bank borrowings finance upto about 60% of total inventory holdings. Bank borrowings and sundry creditors together generally provide sufficient funds to cover the total inventory holdings. In some cases, they provide a little more and in some other cases a little less. It is mostly in the case of the less profitable mills that these two sources provide more funds than are necessary to finance the inventory holdings. It means that these sources are also used to finance current assets other than inventory. It is an indication of an imbalance in inventory financing by the less profitable mills.

7.2.6. Investment in Sundry Debtors

Every firm which sells goods on credit will have some amount of such sales outstanding on any particular date. Such outstanding credit sale is an item of current asset whose magnitude can be measured in terms of the number of days' sales outstanding, otherwise known as the average collection period.

7.2.6.1. Average Collection Period

The average collection period of cotton mills in Kerala, averaged for the 5 year period 1980-81 to 1984-85, is presented below in Table-7.10.

TABLE - 7.10

Average Collection Period
(Average for 5 years: 1980-81 to 1984-85)

Name of mill	No. of days
A	7.14
B	12.62
C	81.78
D	25.04
E	13.34
F	9.63
G	58.27
H	14.53
I	17.15
J	51.13
K	8.87
L	14.83
M	9.78
N	10.94
O	13.90
P	5.44
Q	15.92
R	63.95
S	39.87
T	25.31
U	37.52
V	15.05
W	9.04
Mean	24.39

Source: Calculated from Annual Reports

The overall average collection period for the cotton mills in Kerala works out to 24.39 days. A better picture of the average collection period of individual mills can be seen from a frequency distribution of average collection period grouped into different classes, as presented in Table-7.11.

TABLE - 7.11

Frequency Distribution of Average Collection Period

Average collection period (No. of days)	No. of mills
0 - 10	6
10 - 20	9
20 - 30	2
30 - 40	2
40 - 50	NIL
50 - 60	2
Above 60	2
Total	23

It can be seen from the frequency distribution that 15 out of 23 cotton mills have collection periods of less than 20 days. The more profitable mills generally have lower collection periods whereas the four mills which have collection periods above 50 are four of the least profitable mills.

The norm suggested by the Tandon Committee for 'Receivables and Bills purchased' in the case of cotton and synthetic textiles industry is 2 1/4 months' sales.[27] In the balance sheets of cotton mills bills purchased are not shown separately, they are included in Sundry debtors. The investment in Receivables or Sundry Debtors of cotton mills in Kerala is far below the maximum investment recommended by the Tandon Committee which is approximately 67.5 days' sales (2 1/4 months' sales). Only one mill has sundry debtors exceeding the Tandon Committee norm; 17 mills have sundry debtors of less than one month's sales which is below half of the norm suggested.

The level of investment in sundry debtors seems to be generally rather low among cotton mills in Kerala. The more profitable among them seem to have still lower investments in sundry debtors.

7.2.7. Working Capital Funds Flow Statement

Working Capital Funds Flow Statement is a statement which shows the sources of working capital funds and their uses over a specified period. Table-7.12 shows the combined net increases and decreases in the various components of current assets and current liabilities of 20 cotton mills in Kerala during the year 1984-85. The table reveals how working capital funds of cotton mills have been raised and used during the year 1984-85.

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[27] Ibid.

TABLE - 7.12

Working Capital Funds Flow Statement for the Year 1984-85

(Rs. in lakhs)

Particulars	Amount	Amount
A. SOURCES		
i) Net decrease in:		
Cash and Bank Balances		4.22
ii) Net Increase in:		
Sundry Creditors & Other current liabilities	276.35	
Interest accrued	50.55	
Bank borrowings for working capital	577.99	
Deposits & Other short-term loans	54.67	
	------	959.56

		963.78

B. USES		
i) Net increase in:		
Stock	583.80	
Sundry Debtors	161.92	
Other current assets	25.97	
Loans & Advances	115.60	
	------	887.29
ii) Net decrease in:		
Provisions		24.31
iii) Net decrease in working capital		52.18

		963.78

Source: Annual Reports

Working capital funds have been raised mainly by increasing the amounts of the various components of current liabilities. Bank borrowings for working capital have provided about 60% of funds raised; Sundry creditors and other current liabilities have provided about 29% of the funds. These funds have been utilised for additional investment in various items of current assets and for reduction of working capital and provisions to some extent. About 61% of the funds raised have been invested in inventory, about 17% in debtors and another 12% in Loans and advances.

It has been observed earlier in this chapter that in 1984-85, the last year included in the study, the liquidity of the industry has considerably worsened due to larger increase in current liabilities than current assets. The reason for the erosion in liquidity in 1984-85 can be clearly seen in the Working Capital Funds Flow Statement shown in Table-7.12 above. The total net increase in various items of current liabilities amounts to Rs.959.56 lakhs, but the total net increase in current assets amounts to only Rs.887.29 lakhs. Rs.52.18 lakhs raised by way of current liabilities have been applied in reducing the net working capital, i.e., the long-term funds used to finance current assets. Similarly, Rs.24.31 lakhs have been applied in reducing provisions which is an internal source of funds. Thus, short-term external sources of funds have been used to replace long-term sources and internal sources of funds. This is obviously an undesirable policy in managing the working capital and it is this policy which has brought the industry to the brink of technical insolvency.

7.3. Summary of Findings

In this Chapter, the working capital and its management by cotton mill companies have been analysed.

The average net working capital of cotton mills in Kerala seems to be lower than that of cotton mills in South India as a whole. It has declined from a positive figure in 1980-81 to a negative figure in 1984-85, indicating an excess of current liabilities over current assets.

The current ratios and acid test ratios of cotton mills are below the traditional standards even in 1980-81 which was the most profitable among the 5 years studied. The ratios have become still more unfavourable in 1984-85, the last year of study, thus indicating a fall in the liquidity of the industry during the period of study. This fall in liquidity is the result of higher growth in current liabilities than in current assets of cotton mills over the 5 year period.

Stock, Loans and advances and Sundry Debtors are the three important items of current assets. 'Sundry Creditors and other current liabilities' and bank borrowings for working capital are the two major sources of short-term finance used by cotton mills in Kerala.

Inventory or stock consists of raw materials, finished and semi-finished goods, stores and spares and other items. Raw materials and finished and semi-finished goods account for the bulk of inventory holdings. There seems to be over-investment in raw materials and

stores and spares. But the investment in finished and semi-finished goods seems to be reasonable, with a satisfactory turnover too. The investment in inventory has been fully financed by bank borrowings and sundry creditors. In the case of the less profitable mills these two sources have been used to finance other current assets too, besides inventory.

The investment in Sundry debtors by cotton mills seems to be rather low; it is far below the norm suggested by the Tandon Committee for cotton textile industry. The proportion of Sundry debtors in total current assets is also low. The investment in Loans and Advances seems to be high in view of the fact that its proportion in total current assets is higher than the proportion of Sundry debtors.

Analysis of working capital funds flow in 1984-85 reveals that working capital funds have been raised from short-term external sources such as bank borrowings and sundry creditors. These funds have been used mostly for additional investment in current assets, but a part of it has been applied in reducing the net working capital and provisions, the former being long-term funds used for financing current assets and the latter being internal sources of finance. The funds flow analysis highlights the heavy reliance on short-term sources of finance which has placed the industry in a precarious position as far as short-term liquidity is concerned.

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CHAPTER - VIII

SUMMARY AND CONCLUSIONS

The cotton textile industry consists of three distinct sectors, namely, mills, powerlooms and handlooms. This study is confined to the mill sector of the cotton textile industry. The cotton mill industry is the oldest industry in India. Even today it occupies a prominent position in the industrial structure of the country. But, since the sixties, the industry has been affected by one crisis after another so much so it has now been dubbed a 'sick' industry.

8.1. The Problem, Objective and Methodology

The cotton mill industry is one of the important medium and large-scale industries in the State of Kerala. Due to the widespread development of the handloom industry in the State, there is an environment conducive to the growth of cotton spinning mills which produce yarn, the raw material required by the handloom industry. New spining mills are being commissioned. But the performance of the existing cotton spinning and weaving mills in the State is not quite satisfactory. Hence an analysis has been carried out into the profitability and financial position of the industry in Kerala. The objective of the study is to make a financial analysis of the industry covering various aspects such as cost structure, productivity, asset structure, financial structure and working capital management.

The study extends over a period of five years from 1980-81 to 1984-85 and covers all the textile mills in the State. The relevant data have been collected directly from the mills through a questionnaire and also from their Annual Reports. These have been analysed by using various techniques such as Ratio analysis, Common-size method of analysis, Correlation analysis, Inter-firm comparison, Index number and Funds Flow analysis. The results have been compared, wherever possible, with the figures for the cotton mill industry in Tamil Nadu available in the studies conducted by SITRA (the South India Textile Research Association).

8.2. Present Position of the Industry in Kerala

The first cotton mill in Kerala was set up as early as 1884. But the industry really developed only after independence. At present, there are 27 cotton mills in Kerala; 22 of them are spinning mills and 5 of them composite mills. The three industrially well-developed districts of Ernakulam, Trichur and Cannanore account for half the number of mills in the State. Most of the other districts have one or two mills each. Out of the 27 textile mills in the State, 10 are in the public sector, i.e., they are owned by the National Textile Corporation, Kerala State Textile Corporation or the Government of Kerala. Fourteen mills are in the private sector and three are in the co-operative sector. The cotton mills in Kerala are mostly of small and medium size. The majority of mills have less than 30,000 installed spindles. The composite mills in the State have installed looms ranging from 300 to 400.

The total paid up equity capital of 23 mills as on 31st March 1985 amounted to Rs.17.61 crores. The total sales turnover of 20 mills in Kerala for the year 1984-85 was Rs.103.63 crores. During the year 1984-85, 13752 persons were directly employed in 23 cotton mills in Kerala.

8.3. Profitability

In the financial analysis of an industry, the factor to which the analyst's attention focuses first is profitability. In order to measure the profitability of cotton mills in Kerala, eight ratios have been used in this study. They are:

i) Gross profit margin
ii) Operating profit margin
iii) Earnings per share
iv) Return on capital employed
v) Return on assets
vi) Operating assets turnover
vii) Gross profit per spindle
viii) Operating profit per spindle

These ratios are used to assess the profitability of mills in relation to their sales and also in relation to their investments.

The profitability of the industry is analysed for the 5 year period 1980-81 to 1984-85 by computing the various profitability ratios of all cotton mills for all the 5 years from 1980-81 to 1984-85.

Two features emerge from such an analysis: (i) decline in profitability over the period, and (ii) inter-firm variation in profitability.

Of the five years studied, 1980-81 was the most profitable year for the industry. The profitability declined steeply in 1981-82, making it the least profitable year. Even though the profitability of the industry increased during the subsequent years, it did not reach the level of 1980-81. The industrial environment during the period of study partly accounts for the decline in profitability. Except 1980-81, the remaining four years of study were marked by strikes, power-cuts and recessionary trends.

There is considerable inter-firm variation in the profitability of individual mills. Operating profits vary much more than gross profits as between individual mills. This indicates wide variation among mills in respect of depreciation charges and interest expenses on account of widely varying levels of investment in fixed assets and borrowings in individual mills. Similarly, the inter-firm variation in profitability is much wider in respect of rates of return on capital employed as compared to rates of gross profit margin. This indicates that there is wider variation in the capital employed of different mills than in their sales. The wide variation in capital employed, by producing variation in interest payments, becomes a factor contributing to variation in operating profits among mills.

Out of the 23 mills whose profitability has been analysed for five years, eight mills show better than median performance consistently in the various ratios used (seven of these mills being private sector mills); seven mills show worse than median performance consistently (five of them being public sector mills).

The profitability of the industry during 1980-81 has been analysed in detail. An important characteristic which is revealed by the analysis is the inter-firm variation in profitability which is wider in the case of operating profits than gross profits. The profitability of the industry in Kerala during 1980-81 is lower than the profitability of mills in South India as a whole, especially in respect of operating profits on account of higher depreciation and interest in the case of Kerala mills.

During 1980-81, five mills which have less than median gross profit margins have higher than median rates of return on capital employed on account of their high asset turnover ratios. Five other mills have shown a reverse position, that is, they have higher than median gross profit margins but have recorded lower than median rates of return on capital employed as a result of their low asset turnover ratios. This highlights the importance of achieving good asset turnover to ensure high profitability on investment.

Between 1980-81 and 1984-85, five mills have improved their financial performance in relation to the other mills while in the case of one mill its relative performance has worsened during this period.

There is considerable profit variability between years and between mills in the case of cotton mills in Kerala. Such variability can be reduced only when the factors which contribute to the variability are identified.

8.4. Cost Structure and Productivity

8.4.1. Cost Structure

To understand the profit variability among cotton mills, it is to the sales volume and cost structure of these mills that attention should be focused. As there are only 4 composite units among the mills studied, detailed analysis of cost structure and productivity has been carried out only of the spinning mills. To compare the cost structure of different mills, the costs have been classified into five components, namely, material, labour, other costs, interest and depreciation and each component of cost has been expressed as a percentage of the value of output.

The median values of the average material cost, labour cost and other costs of cotton spinning mills in Kerala for the 5 year period 1980-81 to 1984-85 are 57.56 percent, 19.05 percent and 14.21 percent respectively of the value of output. However, the inter-mill variation in labour cost is almost thrice the variation in material cost. Moreover, there is significant negative correlation between gross profit margin and labour cost. Variations in labour cost account for almost half the variations in gross profit margins.

On comparing the cost structure of the most profitable spinning mills and the least profitable spinning mills in the State, it is seen that the two groups of mills differ from each other only in respect of the labour cost. Material cost and other costs of the two groups are the same. But the average labour cost of the group of the least profitable mills is almost double that of the most profitable mills.

The median values of the average interest payments and depreciation allowances of spinning mills in Kerala for the 5 year period 1980-81 to 1984-85, as a percentage of the value of output, are respectively 7.14 and 4.98. There is equally wide inter-mill variation in the case of both interest and depreciation. But there is moderate correlation between operating profit margins and interest payments only; the correlation between operating profit margins and depreciation allowances is negligible. Inter-mill variation in interest payments, by itself, accounts for only 25% of the variations in operating profit margins of individual mills. However, variations in gross profit margins and interest payments taken together account for over 50% of variation in operating profit margins among mills.

Comparing the two groups of the most profitable spinning mills and the least profitable spinning mills, it is seen that interest expense is slightly higher for the least profitable mills but depreciation charges are higher for the most profitable mills probably on account of their continuing modernisation.

The labour cost, interest expense and depreciation allowance of spinning mills in Kerala seem to be higher than those of spinning mills in South India as a whole.

From the study of the cost structure of spinning mills, two conclusions can be drawn:

(i) Labour cost has a significant influence on the profits of a mill and is one of the determinants of profit variation among mills.

(ii) Interest cost is another factor which contributes to variations in operating profits among mills.

8.4.2. Productivity

For analysing the sales volume of spinning mills, the value of output of individual mills has been expressed in terms of the installed spindles of each mill. The average per spindle output values of individual mills vary widely between Rs.2601 and Rs.761. Such extensive variation in output values requires further analysis.

The value of output is determined by the quantity of production and the price realised per unit of output. Generally, finer counts of yarn secure higher prices; but the finer the count produced, the lower the production per spindleshift. A mill which spins finer counts is likey to secure lower production per spindleshift but higher price per kg. of yarn sold; a mill which spins coarser counts is likely to secure higher production per spindleshift but lower price per kg. of yarn sold. It is seen that differences in

price realisation per unit of output do not contribute to variations in total values of output of different mills. It means that variations in output values are the result of variations in quantity of production.

The quantity of yarn produced in a spinning mill is the function of two factors: (i) production rate (machine productivity) measured in terms of production per spindleshift, and (ii) spindle utilisation (machine utilisation) measured as a percentage of installed spindles. A multiple correlation analysis has revealed that 76 percent of variations in output values of different mills are accounted for by the variations in machine productivity and machine utilisation, the former accounting for about 50% and the latter for about 25% of the variations.

The output values of spinning mills are also found to have a significant correlation with labour productivity, measured in terms of quantity of yarn produced per rupee of wages.

Thus variations in output values of spinning mills are caused by variations in machine productivity, machine utilisation and labour productivity. But the variations in output values are not directly related to profit variations among mills; there is no association between variations in output values and variations in profitability ratios. Since the same output may be produced with different values of raw materials, the determining factor as regards profitability is concerned, is the gross value added or the net output value which

is the total value of output minus the cost of raw materials. A significant positive correlation is found between profitability ratios and the gross value added.

From the above analysis of variations in output values, the following conclusions can be drawn:

(i) There is extensive inter-mill variation in total output values.

(ii) The variations in output values are caused by variations in machine productivity, machine utilisation and labour productivity.

(iii) Price realised per unit of output and the types of counts produced (i.e. pattern of production) do not contribute to variations in output values.

(iv) Gross value added (i.e. the net output value) is positively correlated to the profitability of mills.

Analysis of cost structure and sales volume of spinning mills has brought to light six important factors which influence the profitability of spinning mills. They are: labour cost, interest expense, machine productivity, machine utilisation, labour productivity and gross value added (i.e. the net output value).

8.5. Asset Structure

There are four types of assets in a manufacturing concern: fixed assets, current assets, trade investments and intangible assets.

The major investments of cotton mills in Kerala are in fixed assets and current assets. The investment is expressed per installed spindle to facilitate interfirm comparison. The average fixed assets and current assets per spindle of spinning mills for the 5 years, 1980-81 to 1984-85, are Rs.747 and Rs.686 respectively. However, there is a lot of variation among individual mills in respect of both fixed assets and current assets per spindle. These variations in fixed assets and current assets are not directly correlated to the return on investment of the mills.

Between 1980-81 and 1984-85 there have been increases in the values of fixed assets of various mills on account of their expenditure on modernisation of machinery and plant. A significant positive correlation is found between the expenditure on modernisation and the profitability of the mills on their investment.

The current assets policy of a firm is evaluated with the help of Current assets/Fixed assets ratio. This ratio indicates whether a firm is following a conservative or aggressive current assets policy. Lower CA/FA ratios (i.e. aggressive current assets policy) seem to be associated with higher profitability ratios. Comparing the CA/FA ratios of the most profitable and the least profitable spinning mills, the most profitable mills are generally found to have lower CA/FA ratios, suggesting that they follow a more aggressive current assets policy than the least profitable mills.

The utilisation of assets in generating sales by different mills is compared with the help of asset turnover ratios. Higher

profitability ratios seem to be associated with lower asset turnover ratios. Similarly, the most profitable spinning mills are seen to have generally lower asset turnover ratios than the least profitable mills. This is due to the higher investment in assets by the more profitable mills on account of their continuing expenditure on modernisation; it is not a sign of deficient sales on the part of the more profitable mills.

Two conclusions can be drawn from the analysis of investment in operating assets by spinning mills:

(i) Expenditure on modernisation of fixed assets is an important factor contributing to higher profitability of mills.

(ii) An aggressive current assets policy (i.e. employing lesser amounts of current assets) also helps in earning higher profits.

8.6. Financial Structure

The combination of different sources of finance employed by a firm in financing its assets represents the firm's financial structure. The financial structure of a firm has an important bearing on the success or failure of the firm because the debt-equity mix in the financial structure has important implications for the shareholders' earnings and risk.

The important sources of finance utilised by the cotton mills in Kerala are term loans from banks and other financial institutions, short-term borrowings including current liabilities and provisions,

equity capital and reserves. 85 percent of total financing is raised from debt sources - both long term and short term - and only 15 percent is available from net worth for the industry in Kerala as a whole. As between long-term and short-term debt, short-term sources provide 55 percent of total funds and long-term funds amount to 30 percent of total funds for the industry as a whole. Most of the individual mills have more short-term debt than long-term debt. Moreover, the cotton mills in Kerala seem to have more short-term debt than the mills in South India as a whole. In the case of a large number of mills short-term debt is used to finance even the investment in fixed assets.

Over the five year period from 1980-81 to 1984-85, there has been an aggregate additional investment in total assets of the industry amounting to about Rs.30 crores. Over the same period, the net worth of the industry has declined. The additional investment in total assets and the decline in net worth have been financed by long-term and short-term debt. As a result, over 5 years the liabilities of the industry have increased more than its assets, by about 25 percent of the increase in assets.

The debt ratios, that is, total debt expressed as percentage of total assets, of cotton mills in Kerala vary between 35 percent and 143 percent. The debt ratios of cotton mills in Kerala are in most cases higher than the maximum ratio prescribed by the Controller of Capital Issues. Seven mills have ratios of 100 percent or more

which means that they are completely financed by debt with no net worth at all.

Most of the mills show poor debt-servicing capacity, measured in terms of their interest coverage ratios. Only five mills have earned sufficient profits to cover their interest charges at least once. The higher the debt ratio, the lower the debt-servicing capacity.

By correlating the earnings per share and debt ratios of various mills for the two years 1980-81 and 1981-82, it is seen that debt percentages ranging from 50 to 75 of total assets seem to represent the optimum range of financial leverage or debt financing for cotton mills in Kerala.

From the analysis of the financial structure of cotton mills in Kerala, the following conclusions emerge:

(i) Owners' funds, i.e. net worth, constitute a very small proportion of total funds invested in the cotton mill industry in Kerala. In other words, the industry is financed mostly by debt.

(ii) The industry depends more on short-term debt than long-term debt, in many cases even to finance the investment in permanent assets (i.e. fixed assets). Such aggressive use of short-term finance exposes the industry to great risk.

(iii) The solvency or long-term liquidity of the industry

has deteriorated over the years as net worth has declined and additional investment in total assets has come to be financed by debt, signifying the complete absence of internal resource generation.

(iv) The proportion of debt in the financial structure of the industry is quite high while the debt-servicing capacity of the industry is extremely low. The optimum debt ratio for the industry seems to be within the range of 50-75 percent of total assets.

The analysis of the financial structure of the industry presents a dismal picture of many mills tottering on the brink of insolvency.

8.7. Working Capital Management

Working capital management involves the administration of both current assets and current liabilities. The working capital policy of a firm holds the key to its liquidity which is a vital factor in its success or failure. The liquidity of a firm is measured by the current ratio and the acid-test ratio. But working capital management involves a risk-return trade-off too; the higher the liquidity, the lower the risk and the lower the return on account of higher investment in current assets, and vice versa.

A large proportion of the current assets of a manufacturing concern would be respresented by inventories. Therefore, the effective management of inventories becomes imperative to maintain the

liquidity of the firm at the optimum level. Another important component of current assets of a firm is the Receivables. Effective management of receivables is as important as proper inventory management.

A working capital funds flow statement will reveal the net changes in the various components of current assets and current liabilities over a specific period. The uses of working capital funds and their sources can be studied with the help of such a working capital funds flow statement.

Net working capital is the excess of current assets over current liabilities. It represents the long-term funds used to finance current assets. Between 1980-81 and 1984-85, the average net working capital per spindle of cotton mills in Kerala declined from Rs.104.42 to (-) Rs.90.29. In 1984-85, only 7 out of 20 mills studied have positive net working capital. The average net working capital per spindle of cotton mills in Kerala is very low compared to that of the mills in South India as a whole.

In 1980-81, the average current ratio of cotton mills in Kerala is 1.44, and the average acid-test ratio is 0.83. Only two or three mills have ratios exceeding the traditional standards of 2 and 1 respectively in respect of current ratio and the acid-test ratio. Both ratios declined in 1984-85, the average current ratio being 0.96 and the average acid-test ratio being 0.64.

Analysing the growth in current assets and current liabilities between 1980-81 and 1984-85, in the form of index numbers, it is seen that current liabilities have increased more than the current assets. It is the higher growth in current liabilities which has led to the decline in liquidity ratios (i.e. current ratio and acid-test ratio) in 1984-85.

Cotton mills in Kerala have five types of current assets. Among these five items, stock or inventory constitutes the largest proportion of current assets, followed by loans and advances, sundry debtors, cash and bank balances, and other current assets. Cotton mills in Kerala have utilised five types of short-term liabilities, namely, creditors and other current obligations, interest accrued, provisions, bank borrowings for working capital, and fixed deposits and short-term loans. Out of these, 'Creditors and other current obligations' and 'Bank borrowings' are the two major sources used.

Inventory comprises of four groups of items, namely, raw materials, finished and semi-finished goods, stores and spares, and other miscellaneous items. 'Raw materials' and 'finished and semi-finished goods' account for about 90 percent of total inventory, the share of each item being more or less equal. Judged by the norms suggested by the Tandon Committee for holding inventory in the cotton textile industry, there is overinvestment in raw materials and stores and spares. The investment in finished and semi-finished goods is, however, well within the norms. The turnover ratios in respect of finished and semi-finished goods seem to be quite satisfactory with a mean ratio of 9.79.

Bank borrowings and sundry creditors are the two important sources used to finance the build up of inventory. Bank borrowings finance upto about 60% of total inventory holdings of cotton mills in Kerala. Bank borrowings and sundry creditors together provide the necessary funds to finance the entire inventory holdings of cotton mills. In the case of most of the less profitable mills, these two sources are used to finance other current assets also besides inventory.

The overall average collection period for cotton mills in Kerala is about 24 days. However, 15 out of 23 cotton mills studied have collection periods of less than 20 days, with the more profitable mills having lower collection periods. Judged by the Tandon Committee norm, the level of investment in sundry debtors is quite low in the case of cotton mills of Kerala.

Working capital funds have been raised mainly by increasing the bank borrowings for working capital and sundry creditors and other current liabilities. These funds have been utilised mostly to increase the investment in inventory, sundry debtors and loans and advances. A part of the funds raised has been applied to reduce the net working capital and provisions. It means that short-term external sources of funds have been used to replace long-term sources of funds (i.e. net working capital) and also internal sources of funds (i.e. provisions).

From the above discussion of the working capital management of cotton mills in Kerala, the following general conclusions emerge:

(i) The liquidity of the industry is poor. Over the period of study, there has been an almost total erosion in liquidity on account of higher increases in current liabilities than current assets.

(ii) The investment in raw materials and stores and spares is excessive. But the investment in finished and semi-finished goods is reasonable and its turnover is satisfactory.

(iii) The investment in sundry debtors is low.

(iv) Short-term external sources of funds are used to replace long-term funds and internal sources of funds.

The analysis of the various facets of the cotton mill industry in Kerala has revealed a plethora of weaknesses: low profitability, inter-mill variation in profitability, low ownership contribution, high debt financing, excessive reliance on short-term finance, scarce internal resource generation, poor debt-servicing capacity, negative working capital, insufficient liquidity, overinvestment in raw materials and stores and spares. The study has also identified some important factors which affect the profitability of mills and produce variations in their profitability. These are labour cost, interest expense, machine productivity, machine utilisation, labour productivity and gross value added. Similarly, two policies are seen to have positive influence on profitability: modernisation of machinery and aggressive current asset utilisation. The study presents the

picture of an industry which is hardly profitable and almost insolvent. Even the few mills which show comparatively better performance are not really all that profitable or financially healthy.

8.8. Recommendations

The cotton mill industry in Kerala is in such poor shape that its restoration requires strong and drastic measures.

The existence of wide variation in profitability among mills is a sign of inefficiency in the industry. "So long as the industry has such a wide variation built into it, it is difficult to make it viable as a whole."[1] Therefore, the primary task would be to reduce the efficiency gap within the industry.

8.8.1. Rationalisation of Labour

Labour is one area where the efficiency gap is most evident. Labour cost and labour productivity are two factors directly contributing to inter-mill profit variability. To increase the profits of a mill, labour cost needs to be reduced and labour productivity needs to be increased. The 7th Interfirm Comparison Survey conducted by SITRA has found that in the case of spinning mills, "mills with wages cost of 18% and above [of sales revenue] invariably could not

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[1] Kasthuri Sreenivasan, India's Textile Industry (Coimbatore: The South India Textile Research Association, 1984), p.90.

make profits even during normal trading conditions or at best earned only very nominal profits."[2]

A mill with high labour cost cannot hope to reduce the labour cost by lowering wage rates. Even if such an attempt is made, the reduction would only be marginal. Substantial reduction in labour cost can be brought about only through rationalisation of labour force ultimately resulting in reduction in the number of employees. Nothing short of such a drastic step will show tangible results.

> In reality, there exists a substantial scope for reducing labour strength of direct and indirect workers in the textile mills by adopting the right principles of work organisation and work loads, without burdening the workers beyond normally accepted limits of workload (say about 75 percent) and without letting the productivity or quality suffer. The scope for reduction in workers' strength in most mills ranges between 20-40 percent . . . . Such a rationalistion of labour means a considerable improvement in profits for textile mills.[3]

8.8.2. Training of Workers

Rationalisation of labour will also bring about an improvement in labour productivity. Labour productivity can be further enhanced by providing systematic training to the workers "so that they learn their jobs in the right manner and with right attitudes and are able

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[2] Indra Doraiswamy, Financial Performance in Boom and Recession (Coimbatore: The South India Textile Research Association, 1984), p.1.

[3] A.R. Garde, "The Indian Textile Industry: From Sickness to Health," Commerce Annual Number 1985, 151, No.3893, 53.

to handle machines with understanding and confidence."[4] According to Kasthuri Sreenivasan, the former Chairman of the National Textile Corporation, "training is one area which has been sadly neglected in the industries of India in general and the textile industry in particular."[5]

8.8.3. Maximisation of Machine Utilisation

However, labour productivity cannot be viewed in isolation. It closely depends on the working conditions in the mill and on the productivity of machines in the mill. Machine utilisation and machine productivity are two factors which are instrumental in producing inter-mill variation in output and profits. To achieve higher levels of profitability in a mill, both machine utilisation and machine productivity should be maximised.

Machine utilisation can be improved mostly by proper planning on the part of management. It does not require any drastic measures. "Loss in machine utilisation arises from many causes. Spare parts not being available, machinery in various departments not properly balanced, electricity shortage, repairs and renovations not attended to on time, absenteeism of workers . . . . But an efficient management would anticipate and plan for these things while a not so efficient management would attend to them after they have arisen."[6]

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[4] Sreenivasan, Op.cit., p.57.

[5] Ibid.

[6] Ibid., p.62.

Higher machine utilisation is, in fact, a reflection of the managerial efficiency of the mill.

8.8.4. Selective and Phased Modernisation of Machinery

Machine productivity, on the other hand, can be improved only by modernisation of textile machinery. But modernisation is a difficult process, still more complicated by a number of recent developments. The technology of textile production has been advancing rapidly during the last two decades. The price of machinery was also increasing rapidly on account of inflation and technological sophistication. Meanwhile, the mills have been finding it difficult to raise the necessary funds for modernisation due to their low profitability and rising interest rates.

It is undoubtedly true that modernisation is essential to achieve higher productivity and better quality. But it is not necessary to go in for wholesale modernisation of the entire mill at once. Such wholesale modernisation is neither profitable on account of the large capital investment required nor practical on account of the shortage of funds. A.R. Garde argues that even from the technological point of view such wholesale modernisation is unnecessary and unwarranted.

> Modernisation of machinery is almost considered a panacea for the ills of the textile mills. Firstly, planning at the level of the government or the industry is often done by assuming that machines older than 25 years (or certainly 40 years) need replacement. Secondly, it is implicity assumed that such replacement

> is profitable. In reality, however, neither of the propositions is correct with reference to machines at all stages of textile production and processing. With appropriate replacement of parts, service life of many machines can be over 60 years. Equally important to note is that the improvement in technical performance, possible without such modernisation is substantial in over 60 percent of mills in India. With better attention to machinery maintenance, to process optimisation and to timely replacement of vital worn out parts, these mills can achieve about two thirds of the gains possible with modernisation of machinery. High technology machines in spinning and weaving/processing are profitable only to about 20-30 percent of the mills in the industry for a part of their production, not to others.[7]

The type of modernisation required by the textile mills is planned and selective modernisation phased over a number of years. The areas of modernisation should be carefully selected; the level of modernisation should be planned after taking into account the present level of technical efficiency and the labour displacement that would result; the implementation should be phased over a period of years depending on the availability of funds. But an important problem in such selective and phased modernisation is the allocation of priorities. Kasthuri Sreenivasan has offered a useful suggestion in this regard. "Priority should be given to those areas where profitability and quality improvement are immediate. This is best achieved when investment is made as near to the consumer as possible; for example, ring frames in a spinning mill and finishing processes in a composite mill."[8]

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[7] Garde, Op.cit., p.53.

[8] Sreenivasan, Op.cit., pp.70-1.

8.8.5. Financial Reorganisation

The financial structure of a firm has to be properly balanced, with the right proportion of equity and debt, to ensure positive operating profit and long-term financial solvency. Too much debt in the capital structure is clearly undesirable as it raises the interest expense and lowers the operating profit. Too much debt is an oppressive burden for a unit, strong enough to strangle it to extinction. "A mill in financial difficulties usually finds itself unable to maintain its productivity. Inability to meet commitments gives room for others to take advantage of the situation."[9]

The majority of cotton mills in Kerala are steeped in debt beyond their debt capacity. Unless they reduce the proportion of debt in their financial structure, they cannot hope to be profitable ever. The only way to reduce the proportion of debt in the capital structure is by raising the proportion of equity. But as these units have hardly any internal resource generation, it ultimately means raising fresh equity shares. However, it will be a difficult proposition trying to raise equity capital for an industry that does not pay dividends. It is indeed a difficult option but it is the only one which will prove successful in the long-run. Meanwhile, the heavily debt burdened mills should try to negotiate with their lenders for some concessions such as moratorium on payment of interest and repayment of principal, rescheduling of repayments, reduction in

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[9] Ibid., p.66.

interest rates, conversion of outstanding interest into term loans, etc. Such measures will help to ease the burden temporarily.

For the success of a business, short-term liquidity is as important as long-term solvency. But in the case of most of the cotton mills in Kerala, liquidity is also endangered. Most mills rely very heavily on short-term debt than long-term debt and current liabilities often exceed current assets with the result that the working capital is negative. What the industry needs are more long-term funds and internal resource generation. But more and more short-term external funds are being raised to replace long-term funds and internal funds. Thus, the working capital management of the industry has tended to worsen the already precarious financial condition of the industry. Since the industry is already overburdened with debt, the long-term funds needed by the industry have to come in the form of equity share capital. Additional share capital introduced into the industry will lower the proportion of debt in the capital structure, provide positive working capital and reduce the excessive reliance on short-term finance. Reorganisation of the financial structure of the industry through the issue of fresh equity capital is the proper step to improve the long-term solvency and short-term liquidity of the industry.

8.8.6. Higher Efficiency in Purchasing

An aggressive current assets policy, that is, lower investment in current assets as compared to the investment in fixed assets,

is seen to be positively correlated to profitability. It means that, to improve profitability, investment in current assets should be minimised. There is overinvestment in stocks of raw materials and stores and spares. Efforts should be made to reduce the investment in raw materials and stores and spares. The overinvestment can be reduced only to the extent the managerial efficiency in purchase of raw materials and stores is improved. Purchasing the right type of raw materials at the least cost and at the right time assumes further significance as the gross value added (i.e. value of output minus the cost of raw materials) is one of the factors contributing to inter-mill variations in profit. Every mill should, therefore, try to maximise the efficiency of its purchasing function so as to reduce the material cost of production and also the investment in raw material stock.

8.8.7. Larger Credit Sales

Selling on credit is a method of augmenting sales; and increased sales turnover is a boon to every business firm. As the investment in debtors by cotton mills in Kerala is quite low, there is scope for higher investment in debtors through more sales on credit. Efforts should therefore be made to increase the sales turnover by offering more credit, if necessary.

A number of remedial measures have been outlined above to solve the various problems brought to light in this study regarding the cotton mill industry in Kerala. They are:

(a) Rationalisation of labour

(b) Training of workers

(c) Maximisation of machine utilisation

(d) Selective and Phased modernisation of machinery

(e) Financial reorganisation

(f) Higher efficiency in purchasing

(g) Larger credit sales

Some of these measures are indeed drastic. The problems of the industry too are deep-rooted. They can be solved by nothing short of such drastic remedies recommended above. Further, the remedial measures suggested are not entirely novel; some of them have already been suggested earlier. The conclusions of this study support the validity of these earlier suggestions.

"As long as human society need clothing, the textile industry would survive; someone or the other will produce cloth since it is in demand and is profitable to do so . . . . The question is, how well are we likely to manage the edifice of the organised textile industry - the spinning mills and the composite mills - which we have erected over a century and a half?"[10]

As we gaze upon it, the textile horizon appears dark and cloudy. But, as Buchanan says, "for India, cotton manufacture is ancient

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[10] Garde, Op.cit., p.55.

glory, past and present tribulation, but always hope."[11] "One looks forward to a time when the textile mills can make the same profits, on an average, as the other industries in India."[12]

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[11] Daniel H. Buchanan, The Development of Capitalist Enterprise in India (New York: The MacMillan Company, 1934), p.195.

[12] Garde, Op.cit., p.55.

APPENDIX - I

Years of Incorporation of Textile Mills in Kerala

Name of mill	Year of incorporation
Malabar Spinning and Weaving Mills	1884
Sitaram Textiles Ltd	1908
Alagappa Textiles (Cochin) Mills	1943
Cannanore Spinning and Weaving Mills	1945
Vijayamohini Mills	1946
Rajgopal Textile Mills (Pvt) Ltd.	1947
The Asok Textiles Ltd.	1950
Vanaja Textiles Ltd.	1951
Kathayee Cotton Mills Ltd.	1952
The Western India Cotton Ltd.	1955
Parvathi Mills	1957
Chakolas Spinning and Weaving Mills Ltd.	1957
Kerala Lakshmi Mills	1960
Prabhuram Mills	1962
Kottayam Textiles	1962
Madras Spinners Ltd.	1962
G.T.N. Textiles Ltd.	1962
Precot Mills Ltd. (Formerly, Premier Cotton Spinning Mills Ltd.)	1962
Sri Bhagavathi Textiles Ltd.	1963
The Calicut Modern Spinning & Weaving Mills Ltd.	1963
Trichur Cotton Mills Ltd.	1963
Kerala Spinners Ltd.	1964
Thiruvepathi Mills (Pvt.) Ltd.	1964
Cannanore Co-operative Spinning Mills Ltd.	1964
Trivandrum Spinning Mills Ltd.	1964
The Malappuram Co-operative Spinning Mills Ltd.	1975
The Quilon Co-operative Spinning Mills Ltd.	1976

Source: Data collected from the mills through questionnaire

APPENDIX - II

Number of Spindles Installed in the Textile Mills of Kerala As on 31st March 1985

Name of mill	Number of installed spindles
Sitaram Textiles Ltd.	12,064
The Calicut Modern Spinning and Weaving Mills Ltd.	13,856
Rajgopal Textile Mills (Pvt.) Ltd.	14,020
Kathayee Cotton Mills Ltd.	14,860
Kerala Spinners Ltd.	15,848
Prabhuram Mills	17,736
Thiruvepathi Mills (Pvt.) Ltd.	17,760
Trichur Cotton Mills Ltd.	17,912
Vanaja Textiles Ltd.	19,200
The Western India Cotton Ltd.	20,180
The Malappuram Co-operative Spinning Mills Ltd.	22,272
Sri Bhagavathi Textiles Ltd.	23,832
Cannanore Spinning and Weaving Mills	24,800
Kottayam Textiles	24,844
Parvathi Mills	25,076
Chakolas Spinning and Weaving Mills Ltd.	25,172
Trivandrum Spinning Mills Ltd.	25,200
The Asok Textiles Ltd.	25,396
Cannanore Co-operative Spinning Mills Ltd.	28,000
Vijayamohini Mills	30,476
Kerala Lakshmi Mills	37,440
G.T.N. Textiles Ltd.	47,696
Alagappa Textiles (Cochin) Mills	49,564
Precot Mills Ltd.	70,164

Source: Annual Reports

APPENDIX - III

Paid-up Equity Capitals of Textile Mills in Kerala
As on 31 March 1985

Name of mill	Paid-up equity capital (Rs. in lakhs)
Vanaja Textiles Ltd.	13.94
Kottayam Textiles	14.51
Prabhuram Mills	14.96
G.T.N. Textiles Ltd.	16.00
The Western India Cotton Ltd.	16.35
Thiruvepathi Mills (Pvt) Ltd.	25.00
Kathayee Cotton Mills Ltd.	25.00
Trichur Cotton Mills Ltd.	25.00
Chakolas Spinning and Weaving Mills Ltd.	30.00
Kerala Spinners Ltd.	34.00
Vijayamohini Mills	34.88
The Calicut Modern Spinning and Weaving Mills Ltd.	35.85
Kerala Lakshmi Mills	36.95
The Asok Textiles Ltd.	49.54
Sri Bhagavathi Textiles Ltd.	52.00
Alagappa Textiles (Cochin) Mills	53.84
Cannanore Co-operative Spinning Mills Ltd.	87.16
Precot Mills Ltd.	100.00
Cannanore Spinning and Weaving Mills	112.08
Trivandrum Spinning Mills Ltd.	184.99
Sitaram Textiles Ltd.	233.00
The Malappuram Co-operative Spinning Mills Ltd.	257.48
Parvathi Mills	308.50
Total	1761.03

Source: Annual Reports

APPENDIX - IV

Gross Profit Margins for 1980-81

Name of mill	Gross profit margin (%)
P	24.82
N	21.61
E	20.98
K	20.19
M	19.87
A	19.24
D	18.64
O	16.41
I	15.35
V	14.86
Q	13.26
B	12.91
F	11.97
L	11.87
T	11.04
H	9.73
S	8.66
G	8.53
U	7.70
W	6.95
R	5.05
C	1.38

Median = 13.09 Range = 23.44 Standard deviation = 5.94

Source: Calculated from Annual Reports

APPENDIX - V

Operating Profit Margins for 1980-81

Name of mill	Operating profit margin (%)
P	21.76
M	12.93
A	10.90
I	10.60
O	10.56
K	10.07
V	5.96
E	5.04
B	4.93
L	4.31
Q	4.18
F	3.90
S	3.81
H	3.15
U	2.22
T	1.62
W	1.13
G	(-) 2.77
D	(-) 3.02
C	(-) 9.83
N	(-)12.12
R	(-)19.14

Median = 4.04 Range = 40.90 Standard deviation = 8.68

Source: Calculated from Annual Reports

APPENDIX - VI

Return on Capital Employed for 1980-81

Name of mill	Return on Capital Employed (%)
K	66.33
H	32.05
P	29.44
A	28.83
S	28.55
F	25.81
M	25.05
W	23.46
I	22.19
B	21.68
E	20.72
T	20.46
V	17.95
Q	17.38
O	17.15
L	16.54
U	15.95
D	13.12
G	9.47
N	7.58
R	4.60
C	4.35

Median = 20.59 Range = 61.98 Standard deviation = 12.46

Source: Calculated from Annual Reports

APPENDIX - VII

Return on Assets for 1980-81

Name of mill	Return on Assets (%)
P	22.40
K	17.18
I	13.74
A	10.69
M	10.07
O	8.98
S	6.60
F	6.17
H	5.99
B	5.81
V	5.43
L	4.87
Q	4.40
E	3.95
U	3.16
W	2.51
T	1.88
D	(-) 1.73
G	(-) 1.98
N	(-) 4.10
C	(-)12.70
R	(-)12.99

Median = 5.15 Range = 35.39 Standard deviation = 8.08

Source: Calculated from Annual Reports

APPENDIX - VIII

Operating Assets Turnover for 1980-81

Name of mill	Operating assets turnover (times)
W	2.21
H	1.90
S	1.73
K	1.71
F	1.58
U	1.42
I	1.30
C	1.29
B	1.18
T	1.16
L	1.13
Q	1.05
P	1.03
A	0.98
V	0.91
O	0.85
E	0.78
M	0.78
G	0.71
R	0.68
D	0.57
N	0.34
Median = 1.09	

Source: Calculated from Annual Reports

APPENDIX - IX

Gross Profits per Spindle for 1980-81

Name of mill	Gross profit per spindle (Rs.)
M	303.32
P	266.63
B	255.79
A	248.17
Q	230.96
N	223.74
I	195.31
K	187.67
H	167.62
T	165.60
E	162.74
O	145.65
W	139.46
L	135.69
D	132.41
V	131.87
S	85.76
F	84.71
G	84.20
U	81.48
R	66.42
C	47.32

Median = 154.20 Range = 256.00 Standard deviation = 69.86

Source: Calculated from Annual Reports

APPENDIX - X

Operating Profits per Spindle for 1980-81

Name of mill	Operating profit per spindle (Rs.)
P	233.81
M	197.37
A	140.55
I	134.82
B	97.69
O	93.66
K	93.58
Q	72.78
H	54.29
V	52.94
L	49.32
E	39.13
S	37.73
F	27.61
T	24.35
U	23.46
W	22.73
D	(-) 21.43
G	(-) 27.29
N	(-)125.45
R	(-)251.87
C	(-)337.14

Median = 44.23 Range = 570.95 Standard deviation = 126.73

Source: Calculated from Annual Reports

APPENDIX - XI

Earnings per Share of Face Value Rs.100 for 1980-81

Name of mill	Earnings per share (Rs.)
Q	211.25
P	202.03
M	120.79
I	104.70
O	71.73
F	71.12
A	69.16
K	67.60
H	52.95
E	47.21
B	29.92
L	22.54
T	21.36
S	20.97
W	7.43
V	6.94
U	6.87
N	(-) 9.45
G	(-) 17.25
D	(-) 18.35
R	(-) 30.95
C	(-)311.41
Median = 26.23	

Source: Calculated from Annual Reports

APPENDIX - XII

QUESTIONNAIRE REGARDING DETAILS OF YARN PRODUCTION AND CAPACITY UTILISATION

1. Name of the Company :

2. Address of the registered office :

3. Year of incorporation :

4. Spindle shifts worked during the year :

   1984-85

   1983-84

   1982-83

5. Capacity utilised during the year : (As % of installed capacity)

	Spindles	Looms
1984-85		
1983-84		
1982-83		

6. Countwise production of yarn during the year (in kgs):

	Counts	Kgs
1984-85		

Year	Counts	Kgs
1983-84		
1982-83		

7. Average count of the yarn produced during the year:

   1984-85

   1983-84

   1982-83

8. Total number of permanent employees during the year:

   1984-85

   1983-84

   1982-83

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TABLE - 3.3

Return on Capital Employed (%)

Year	Median	Range	Standard deviation
1980-81	20.59	61.98	12.46
1981-82	1.31	83.49	15.01
1982-83	11.62	64.19	14.34
1983-84	9.38	84.42	20.37
1984-85	8.69	50.39	15.99

Source: Calculated from Annual Reports

The median Return on Capital Employed has dropped from 20.59 percent in 1980-81 to 1.31 percent in 1981-82; the rate has increased during the subsequent period though not to the level in 1980-81. In fact, only in 1980-81 were all the units able to earn a positive Return on capital employed.

There is wide interfirm variation among mills in all the years. The interfirm variation in the case of Return on capital employed is much more than in the case of Gross profit margin. But both the ratios have gross profit as the numerator. Therefore, the difference in variation can be accounted for by the variation in the denominators of the two ratios which are 'capital employed' and 'sales'. The wider variation among mills in the case of Returns on capital employed indicates wider variation in the capital employed of mills and comparatively lesser variation in the sales of individual mills.

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