PERFORMANCE OF COTTON TEXTILE INDUSTRY IN BANGLADESH :
An Inter-sectoral Survey

Thesis Submitted For The Degree
of Doctor of Philosophy in Commerce

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DECLARATION

I do hereby declare that the thesis entitled "Performance of Cotton Textile Industry in Bangladesh: An Inter-sectoral Survey" is the result of my own research work, pursued under the supervision of Dr. Palas R. Sengupta, Professor, Department of Commerce, University of North Bengal, India.

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CERTIFICATE

I am very glad to certify that the thesis entitled "Performance of Cotton Textile Industry in Bangladesh: An Inter-sectoral Survey" has been prepared by Mrs. Salma Banu, Assistant Professor, Department of Accounting, University of Rajshahi, Bangladesh, under my supervision. It embodies the results of her investigation and is an original piece of research work not submitted to any other University/ Institution for Ph. D. or any other degree.

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PREFACE

The textile sector occupies a very important position in Bangladesh. It is the largest manufacturing sector making a significant contribution to the economy in terms of value added and employment. Employment in textile industry accounts for 45 percent of the total employment of the industrial sector. The contribution of this sector is more than one third of the total value addition of the industrial sector, about 5 percent of national income and about 65 percent of the total export earnings of the country. As it has a tremendous scope for expansion, it can make substantial contribution to the achievement of planned objectives of poverty alleviation (employment) and self-reliance (balance of payment).

Inspite of the above fact, the performance of this industry is not said to be satisfactory. The profitability of public sector textile industries was far from expectation. More clearly, they failed to contribute positively to the national economy, rather they became a burden on the economy with their continual huge amount of losses. Mismanagement, inefficiency and corruption are more pronounced in the public media for such poor performance of public sector textile industries. It is widely felt that the situation should not be allowed to drift further and thus, there is a demand for the privatisation of these industries like other nationalised industries. Many of the research studies highlighted the different aspects of textile industries in Bangladesh but no in-depth studies dealing with inter-sectoral comparison of operational and financial performance has been made. It was therefore, considered necessary to make an in-depth study in this field and hence, the present study was undertaken with the purpose of looking at the operational and financial performance of cotton textile industry in Bangladesh with a view to find out the inter-sectoral differences.

The study is mainly based on the annual reports and accounts of Bangladesh Textile Mills Corporation (BTMC) and member mills of Bangladesh Textile Mills Association (BTMA). The period of study is ten years from **1987-88 to 1996-97**. The findings of the study have been enumerated and presented in seven chapters as under:

Chapter-1 of this study deals with the historical development, role and importance of cotton textile industry in Bangladesh, objectives, scope, methodology and limitations of the study. A brief account of the prior studies conducted in this field is also given in this chapter. A discussion on related terms of the study forms part of **Chapter-2.** In **Chapter-3,** an effort has been made to analyse the production performance and productivity of the selected textile mills. A detailed comparative analysis of production efficiency and productivity of labour and capital has been worked out. **Chapter-4** covers the Cost of production and Sales Performance and contains the analysis of elements of cost of production, sales trend and sales efficiency in both public and private sectors. In **Chapter-5**, profitability of the selected textile mills under study has been evaluated and compared between the two sectors. In **Chapter-6**, along with examining the working capital position of the industry, liquidity and efficiency of working capital of the textile mills under public and private sector has also been tested. The **Last Chapter** contains the concluding observations and suggestions for improvement of the overall performance of the industry.

The study indicates an extremely unsatisfactory performance on the part of the public sector textile mills. Their profitability position was highly adverse particularly in the later years of the study period. But both the operational and financial performance of the private sector textile mills was far better during the period. The denationalised textile mills performed much better in private sector as compared to the existing textile mills under public sector. Some private textile mills were performing very well with 90% to 100% capacity during 5 to 7 years of

their existence. The observed factors influencing the profitability of public sector textile mills are low production efficiency in terms of per spindle per shift production and capacity utilisation, low labour productivity, high cost of production, poor sales performance, shortage of working capital and over manning. It is believed that modernisation and replacement of the existing machinery, maximum utilisation of capacity, removal of excess man power, introduction of standard costing and thus efficient management at all levels will raise the efficiency in production and productivity and will pull down the cost of production. Establishment of Research and Development cell in each unit and implementation of new technology, preferring low profit margin and high sales volume in pricing of yarn and prevention of smuggled yarn will improve sales performance and thus profitability of the mills under public sector. In short, each mill will have to struggle hard to survive in the industry.

(Mrs. Salma Banu)

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS USED

ABC	=	Always Better Control
Ave.	=	Average
BEP	=	Breakeven Points.
BMRE	=	Balancing, Modernisation, Replacement and Expansion
BTMA	=	Bangladesh Textile Mills Association
BTMC	=	Bangladesh Textile Mills Corporation
CL	=	Current Liabilities
COPU	=	Committee on Public Understanding
CR	=	Current Ratio
CV	=	Coefficient of Variation
EBIT	=	Earning Before Interest and Taxes.
EPIDC	=	East Pakistan Industrial Development Corporation.
GATT	=	General Agreement on Tariffs and Trade.
G. D. P.	=	Gross Domestic Product.
Kg	=	Kilogram (= 100 grams).
lbs	=	Pound (weight).
MIS	=	Management Information System
NIP	=	New Industrial Policy
NW	=	Net Work
OECD	=	Organisation for Economic Co-operation and Development
PAT	=	Profit After Taxes
PBT	=	Profit Before Taxes
PSPS	=	Per Spindle Per Shift
QR	=	Quick Ratio
RMG	=	Readymade Garments
ROI	=	Return on Investment
'r'	=	Coefficient of correlation
SD	=	Standard Deviation
Tk.	=	Taka (Unit of Bangladeshi Currency).
Tola	=	11.66 grams (weight)
V	=	Variance.
WTO	=	World Trade Organisation.
X	=	Mean Value

1

INTRODUCTION

1.0 PRELUDE

Bangladesh is primarily an agricultural country. It has an area of about 147570 sq km and a population of 111.4 million[1] making it the most densely populated country in the world, but in per capita income she is one of the poorest of the developing countries. Over half of her gross domestic product comes from agriculture. But the industry sectors though small and contributes only 8.8 percent to the GDP, plays an important role in the economy of Bangladesh. It provides essential consumer goods and key inputs for agriculture and accounts for about 70 percent of foreign exchange earning from export. In an agrarian economy where the prospect of agriculture is largely dependent on the technological development, industry will assume increasingly bigger role in the years to come to supply agricultural inputs and process agricultural outputs. Industrial sector will also be required to supply essential goods for meeting the basic needs of the people for better nutrition, clothing, housing, minimum health care, education and mass communication. It is expected that with the growth of industries in the country, the industrial enterprises would ultimately occupy a rightful place in the national economy and contribute to the economic growth of the country by increasing industrial production, national income and employment opportunities. It is because of their unique position in the national economy, a measure of efficiency at all levels assumes a great importance. But unfortunately, like all other developing countries, the industries in Bangladesh suffer from low productive efficiency and high cost of production[2]. This low level of efficiency has been considered as a serious warning to the programme of rapid industrialisation through her various five-year plans. Besides this, scarcity of foreign exchange in importing plants and equipments, paucity of capital, lower rate of profits—all are responsible for present day problematic situation with respect to industrial growth in the country. But in recent years industrial operations in Bangladesh have begun to find way to get rid of present situation. Particularly, the cotton textile industries

have generally diversified their operations to offer services to the various segments of the society.

Cotton Textile has been historically the path blazer for industrialisation. From times immemorial, until the British rule, the then East Bengal was self-sufficient in textiles and was reputed globally for producing high textured super-fine "MUSLIN", "JAMDANI" and "SILK FABRICS"[3]. The textile and clothing sector occupies a very important position in Bangladesh. It is the largest manufacturing sector which contributes 5% to the GDP and around 50% of the industrial employment comes from this. It accounts for 40% of the manufacturing value addition. It contributes to about 70% of the total foreign exchange earnings[4]. At present textile sector is considered as the most potential sector capable of generating new employment and creating scope for foreign exchange earnings. The strong desire of the government to increase per capita income to $500 from the present level of $200 by the year 2005, may be feasible through development of the textile industries.

1.1 ROLE AND IMPORTANCE OF TEXTILE SECTOR IN BANGLADESH

The cotton textile industry is the second largest industry in Bangladesh next to jute and it is the most significant of the important substituting industries. Bangladesh with a population of 111.4 million with a growth rate of about 3% requires a very large quantity of cloth to clothe the total population. In these sense the effective management of the existing textile mills, development of new textile mills and the handloom sector is of prime importance. The role of this sector can be summed up as under :[5]

i) The textile sector is concerned with providing cloths which is a basic necessity of life.

ii) Textile industry is labour intensive and it plays an important role in providing employment opportunity to the unemployed and under employed work force. Employment in textile industry is more than 35 lakh, which accounts for 45 percent of the total employment of the industrial sector. The successful implementation of the investment programme made for the period 1995-2005 will create new employment opportunities for 25 lakh people.

iii) The contribution of the textile sector is more than one third of the total value addition of the industrial sector and about 5 percent of national income.

iv) The contribution of the textile industry both in terms of earning foreign exchange through exports as well as savings due to import substitution is increasing rapidly. The total export earnings from the textile industry of Bangladesh rapidly increased to Tk.9085 crore in 1994-95 from Tk.0.10 crore in 1977-78. The textile industry contributes about 65 percent of the total export earnings of the country.

v) With the expansion of textile industry, medium and small scale engineering industry is being developed to meet the requirement for machinery and spares required for the textile industry.

In the Fifth Five-Year Plan (1997-2002) [6], the total demand for fabrics in the year 2001–2002 is projected to be 5,265 million metres, including 3,228 million metres for export. And the demand supply gap of fabrics will increase from 2,633 million metres in 1996-97 to 3,917 million metres in the year 2001-2002 out of which 2,960 million metres will be on account of readymade garments

(RMG) industries. Again the excess demand for yarn over the local production in 1995-96 was 390 million kg which is expected to increase to 639 million kg in 2001-2002. About 67% of the total demand will be for cotton yarn, while the rest 33 percent will be on account of yarn from man made fabrics. The possibility of attaining self-sufficiency in fabrics and yarn can only be made by improving the management of the existing textile mills and handloom sector and by establishing new textile mills.

A comprehensive programme for the creation of new capacity in all the sub-sectors of textile industry will be set in order to attain self-reliance in fabrics for domestic market by the year 2002 and to meet 50 percent of the fabric requirements of export oriented RMG industries. The establishment of new units in different sub-sectors of textile will not only help industrial development programme of Bangladesh and create employment opportunities but will also save extra foreign exchange.

Considering the importance and bright prospect of the textile industry, the Government of Bangladesh declared textiles as "Thrust Sector" in 1992. The importance of an effective "Textile Policy" for overall development of the textile industry can hardly be over emphasised. With this perspective in view the "Textile Policy-1995" has been formulated for harmonious development of the textile industry within the framework of an open market economy. The main objective of the "Textile Policy-1995" is to achieve self-reliance in textiles for meeting local demand as well as for supplying fabrics to the RMG industry through establishing backward linkages and to ensure direct export of textile goods by expanding production of quality fabrics at competitive prices. For achieving the above objectives, the main strategies to be adopted were: i) The private sector will be given the scopes for being the focal point role for developing the textile industry of the country; (ii) for the overall development of the textile industry, production

capacity of different sub-sectors would be increased through balancing, modernisation, replacement and expansion (BMRE) of the existing old units[7].

1.2 HISTORICAL DEVELOPMENT OF TEXTILE SECTOR

Cotton Textile Industry in Bengal—A look into Its Glorious Past

Cotton culture started in the then British India which now constitutes the geographical boundary of Bangladesh from a very long time back. The high reputation of quality "Dacca Muslin" was a matter of pride and honour for Bangladesh during the time of ancient civilisation—the Egyptian, the Babylonian, the Phoenician, the Greek and the Roman. "During the period of 'Kautilya' in the 4th century A. D., the cotton textile industry had been assumed to play a prominent role in producing quality products"[8]. It is believed that in the early part of the 17th century, the industry could achieved its optimum efficiency.[9] "The industry had finally gained its supremacy in the early part of the 19th century when it had been regarded as the greatest industry of the world"[10] During the golden time the cotton textile products, especially the 'Dhaka Muslin' gained name and fame in every corner of the world. The main material of Dhaka Muslin was not foreign made yarn, rather most of the yarn used was obtained from indigenous hand spinners. During the period, the art of hand spinning reached at extreme in producing fine and super-fine quality of yarn varying between 150 to 200 counts for weaving this famous muslin[11]. "One grain (1 grain equals 1/100th tola, 1 tola = 11.66 gm) of muslin thread could be stretched to the full length of 500 yards"[12]. The weavers could produce muslin cloth of various designs and colour combinations, which not only could meet the simple and revealed demand of the rural and urban masses of the people but also could attract the then people of the aristocratic society, especially the emperors and princes. The ladies of the western world particularly

those of imperial Rome and its princes had craze for this fabric with golden and silver embroideries[13].

The then Bengal earned the larger part of foreign exchange by exporting the cotton textile products. "In 1772, cotton goods amounting to £ 7 lakh had been exported to England for the purpose of re-exportation to different countries"[14]. These cotton products had been usually exported at a profit of 60% to 70%.[15] In those days, in fact there was no dearth of employment, no marketing problem, no cut-throat complication, and weavers were indeed in a Golden Age of plenty and prosperity[16]. But the Industrial Revolution in England and the selfish commercial policy of the then British Government had affected the external and internal markets of the then Bengali textile products to a great extent.

In 1821, when English machine made yarn started entering into Bengal's market, the then British Government started physical torture to the weavers of the finest quality of cloth. Even the thumbs and index fingers had been chopped off in order to make them disable from twisting finer count yarn[17]. To keep the tendency of exportation under control a duty to the tune of 70% to 80% had also been imposed on the hand woven cloth exported from the then Bengal[18]. On the other hand, British textile products had usually been allowed to enter into India with a nominal import duty at the rate of 2.5% in 1815.[19] In this way at the end of 19th century the Cotton Textile Industry of Bengal had almost ruined and most of the weavers had been compelled to give up their hereditary occupations and they started cultivation and boating.

Growth of the Cotton Textile Industry During Pre-Partition Period (1818-1947) :

Among various large-scale industries of Bangladesh, the cotton textile happens to be the oldest. In British-India Sub-continent, the first cotton textile mill

was established as early as 1818 at Ghosary of Hooghly district in West Bengal[20]. The real development in Indian Cotton Textile Industry came after 1851 with the establishment of Bombay Spinning and Weaving Mills in Bombay.[21] By the end of 19th century, the total number of cotton textile mills in India reached at 144. But up to this period not a single mill was setup in the region now comprising Bangladesh. The first unit, the Mohini Mills Ltd. started its production with only 8 looms at Kushtia as far back as in 1908, whose founder was Babu Mohon Chakravarti. The second oldest mill in Bangladesh is Luxmi Narayan Cotton Textile Mills Ltd. which was established at Narayanganj in 1927.

Among the inter-war years, the most rapid growth occurred during the year 1930 owing to favourable commercial policy and six more mills were set up in Narayanganj, Khulna and Chittagong. It can be argued that the Indian Political Movement laid down the foundation stone for the real growth of cotton textile industry in Bangladesh. The last mill (set up) in Bangladesh before the partition of India in 1947 was Adarsha Cotton Textile Mill which was set up in 1944. By the year 1947, when India was partitioned, Bangladesh possessed 8 mills with installed capacity of 109,700 spindles and 2,717 looms.[22]

Development of Cotton Textile Industry during Pakistan Regime (1947-71)

After the departure of Britishers, Bangladesh became a province of Pakistan. During Pakistan period the growth of cotton textile industry in Bangladesh was impressive because of a ready home market and some government incentive through various policy measures. During the pre-plan period (1947-1955) 10 new mills were established in this province where as 29 new textile mills were set up during this period. During the First Five Year Plan period (1955-1960) no textile mill was established in Bangladesh (then East Pakistan) while 16 new mills were set up in West-Pakistan. Substantial increase in

capacity of textile industry was achieved particularly after 1960. During the second plan period (1960-65) 24 new mills were set up in this province where as 14 new mills were established in West Pakistan; but in case of expansion of old mills West Pakistan got the major shares. At the end of Third Five Year Plan (1965-70) the total number of cotton mills in Bangladesh were 43 against the total of 106 in West Pakistan[23].

Growth of Cotton Textile Industry during Post-Liberation Period (1972-83):

Before independence of the country in 1971 the total number of textile mills were 44 having a capacity of 8,36,000 spindles and 7,000 looms. During the post-liberation period a drastic policy changes had occurred. On March 26, 1972, all the large scale cotton textile mills were nationalised with the promulgation of Bangladesh Industrial Enterprises (Nationalisation) order, 1972 (President's Order No. 27, 1972) and handed over to Bangladesh Textile Mills Corporation (BTMC), established for the purpose of management and control of the textile mills. The first and a subsequent schedule of nationalisation order brought the total number of enterprises under the BTMC to 74. Among them only 72 mills were actually capable of providing textile goods and the rest 2 had no tangible assets. In 1975-76, the BTMC brought another mill under its control[24].

The Government, however, started disinvesting and a number of mills were disinvested to their former owner up to 1976-77. The number of running spinning mills were increased to 31 and composite mills to 25 and 4 specialised mills and 5 under construction mills making the total of 65 which were brought under the control of BTMC, by June 30th, 1981. Government announced the New Industrial Policy (NIP) in June 1982 which opened up most of the industries to private investment. In presence of the NIP during 1982-83, 27 cotton textile mills with 4.97 lakh installed spindles and 4,771 looms were transferred to private

sector in order to create more confidence among private entrepreneurs for boosting private investment in this sector[25].

The policy of disinvestment was due to the ideological shift of the new Government as well as the result of the pressure from the aid giving agencies, particularly the World Bank. In the strategy and policy planning for the growth of cotton textile industry, the privatisation policy got high importance.

Position of Cotton Textile Industry during the Study Period (1987-97) :

The textile industry which initially emerged in the late sixties had been set back in the process of development due to nationalisation in 1972. There was no prospect in the textile industries under the control of BTMC during the nationalisation period up to 1982. It was only after denationalisation in 1983, the textile industries made rapid stride. At the beginning of the year 1985-86, 33 textile mills and 5 specialised mills were in operation under BTMC.[26] In the Third Five Year Plan (1985-90), the new capacity generation for both fabrics and yarn were almost entirely earmarked for private sector. During this short period the number of mills in private sector had increased almost double with corresponding increase in both spindles and looms. In 1989-90, there were 77 textile mills including 27 composite mills both in public and private sectors having 16.20 lakh spindles and 8,707 looms in the country. Besides there were 27,793 power looms and 5.3 lakh handlooms in the country[27]. During May'92 to June'93, 10 heavily loosing mills of BTMC with average 1,61,075 spindles and 601 looms had been laid off under denationalised Industrial Policies of the Government. In 1996-97, 27 spinning mills with average installed capacity of 5,90,820 spindles and 2,945 looms and 3 specialised mills were in operation under BTMC. On the other sight, 72 spinning and weaving member mills of Bangladesh Textile Mills Association (BMTA) were in operation during 1996-97 as reported in Annual Report 1996-97.

There has been a sharp growth of textile spinning mills having modern machinery. During the last ten years 54 textile spinning mills have been enrolled as member of BTMA but only during the year 1996-97, 21 mills have been enrolled so far and total spindles stood at 2.4 millions. Moreover, as many as 22 weaving mills, 18 dyeing-printing units had also been enrolled during this year.

1.3 BANGLADESH TEXTILE MILLS CORPORATION (BTMC)

The Bangladesh Textile Mills Corporation (BTMC) was established on the 26th of March, 1972; consequent upon the promulgation of the Bangladesh Industrial Enterprises (Nationalisation) Order, 1972 (President's Order No. 27 of 1972). The corporation actually started its formal functioning from the 1st of July 1972. The corporation is entrusted with the responsibility of management and control of the nationalised textile mills of the country and listed 64 textile units were placed at the administrative control of the corporation. The number of running textile mills was 44, with installed capacities of 8,31,000 spindles and 6,500 looms. The number of specialised mills was 13. Later government disinvested 10 specialised textile mills during 1977 to1979. Another 4 textile mills with installed capacities of 82,440 spindles and 2,046 looms were put under liquidation by the government in 1982. In pursuance of the new industrial policy 24 operating units having 4,63,816 spindles and 3,059 looms were transferred to Bangladeshi shareholders during 1982-83 to 1984-85.

1.4 BANGLADESH TEXTILE MILLS ASSOCIATION (BTMA)

The Association was incorporated under section 26 of the Companies Act, under No. T. O. 163 of 1983-84, dated 20th December, 1983. The main objective of the association is to encourage friendly feeling and unanimity amongst Textile

Mills owners on all subjects connected with their common interest next to promote and protect the trade, commerce and manufactures of Bangladesh in general and of the cotton trade in particular. 22 textile mills of private sector were listed as the members during the formation of this association. As per the Annual Report of BTMA 1996-97, 105 spinning mills, 22 weaving mills and 20 dyeing-printing-finishing mills of private sector have been listed as member of BTMA.

1.5 STATEMENT OF THE PROBLEM

It is an admitted fact that any development strategy which aims at raising output and generating adequate employment opportunities, needs to address the rapid industrialisation move. The process of industrial development in the territory now comprising Bangladesh had been started only in the late 60's under direct patronisation of the then Government, which ensured various types of incentive under different policies to the private sector entrepreneurs, mainly non-Bengalis. As a result of this move, the textile industrial sector started to develop in this part of the country as it is to supply the second essential item for consumption of the large population of the country. During pre-liberation period the textile mills in the private sector earned a good profit as there was almost a guaranteed and protected market for their products and more over they enjoyed various privileges extended to them by the monetary credit and fiscal policies of the then government. Under the present day national and economic situation, the development of the import substituting textile sector is essential to save the drainage of the country's hard earned foreign exchange and to meet the demand of the country's large handloom sector. A total of 30 textile mills were running under BTMC and 72 textile mills were running in private sector as on 1996-97.

But unfortunately the financial performance of this industry was not satisfactory especially of public sector textile mills, which act as a stumbling

block to the process of economic development of the industry. There may be a number of reasons, which are responsible to this poor performance. The Planning Commission of the country in the First Five Year Plan (1973-78) has pointed out that the most important problems faced by the industry are– a) lack of adequate and timely supply of raw cotton and yarn, and b) the need to cut down idle loomage. Eminent economists of the country have indicated some loopholes in the working capital management of the cotton textile industry. These are– working capital gap, defective policy relating to the procurement of raw cotton and spare parts and so on. The corporation incurred an average annual net loss of Tk. 19.4 crore during the Two Year Plan period (1978-80) and Tk. 16.3 crore during the Second Five Year Plan period (1980-85)[28]. The performance of the textile mills during the Third Five Year Plan and Fourth Five Year Plan was not also encouraging both in terms of profitability and production. From 1972-73 to 1990-91, the corporation incurred a total loss amounting to Tk. 63.89 crore. During 1991-96 the mills under BTMC incurred losses of Tk. 548.98 crore $ of which Tk. 135.00 crore was only during 1995-96. The total loss incurred by the corporation during 1972-73 to 1995-96 was Tk. 612.87 crore. "The poor performance of the primary textile sector provides a sharp contrast to a vigorous and sustained growth maintained in the export oriented RMG-industry. In the large mill segment, there is very little weaving capacity, which is really suited to producing export quality fabrics. Much of the capacity that does exist lies with the public sector- BTMC mills which suffer from unique problems of their own and are not in a position to cater to any demand from the RMG industry.[29]

Planning Commission[30] in its Fifth Five Year Plan document mentioned as "at present there are 31 textile mills under the public sector most of which are very old and technically outdated to produce good quality yarn and grey fabrics. All the public sector mills are running at loss due to some inherent problems like low capacity utilisation, irregular repair and maintenance, lack of managerial efficiency, excess manpower, high cost of production, etc. Thus replacement of

machinery to increase production and to meet the requirements of the export quality fabrics are essential for increased value addition and employment generation for Ready Made Garments (RMG)". The situation however seems to be relatively better in private sector mills.

1.6 REVIEW OF RELATED LITERATURE

Loqman, M.[31] in his study of financial analysis of 135 Jute and Cotton Textile Industries in Bangladesh for the period of 1975-1980, pointed out that the average profit margin ratio of cotton textile industry is lower than the standard norm (some author consider that a profit margin ratio with 4 percent to 6 percent). The author also stated that the cotton textile industry showed negative return on capital employed recording 9.51% as compared to the standard norm of 11.00 percent to 12.00 percent as considered by the Fourth Five Year Plan of India. The study further presented that cotton textile industry having significantly lower breakeven points (BEP) than actual revenue (not exceeding 100 percent) recording 95 percent showed low profit margin to the extent of 2.35 percent. The author concluded that the present analysis of financial statements of the selected industries revealed that on the whole, the financial position of the concerned industries appears to be unsatisfactory during the period under review, thus affecting the very efficiency i.e., the productivity and profitability of the concerns.

Haque and Hossain[32] conducted a comprehensive study on 5 spinning mills under the control of BTMC. They found that materials control had not been effective in the selected mills because of – a) inadequate physical control of materials; group control of stores and visual control techniques had not been used in almost all the selected mills; b) materials control techniques were inadequate in that budgetary control of materials turn over ratios, materials in terms of months value of consumption etc. had not been used. The authors arrived at a conclusion that the

materials management had been poor and thus ineffective in the selected mills during the study period leading to overstocking especially in stores and spares, which in turn blocked scarce working capital of the mills.

Hossain[33] in his work stated that none of the techniques of inventory control was being followed by the 5 selected mills under BTMC in the truest sense of the term. By analysing the actual position of inventory, he observed that the size of inventory widely varied from year to year in all the selected units during the period 1975-76 to 1984-85. The study indicates that there has generally been over investment in inventories in all the selected units for most of the years under study. This over investment in inventories affects the cost of production and profitability very adversely. The study further unfold that in practice over investment in almost all the components of the inventories for the period under study has become a general rule rather than an exception. Peculiarly, in certain years there are stock-out situations for certain items. The whole process of inventory management in the selected units appears to be not in order, resulting in blockage of capital and loss of profit.

Islam, [34] presented a study based on 20 randomly selected cotton textile mills to look into the performance of the mills in terms of certain selected financial ratios and the analysis of labour and capital productivity with the help of a regression model. The study found that the mills made profits as well as losses. The highest amount of loss was about Tk. 46.7 million, while maximum profit recorded for the sample for the year was about Tk. 24.0 million. Another important findings was that the production cost over sales ratios varies from 59 percent to 129 percent, the ratio above 100 percent indicates inefficiency in the production process. The author also found that in the case of capital productivity, labour intensify demonstrates the expected positive sign and significance. But in the case of labour productivity, capacity has a positive sign indicating scale effect, while capital intensity has an unexpected negative sign, indicating unutilised or unbalanced

capital investment. Though the sign in capacity is as expected, they are not significant. The author concluded that most of the textile mills operate inefficiently. Thus it is necessary to take measures to improve their efficiency and productivity, otherwise, the viability of the mills and the corporation will be threatened.

Saha[35] while analysing the nature of the financial management techniques in the Rajshahi Textile Mills, found that various types of budgets were prepared by the mills. Financial analysis was done by Bangladesh Textile Mills Corporation (BTMC) from time to time. Cash management and inventory management techniques were applied at the mill level, while capital budgeting techniques were used at corporate level. The use of proper financial management techniques was limited by the shortage of technical manpower and uncertainly with respect to production. There was ample scope to strengthen the application of financial management techniques at the mill level.

Hossain and Chowdhury's[36] study was restricted to 6 composite mills aiming at to critically examine the existing pattern of cash management as practised by the selected units of the BTMC. It was appeared from their analysis that there was a deficiency of cash in all the sample units except one for the study period ranging from1985-86 to 1989-90. While analysing the size and percentage of cash to current assets, the authors found that both the size and percentage are considered to be abnormally low in all the selected units except one, which affected very adversely the liquidity and solvency position of those units. They identified that the non-implementation of the techniques to regularise cash flows, absence of adequate policy in determining the optimum cash balance and non-introduction of the techniques to maximise the availability of cash were probably responsible for such an unhappy situation.

Sobhan and Mahmood[37] undertook a work study focusing on the economic performance of denationalised industries of Bangladesh. Their major findings

were that the annual average yarn and cloth production decreased by 8.7% and 11.6% respectively in the 21 private sector mills following denationalisation. In the case of spinning mills, the running efficiency level on an average were seen to be lower in the denationalised mills relative to public sector mills. Regarding financial performance, the authors remarked that as was the case with other indicators of performance, financial performance was also seen to have declined in the textile mills following denationalisation.

Ather's[38] study aimed at analysing the under utilisation of capacity in 8 cotton spinning mills under BTMC for the period 1974-75 to 1983-84, to identify the proximate causes and reasons for the capacity remaining idle. This study exhibited that the percentage of the idle capacity of the sample mills was the lowest (9.78%) in 1977-78 while it was the highest (21.10%) in 1975-76. The average percentage of the idle capacity for the entire period was 14.64%. This means 85.36 percent of the installed capacity was attained. The study further pointed out that among a plethora of factors, just four, viz., power failure, load shedding, absenteeism of workers, shortage of spare parts and maintenance together accounted for 76.61 percent of idle capacity. The highest percentage of average idle capacity was caused by power failure and load shedding (30.28%) followed by absenteeism (21.46%), shortage of spare parts (14.24%) and maintenance (10.93%).

Hye and Ather[39] summarised their surveyed data of an empirical study on public cotton textile mills. Their study reveals that four tools viz., the break-even points analysis, profitability ratios, net profit analysis and information reports, have been applied practically in profit planning and control of PIEs of Bangladesh. Analysing enquiry responses as to the frequency of use the authors presented that 33.33 percent respondents opined in favour of frequent use of break-even points analysis, profitability ratios, and net profit analysis, while 66.67 percent of them reported infrequent use of these tools. Information reports were reported to be frequently used by 66.67% respondents while the rest reported about their

infrequent use. They also added that none of the modern tools and techniques was used in profit planning and controlling of public cotton spinning enterprises. Lack of resources and facilities and lack of support and follow up from government and top executives were reported to be the main reasons for such state of affairs in PIEs.

Rashid and Karim's[40] study revealed that there had been over capitalisation in the sample mills in respect of fixed capital both during initial period and selected operating periods. Of the many factors responsible for such over capitalisation in the sample mills, inflation leading to rising prices, difference between book value and real worth of fixed assets, shortage of working capital, high rate of corporate taxes, inequate provisions for depreciation, obsolence or maintenance of fixed assets, under estimation of capital rate and delays in procurement of imported equipment are the major ones. As a result of over capitalisation there had been inefficient use of fixed and working capital. The authors came to a conclusion that such over capitalisation had adversely affected the profitability and capacity utilisation of the sample mills.

Saha[41] studied six denationalised spinning mills to evaluate privatisation policy of Bangladesh. Comparing their performance during the five years prior to disinvestment with the same during five years after disinvestment, the author observed that the average production of the selected mills decreased by 6.28% during the period after disinvestment while the installed capacity and its utilisation rate in these mills increased by 23.53% and 37.26% respectively. The author remarked that as per the change in the utilisation rate, the production figure should increased much. A better picture was shown by the author in case of sales. Comparative analysis of profit and profitability done by the author also revealed that the average ratio of loss to total assets employed was 18.37% in the year 1981-82, the year before denationalisation but in 1986-87, the year after disinvestment, the average rate of profit to total assets employed came to 6.12% which was an encouraging sign in favour of privatisation.

Rashid and Karim's[42] study is limited to 8 textile mills operating under BTMC. They looked over the impact of idle capacity on performance of the sample mills and they released their results that there had been higher degree of idle capacity in the sample mills varying from 25 percent to 54 percent during 1985-86, 1988-89 and 1989-90. The main causes for such higher degree of idle capacity were power failure, labour absenteeism, machinery breakdown and maintenance, shortage of cotton, shortage of working capital, labour strikes and low demand and market restriction. Such higher degree of idle capacity had produced adverse impact on labour productivity in terms of value of output per worker per week, cost of production per kg of yarn and profitability in terms of Return on Investment (ROI).

Rahman[43] found that like many other enterprises of the textile sector, Rajshahi Textiles Ltd. had been facing a serious problem of stock piling of cotton yarn especially after 1990-91. The entry of the smuggled yarn into the domestic market, availability of foreign cotton yarn at a comparatively lower price and poor marketing capability as identified by the author have resulted in the creation of huge stock piling situation in this manufacturing concern. Consequently the mill had to suffer recurring losses for a number of years.

Bhuyan et. al., [44] demonstrated the international competitiveness of Bangladesh's cotton yarn. Their investigation indicates a clear comparative advantage of Bangladesh over her major competitors viz., India and Pakistan and also over all other countries. In comparison with Bangladesh, conversion cost of yarn is 20% higher in India and 8% higher in Pakistan. Their study made it clear that while the manufacturing cost of yarn in Bangladesh was 17% and 9% lower than that of India and Pakistan respectively, the total yarn cost in Bangladesh was 4.5% and 6.2% higher than in India and Pakistan respectively. This is essentially due to relatively higher raw material cost in Bangladeshi mills by 25.5% and 17.7% than in India and Pakistani mills respectively.

1.7 DIRECTION AND SIGNIFICANCE OF THE PRESENT STUDY

As the textile industry is the most significant import substituting sector and it has ever present large domestic market, development of this sector is necessary to save the drainage of the country's hard earned foreign exchange and to meet the requirement of large handloom sector as well as the domestic markets. But most of the cotton textile mills in public sector have been sustaining heavy losses since after 1975. The performance worsened seriously during the six years from 1991 to 1997 and BTMC mills sustained losses of Tk. 712.20 crore during this period in which the increased loss of the corporation was Tk. 163.20 crore only in 1996-97 making the total of Tk. 776.07 crore in this year. However, the mills under BTMC have failed to contribute positively to the national economy. Rather they have turned out to be a burden on the national budget due to continual huge amounts of subsidy. On the other hand, the private sector textile mills have been showing relatively better performance. All most all the mills in this sector are making profits and paying a handsome amount to national exchequer each year.

In view of historical and economic importance of cotton textile industry of Bangladesh as well as the problems with which it has been beset with now, it is worthwhile to undertake an indepth study on the operational and/or financial performance of public and private sector textile mills.

Bhattacharjee and Karmaker[45] in their article emphasised on researches on various dimension of performance evaluation by identifying the performance indicators for inter-sectoral, inter-industry, inter-national comparisons of organisational effectiveness.

Many of the research studies reviewed so far have highlighted the different aspects of textile units in Bangladesh, but very few of them dealt with inter-sectoral comparison of performance. Hence it is expected that the present study would unfold the inherent causes leading to different problems and complexities arising on the way of performance effectiveness of the cotton textiles in Bangladesh. In addition, this study would present the results of such comparative analysis for researchers, policy makers, industrial managers and owners and also at the same time for the government, who in its turn would be able to assess the degree of success or otherwise of its privatisation policy and adjudge the performance of public sector in the light of its wide-scale criticism at home and abroad.

1.8 OBJECTIVES OF THE STUDY

The present study aimed at the presentation of comparative evaluation of operational and financial performance of public and private sector textile mills in Bangladesh. The comparison was restricted to a review of data on production and productivity, profitability, sales, cost of production and working capital. The specific objectives of the study were:

a) To highlight the operational performance and efficiency of textile mills in both public and private sectors during 1987-88 to 1996-97 and compare the same between the two sectors and also present the trend of production and productivity between the sectors.

b) To make the comparative analysis of cost of production in relation to study period in the mills under two sectors in order to find out the magnitude of variations in different elements of cost in relation to changes in volume of

production from year to year and to understand the trend of the cost as per different elements.

c) To find out the reasons for variations in different elements of costs among the mills under public and private sectors.

d) To measure the sales performance and efficiency of the selected mills in order to make a comparison between the two sectors pointing out the limiting factors and to understand the trend of sales between public and private sectors.

e) To evaluate the financial performance in terms of profitability of the textile mills in both public and private sector during the period under study, and to find out the actual reasons for poor performance (where applicable), especially in case of the mills under BTMC.

f) To assess the position of the working capital and examine the liquidity and efficiency of working capital in the selected mills during the period pointing out the major problem areas encountered there in.

g) To provide suggestions for improving overall performance of this industry.

1.9 RESEARCH QUESTIONS

In view of the above objectives this study considered the following research questions:

1. How efficiently and effectively are the material, human and monetary resources being managed in the production process of the textile industry in Bangladesh both in the public and private sector?

2. What factors are affecting the production, productivity and sales of the textile industries in both sectors?

3. To what extent the direct costs are varying with the volume of production in public and private sector mills?

4. What techniques are being used to control costs?

5. What factors are affecting the profitability of the textile industries in the public sector?

6. What are the major threats, problems and weaknesses faced by the textile industries in Bangladesh?

7. To what extent the textile industries under public and private sector possess liquidity to meet their current liabilities?

8. To what extent the performances of private sector mills differ from that of the public sector mills?

9. What measures should be taken to improve the overall performance of the industry?

1.10 HYPOTHESES OF THE STUDY

The present study took the following hypotheses for validation, arrived at empirically or by logical deduction regarding the behaviour of one or more performance indicators, used in carrying out the comparative analysis : -

1. *Private sector textile mills are far better in operational performance as compared of public sector textile mills.*

   The factors leading to formulation of this hypothesis are better production efficiency, higher productivity, lower cost of production and greater sales achievement in private sector textile mills because of their

inherent characteristics (viz. social commitment, excessive governmental control, overstaffing, adoption of out dated techniques etc.).

2. *Financial performance in terms of profitability of public sector textile mills is extremely poor than the private sector mills.*

The reason leading to formulation of this hypothesis is that profitability ratios are either very low or negative in most of the cases. However, it is also true that profitability cannot be the sole yardstick for measuring public sector efficiency. Yet profitability is a more comprehensible and well-understood yardstick accepted by public and the parliament.

3. *The crucial factor hampering the performance of public sector textile mills is the poor management.*

Better efficiency of private sector in cost and working capital management leads to formulate this hypothesis.

4. *Individual performance indicator has the ability to discriminate the performance between public and private sector textile mills.*

The rationale for formulating this hypothesis is that the mean differences of the performance indicators for public and private sector are supposed to be statistically significant at 0.05 level of significance.

1.11 METHODOLOGY AND COVERAGE OF THE STUDY

a. Sample Selection

The textile mills under BTMC are of two types, (i) spinning mills, which produce only yarn, and (ii) composite mills, which produce both yarn and cloth.

The private sector consists of three categories of mills viz., (i) spinning, (ii) weaving and (iii) dyeing-printing-finishing. As almost all the composite mills under BTMC are now laid off, in selecting the samples only the homogeneous spinning mills of public and private sector have been considered in order to make them comparative between the two sectors. Out of 27 spinning mills of public sector (as on 1996-97) 10 mills forming 37 percent of the total have been selected as samples. In order to facilitate comparison with the performance of the public sector mills a set of 10 private sector mills forming 18 percent of the total of 56 including a large number of new units (as on 1996-97) have been selected on the basis of availability of data. The study covers a period of ten years ranging from 1987-88 to 1996-97. The primary details of the selected textile mills along with unit codes are provided as under in Table 1.1.

b. Nature and Sources of Data

The study is mainly based on secondary data. But the area has also been extended to the primary sources. In order to collect quantitative and qualitative primary data and information a relevant interview schedule was designed in the light of the research objectives after conducting a pilot survey (Annexure). Opinion of the General Managers/Deputy General Managers of the selected mills in case of public sector and in case of private sector opinions of the Senior Executive/ Company Secretary of the selected mills were collected through interview schedule and the Annual Accounts and Official records of the selected mills were consulted to gather other primary data. The secondary data were collected by the researcher through personal visit from the following main sources.

i) BTMC Head Office;

ii) BTMA Head Office;

Table 1.1 : Primary Details of the Selected Cotton Textile Mills Under Public and Private Sector (as in 1996-97)

Sector	Name of the Mills	Code used for mills	Year of Commencing Production	No. of installed spindles	Man-power	Turn over (in lakh Tk.)	Total investment (in lakh Tk.)	Net operating profit (in lakh Tk.)
PUBLIC SECTOR	Sundarban Textile	A_1	1983	39360	1222	776.39	4708.77	-824.74
	Darwani Textile	A_2	1980	25056	723	513.10	1375.80	-462.50
	Dinajpur Textile	A_3	1979	25056	845	309.84	668.95	-477.54
	Dost Textile	A_4	1964	12800	441	373.37	669.78	-291.73
	Orient Textile	A_5	1965	12400	396	117.93	166.28	-217.64
	Quaderia Textile	A_6	1963	16800	651	247.91	1338.67	-591.46
	Bengal Textile	A_7	1963	37488	1333	1292.74	3100.76	-991.30
	Rajshahi Textile	A_8	1979	25056	810	229.80	630.56	-449.77
	Kurigram Textile	A_9	1986	12528	527	168.69	1157.28	-537.13
	Magura Textile	A_{10}	1985	25056	893	95.68	1697.05	-759.70
PRIVATE SECTOR	Quasem Cotton Mills Ltd.	B_1	1973	44728	556	3733.78	7251.53	-324.30
	Alhaj Textile Mills Ltd.	B_2	1964	28080	987	1130.76	5214.09	57.34
	Eagle Star Textile Mills Ltd.	B_3	1973	30440	1133	3028.76	4148.84	200.93
	Ashraf Textile Mills Ltd.	B_4	1963	50320	2453	5183.42	6516.62	166.22
	Quasem Rotar Spg. Mills Ltd.	B_5	1990	15000	317	836.78	2078.96	-161.85
	Dullamia Cotton Spg. Mills Ltd.	B_6	1990	25056	923	1967.77	3369.68	-423.94
	Padma Textile Mills Ltd.	B_7	1990	119520	3239	17534.19	36511.01	2209.02
	Tallu Spg. Mills Ltd.	B_8	1989	26308	1035	3065.91	3324.78	92.54
	Sonargaon Textiles Ltd.	B_9	1992	27840	864	3079.50	3873.36	194.76
	Prime Textile Spg. Mills Ltd.	B_{10}	1992	24960	1169	4412.47	24138.78	226.49

Source : BTMC and Member Mills of BTMA.

Notes : i) Mills B_1, B_2, B_3 and B_4 were denationalised during 1982-85 as per denationalisation policy of the government.

ii) In case of Mills B_1 and B_5, 5400 and 3000 rotors respectively has been converted into spindles (1 rotor = 5 spindles).

iii) Head Offices of the Member Mills of BTMA;

iv) Ministry of Textiles;

v) Privatisation Board,

The other secondary data are the publication of Planning Commission, Bureau of Statistics, Consultative Committee of Public Enterprises etc.

Moreover, a comprehensive library work has been done at different libraries in Bangladesh as well as India. This library work includes literature review on the subject and going through the relevant data and information relating to various aspects of cotton textile industry in Bangladesh and in India as are available from the various documentary evidences.

c. Pilot Survey

A pilot survey was conducted in Rajshahi Textile Mills (public mill), Bengal Textile Mills (public) and Alhaj Textile Mills (private) to ensure the validity and reliability of the interview schedule. Necessary changes have been made accordingly.

d. Techniques of Analysis

i) Time series data of the 20 textile mills for a period of 10 years has been presented in the comparative format.

ii) Comparative picture of the operational efficiency of the selected public and private mills for the period has been presented.

iii) The cost of management efficiency of the textile mills has been examined by way of analysing cost mix i.e., the proportion of various elements of cost in the total cost.

iv) Differences in the financial performances of the textile mills belonging to public and private sector have been shown by way of ratio technique.

v) Accounting ratios have also been used to measure the efficiency of the working capital of the individual sample mills.

vi) Statistical tools, like mean, range, standard deviation, variance, coefficient of variance, correlation, annual average growth rate, trend analysis, graphical presentation etc. have been used.

vii) The averages of the sample mills belonging to each sector have been computed (as the number of mills varied in different years in case of private sector) and the performance of individual mills for the period of study has been compared with the sector average and then a comparison between sector averages has also been made.

viii) With view to avoid frequent mentioning of the name of sample mills in evaluating the performance code numbers have been used against the respective mills under study.

ix) The 't' test has been applied to measure the statistical significance of the differences between the mean values of the performance indicators and to test the individual discriminating power of the indicators between the performance of public and private sector textile mills.

x) To calculate co-efficient of co-relation, Karl Pearson's formula has been used.

xi) Trend values of production and sales have been calculated by the method of Least squares.

xii) Considering the objectives of the present study and depending upon the available data we have selected the following sub-indicators relating to main performance indicators viz., production and productivity, sales, profitability, cost of production and working capital.

a) Production trend, per spindle per shift production and capacity utilisation.

b) Labour productivity in terms of output, value of output and value added.

c) Capital productivity in terms of value of output and value added.

d) Sales trend and sales per employee.

e) Profitability ratio viz., gross profit ratio, net profit ratio, operating expense ratio, return on total investment, return on capital employed, return of shareholders equity, return on net worth and return on paid up capital.

f) Cost mix i.e., the proportion of various elements of cost in the total cost.

g) Level of working capital, liquidity of working capital, i.e., current ratio, quick ratio and ratio of cash to current assets, and efficiency of working capital i.e., inventory turnover, debtors turnover and working capital turnover.

1.12 LIMITATIONS OF THE STUDY

It is needless to say that no investigation is free from limitations. Hence, this study being no exception to this, has, however the following limitations:

a) Due to time and cost constraints, the researcher had to restrict this study to 20 sample mills taking 10 from each of the sector.

b) Form of presentation of accounting information is different in the different mills under private sector. In the absence of uniformity and comparability of data among the private mills as well as public mills, some performance indicator could not be used in our analysis.

c) Some private entrepreneurs were very much reluctant to furnish primary data on operation as well as some relevant data which are not presented in Annual Report (such as wastage percentages, budgeted production, budgeted sales, credit sales, total debts etc.). Moreover, difficulties were also faced in collecting very old data as the organisations lacked in storing such data.

d) Value of output, value added, sales value etc. have been shown in current prices as the price indices for the relevant years could not be gathered from the concerned offices.

e) Till the completion of our field work, the Annual Reports for the years 1994-95, 1995-96 and 1996-97 were not published by the BTMC and that is why all the data relating to these years have been taken from provisional accounts of the public mills.

f) Our plan of study were extended to measuring social performance of the textile mills under public and private sector and a broad section was designed in the interview schedule to collect necessary data for this

purpose. But we could gather very insufficient information from a few mills despite repeated visit and request. More or less all the sample mills are spending on some social activities but they are not clearly showing the same in their accounts, as there is no legal binding on the business industries to report the social accounts in their financial accounts. Thus, the non-availability of social performance information restricted us to undertake an assessment of social performance specially in case of public sector mills as the same would have facilitated justification of public sector units at least in the context of social rationale.

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2

RELATED TERMS AND CONCEPTS

2.0 PERFORMANCE EVALUATION

Performance means achievement of an anticipated course of action or a success in working. The performance of an enterprise refers to the sum of goods and services produced during a given period of time. There exists hardly any Universally acceptable pattern to explain the essence of performance of an enterprise.[1] The performance of an organisation in the public service context refers to "the extent to which its work is carried out within the established specifications for goods or services produced, to the general satisfaction of the clientele served, within given cost and time constraints, and in such a manner as to support or contribute to the achievement of the organisation's objectives".[2]

Evaluation is a 'judgement worth' of some thing. Performance evaluation may be used synonymously for performance appraisal, review and measurement. It refers to an on going evaluation of the quality, quantity, style and also determinants of the present performance growth, potential, etc. providing control information aimed at performance improvement, growth and satisfaction.[3] Thus performance evaluation might be used to provide information about various aspects of identified problems to the owner to decision maker, finally, it might be used to motivate the decision maker in a manner demanded optimal by the owner.[4]

2.1 EVALUATION CRITERIA

The choice of a performance measure is important both for the management and for the employees. It is reflective of the fact that to which aspect of performance the highest importance is attached by the management. For the employees, performance measure acts as a basis to tailor their operating behaviour. Performance measurement criteria differ between the public sector and private sector manufacturing enterprises. In the government circulars and speeches

there is no mention of any criteria for performance evaluation except that of capacity utilisation in the First Five Year Plan (FFYP) and also in the Two Year Plan of Bangladesh government. But capacity utilisation itself cannot tell about the overall performance of an enterprise as it depends on various other factors. A chairman[5] of a Sector Corporation noted that "unlike private sector where a criterion is profitability, in public sector no criteria have yet been fixed. Is it production or is it profit or is it social service"? Unless there is recognised criteria for evaluating performance, the management of an enterprise remains in confusion. But it appears from official announcements that, in measuring the success or failure of Sector Corporation, the profitability has been given emphasis as the main indicator of performance evaluation.[6]

Performance of public sector enterprises has been the subject matter of discussion at all levels, i.e. at different level of government administration, parliament, private sector, intellectuals and public at large. On the discussion at all these levels, the Return on Investment (ROI) had invariably been taken as the yardstick of evaluating the performance of public sector enterprises. How much profit has been earned in relationship with the amount invested by the government.[7]

The use of ROI as a measure of performance evaluation gained momentum when its designer 'Du Pont' started functioning on decentralised lines in 1920's. The measure is being heavily used for performance evaluation, the world over, since then.[8] The studies relating performance measures in public enterprises conducted in the past (Moshi, 1988; Fubara, 1982; Ahmed, 1982; Ogilug Webb, 1980) measure performance in terms of economic profitability.[9] Habibullah[10] used as many as eleven financial ratios to assess industrial efficiency and profitability of jute manufacturing industry of Bangladesh. Financial performance measurement to improve performance acts like a scoreboard in a football game. Although the scoreboard tells the coach whether they are winning or losing, it

does not provide them with much guidance as to which plays should be called. In business terms, managers and performance measurements of the activities and prior to outcomes that lead to superior financial results (Eccles, 1992).[11]

The conventional concept of Return on Investment is supreme for private sector but generally it has been felt that this yard stick has certain limitations in case of public sector enterprises due to the fact that other than profit earning, they have been established also to achieve certain other social objectives such as the establishment of capital intensive industries, making available the products and services at cheaper rates, providing employment, better wages, substituting imports, increasing export, serving the interests of suppliers (such as cane growers in sugar industries).[12]

According to Johnnie, (1988b), De Poula, (1967) while identifying the level of performance of public enterprises, we should look beyond the balance sheet records and use some additional indices, such as social profits and other non-quantitative factors. Campfield (1971) and Martindell (1962) have earlier advanced a rather wholistic argument saying that a good way of measuring performance is by a complete review and evaluation of the organisation's total set of activities.[13] In the words of Mahmud and Das[14] "Multiple criteria or composite criteria is the best answer to performance evaluation (PE)." "Under the System of multiple criteria, it is felt that almost all aspects of the job will receive adequate attention and emphasis, so that efforts of individual will not be distorted.[15]. Mahmud and Das (1986) argued that PE is a hybrid, sharing of public governmental institutions and private enterprises, so here, neither commercial profitability nor social profitability alone can rightly represent essential characteristics of sound performance evaluation. They have given a list of possible multiple criteria taking a mix of financial indicators, operational indicators and socio-economic indicators that can be used for performance evaluation.

In the Indian Subcontinent, several studies have been undertaken on the assessment of organisation's performance. Sobhan and Ahmed [16] used value added, capacity utilisation, sales and profitability of the nationalised industries as well as production trend as performance indicators. In another study "The Economic Performance of the Denationalised Industry in Bangladesh: The case of Jute and Cotton Textile Industries", the authors used aggregate production trends, efficiency levels, productivity, financial performance and capacity utilisation as criteria for comparing the performance of public and private sector industries.[17] Ahmed [18] in his comparative study of efficiency and profitability of jute mills under former EPIDC management, joint EPIDC/ private management and some mills under purely private management , used number of looms, production capacity, percent of capacity utilised, production per loom per year at actual tonnage; production per loom per hour in lbs, profit before appropriation and profit per loom as indicators. Shaha[19], for comparing the performance of denationalised spinning mills during pre and post denationalisation periods, took the following indicators–production and its changes within these two periods, comparative position of installed and operating capacity, sales, cost of production per lb of yarn and profitability in these two periods. Haque[20] used productivity and profitability as the criteria for comparing the performance of public sector, private sector and multinational enterprises of Chittagong.

2.2 CAPACITY UTILISATION

Capacity utilisation means that proportion of the total capacity which has been gainfully utilised for production of required goods and services. Like the concept of productivity, the term capacity is often used to connote different meanings. It has different meanings when looked from different angles. The different concepts of capacity are discussed below:

Licenced Capacity: Licenced capacity means the capacity for which a firm has obtained a licence from the competent issuing authorities.

Designed Capacity: After the Licence is obtained, the job of erection or supply of plant is given to a manufacturer or supplier, who designs a plant for certain capacity. Designed capacity of the plant is a technical factor and therefore may not be equal to licenced capacity.

Installed Capacity: Being satisfied that the plant is properly installed according to specifications, the manufacturer and management declare the installed capacity of the plant. This is the maximum possible capacity which can be gainfully utilised. This installed capacity may or may not be equal to licenced or designed capacity.

Rated Capacity: Rated capacity refers to the maximum capacity which can be utilised under conditions prevailing in a country. Rated capacity is the ideal capacity under given conditions.

Attainable Capacity: Though rated capacity is the capacity which can be utilised under ideal conditions existing at the time when plant was installed and capacity rated, certain unforeseen and uncontrollable factors may cause a shift in these ideal conditions. If these factors are of a permanent nature, and the rated capacity of the plant can never be achieved (unless the whole plant is re-structured) the capacity of the plant will have to be re-rated. The maximum possible capacity under the changed circumstances is called "attainable capacity".

Available Capacity: Attainable capacity may not be available for certain period of time due to some factors of temporary nature such as non-availability of power, feedstocks, spares, which may exist for a few months or even few years. They temporarily reduce the capacity of the plant. The maximum capacity which

can be utilised during a particular period within a given set of conditions can be called 'available capacity'.

2.3 PRODUCTIVITY AND ITS MEASUREMENT

As it is well known, productivity is a ratio of output to input, it means the overall net yield of goods and services during a special period, achieved with a given volume of resources. It may be defined as "the ratio between the production of a given commodity measured by volume, and one or more of the corresponding input factors, also measured by volume.[21] A memorandum published by OECD (1950) defines productivity as follows: "Productivity is the quotient obtained by dividing output by one of the factors of production". According to the American Productivity Centre, productivity is "Total output over total input and that the inputs include labour, capital, energy, materials and purchased services.[22] The concept of productivity guides the management in production process and measures its success. It measures the degree of efficiency at which man, materials, money and energy are utilised. The increasing productivity means the increasing efficiency of various resources of production or better results with lesser efforts.

But unfortunately, productivity does not convey the same meaning to all those who use it. According to Thomas K. Connellan[23] "Productivity means different things to different people. To workers productivity means a speed-up in their work pattern, To union leaders, it means the opportunity to negotiate for higher wages. To management, it means increased profitability, to consumers, it means better goods at lower cost, to marketing directors, productivity improvement increases the firms competitiveness abroad by reducing the cost of its goods sold in foreign markets and to economists, it means an increase in country's standard of living tied to gain in output per man hour".

Productivity may be of labour, capital, power, raw materials etc. or may be a combination of two or more of these factors. In actual practice the word "productivity" has almost become a synonym of "productivity of labour" for it is always understood to denote labour productivity when it is accompanied by any qualifying word before it. But the concept of labour productivity has been criticised by some authors. Professor Davis, H. S.[24], pointing out the incompleteness of this concept, raised the questions that: can total input be completely expressed in labour terms? Can the efficiency of industry be fully measured by the ratio of physical output to labour effort putforth, including the sum of actual and embodied labour? Similarly Fabricant[25] points out the inadequacy of labour productivity in the following words: when other resources are used in significant volume and change occurs in the volume of such resources used (which is almost, always the case), a measure of productivity based on a single resource might tell us little or nothing of change in the efficiency with which this resource was being utilised. It might not even point in their right direction.

From this criterion it seems that the concept of labour productivity alone is not very helpful in underdeveloped countries.

Productivity measures the relationship between actual inputs used and actual outputs achieved, the lower the inputs for a given set of outputs or the higher the outputs for a given sets of inputs, the higher the level of productivity. So productivity measurement focuses on two aspects of the relationship between inputs and outputs. It evaluates– i) whether more input than necessary have been used to produce output and ii) whether the best mix of inputs has been used to produce output. We may have as many productivity ratios or indices as there are factors of production. The basic productivity ratio is:

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}}$$

Kendrick and Creamer[26] are considered to be the founders of this concept and take the credit of presenting the first model for measuring productivity in a systematic manner. The authors consider that a company's productivity can be measured and analysed in basically three types of productivity indices—

$$\text{a) Total productivity Index} = \frac{\text{Total Output}}{\text{All Input Factors}}$$

$$\text{b) Total Factor Productivity Index} = \frac{\text{Net Output}}{\text{Total Factor Input}}$$

where, Net output = Output – Intermediate goods and services,

Total Factor Input = Manpower Input + Capital Input.

$$\text{c) Partial Productivity Index} = \frac{\text{Output}}{\text{One Factor of Input}}$$

Input factors are considered as labour, capital and materials and the partial productivity Index, so obtained are referred to as partial productivity of labour, partial productivity of capital and partial productivity of materials.

This model of productivity measurement as suggested by Kendrick and Creamer has influenced researchers extensively and a large number of models have been formulated which are either modifications or extensions of the suggested approach.

2.4 CONCEPT OF COST

Horngren[27] explains the term 'cost' as "sacrifice or foregoing." According to "the terminology of Cost Accounting" issued by the Institute of Cost and Management Accountants, London, the term 'Cost' has been defined as "the amount of expenditure (actual or notional) incurred on, or attributable to, a given thing." The Institute of Chartered Accountant of India in 'Guideline Note on Terms used in Financial Statements' defines cost as "the amount of expenditure incurred on or attributable to a specified article, product or activity,"[28] Thus, cost has been defined as an expenditure incurred on a thing.

In a textile industry cost means different kinds of resources sacrificed for acquiring different means of production including purchase of raw cotton and other materials and all other conversion costs incurred for converting the raw cotton to yarn of different counts.

2.5 ELEMENTS OF COST OF PRODUCTION

Management needs analysis of cost to take decision and to control cost and analysis leads to subdivision of costs into different elements. The foundation of the sub-division of costs into different elements is the economic homogeneity of different types of expenditures. These elements of cost characterise the structure of cost of production and total cost, and the nature of their changes with the change in other variables in the production process.[29]

Three general elements of manufacturing cost are usually recognised: direct materials, direct labour and factory overhead. These components of cost of production are discussed, in brief, in the following paragraphs.

i) **Direct Materials:**

Direct materials are those materials and supplies, which can be identified with the manufacture of a product or of a group of products in a manufacturing concern. Materials may be considered as direct charge at one time, but an indirect or overhead charge on other occasions. The test for direct materials is that they must be accountable and traceable as they enter into the product, service, or job. On this basis, they are distinguished from indirect materials, such as stationary, oil and gasoline, which are used, for general administrative and manufacturing purposes and from repair parts and replacements, which are required for equipment and buildings. Direct materials, thus generally include—

a) all materials specially purchased or requisitioned for a particulars process, job or production order;

b) all components, either by purchase or by production, similarly used;

c) all materials passing from one process or operation to the other;

d) all primary packing materials i.e., cardboard, boxes, wrappings, cartoons etc.[30]

The cotton textile spinning mills in Bangladesh use the followings as direct materials for their productions:

a) Raw cotton,

b) Stable fibers like polynosic, viscose etc.

c) Wool tops,

d) Nylon clips.

ii) **Direct Labour:**

Labour is the second important factor of production. Direct labour is the cost of the services of employees actually working on the product itself, rather than the cost of supervisory or other indirect labour such as clerks, foremans, department heads, timekeeper and janitors, which are some what removed from actually working on the product. A worker may be direct labour for a certain number of hours but be an indirect worker for the balance of the day. Cost paid to workers engaged in production of goods are direct labour costs or direct wages.

In case of cotton textile mills of BTMC and BTMA, labour cost means the wages and salary paid to the persons working in the production department. The theory of cost accounting defines labour cost as the wages paid to the labour directly engaged in the production process. In the annual reports of BTMC and member mills of BTMA, the statement of cost of goods sold showed the total cost of wages and salaries in one single head and only office salaries under other heads.

iii) **Factory Overhead :**

Factory overhead includes all costs related to factory production which are not direct materials or direct labours. Certain items of overhead may be determined directly for a machine, an operation, or a department but will be indirect as to the unit of output. An overhead item, such as electric power, may be identified by meter with a machine or department which produces a number of units of output.

Three categories of factory overhead may be distinguished: a) indirect materials, b) indirect labour and c) general factory overhead. These components of factory overhead are discussed separately below:

(a) Indirect materials:

Indirect material is the material that can not be traced in the finished products such as consumable stores, i.e., lubricants, cotton waste, grass, oils, works stationary etc. These sorts of indirect material do not form the major part of output but inevitable for production. These minor items of materials such as thread in shirt making can not be conveniently treated as direct material but enter into production and related to factory, become part of factory overhead. The very nature of technology used in the cotton textile spinning mills does not require the use of any kind of indirect materials.[31]

b) Indirect Wages:

Indirect wages represent that parts of labour, which can not be directly identified with a job, process, operation but auxiliary to production, are generally treated as indirect wages. Generally expenses like wages to supervisors, watchmen, firemen, inspectors, maintenance workers, overtime premium, holiday works bonus etc. which are not directly related to physical production are categorised as indirect wages.

c) Other Indirect Expenses:

There are some other expenses, which are neither indirect material nor indirect wages nor can be charged to production directly and are generally termed as indirect expenses. Examples of other indirect expenses are depreciation of factory building and equipment, insurance on factory, rent, taxes, utilities etc.

Normally, in the cost accounting literature, total factory overhead is shown in a single head. But from analytical and control point of view, it is better to subdivide the total expenditure into major components which form this total cost. In the statement of cost of goods sold of cotton textile mills under BTMC (Public Sector), the total factory overheads are sub-divided into power and fuel,

stores and spares, depreciation, insurance and the remaining components are grouped into other factory overhead. On the other hand, in the case of cotton textile mills of BTMA (Private Sector), the total factory overheads are subdivided into some more minor heads such as, carrying and loading and unloading expenses, laboratory test, inspection fees etc.

In both the cases of mills under BTMC and BTMA, some indirect expenses (other than indirect material and indirect labour) such as power and fuel, stores and spares, depreciation etc. occupy a significant position. Our investigation has been kept restricted only to power & fuel and stores & spares and depreciation as significant part of factory overhead.

2.6 CONCEPT OF PROFIT AND PROFITABILITY

Profit :

The excess of output over the input factors expressed in monetary terms is called profit. Thus it is the excess of income over costs. Kohler [32] defined profits as "A general term for the excess of revenue, proceeds or selling price over related costs." Actually, the meaning of profit differs according to the use and purpose of the figure. For accounting purpose the profit is the difference between total revenues and total expenses over a period of time. The term has several connotations and each concept is used in a distinct context. Gross profit is the difference between sales and the manufacturing cost of sold goods. The most common measures of profit is profit after taxes (PAT), or net income which is a result of the impact of all factors on the firms earnings. Taxes are not controllable by management. To separate the influences of taxes, therefore, profit before taxes (PBT) may be computed. If the firm's profit has to be examined from the point of view of all investors (leaders and owners), the appropriate measure of profit is

operating profit. Operating profit is equivalent of earnings before interest and taxes (EBIT) when the firm does not have non-operating income. This measure of profit shows earnings arising directly from the commercial operations of the business without the effect of financing. The concept of EBIT may be broadened to include non-operating income if they exist.

Profitability :

The basic objective of a business is to earn a satisfactory return from it. The crucial indicator of financial performance of an enterprise, therefore, is its profitability. The word "profitability" is composed of the word 'profit' and 'ability'. The term ability reflects the power of the enterprise to earn profit. This ability is also referred to as 'earning power' or operating performance of a concerned investment. Therefore, profitability means the profit making ability of a firm and is a 'qualitative term' used in business world to measure the profits earned by a firm in a particular time span. According to Gibson and Boyer[33] "profitability is the ability of the firm to generate earnings". Haward and Upton[34] defined profitability as the ability of a given investment to earn a return from its use. Sometimes the term "Profitability" and "profit" are used synonymously but there is difference between the two. According to Chakraborty[35], "The term profitability has a sense of relativity, where as the term profit is used in absolute sense".

Profitability of an industry at macro level and of an individual firm at micro level has obviously a direct bearing on their growth. Profits are essential for survival and growth over a long period of time in the economic and competitive world but the goal of an enterprise should not be the maximisation of profit but the maximisation of profitability.

Profitability in any single unit of business or in any industry, mainly depends upon such factors like raw materials, labour, capacity utilisation, the prices of finished products and the managerial efficiency. All these factors do play an important and indispensable role to increase the profitability. Poor operational performance may indicate poor sales and hence, poor profits. A lower profitability may arise due to the lack of control over expenses. In accounting, profitability may be described as a yardstick of the enterprise performance and indicates public acceptance of the products. In the words of Weston and Brigham[36], "Profitability is the net result of a large number of polices and decisions". The profitability ratios show the combined effects of liquidity, asset management and debt management on operating results.

2.7 WORKING CAPITAL AND ITS INFLUENCING FACTORS

A business firm needs capital not only to finance its fixed assets but also to finance its current assets. As we know, firms are required to keep stock of raw materials for a continuous production. Some goods remain in the manufacturing process in the form of semi-finished goods. After production is over, some of the finished goods are sold and some remain in the stock. In this way firms need to maintain inventories of raw materials, work-in-process and finished goods. If finished goods are sold on credit, investment will be needed in receivables also. After this, in the normal operations, a firm requires cash to pay for the various operating expenses in addition to pay its creditors and to pay for the taxes, dividend etc. This requires maintenance of some cash balance to avoid defaults in payment. If a firm has excess cash balance, for a temporary period, it is to be invested in marketable securities. In this way, the required assets in the normal operating cycle are inventory, receivables, marketable securities and cash. These assets are called current assets, which can be converted into cash within an accounting year (or operating cycle), and capital invested in these assets is known

as 'Working Capital'. When working capital is regarded equivalent to the total current assets, it is called gross concept. However, there is another concept of working capital, which is known as net concept. Under net concept, working capital is equivalent to total current assets minus total current liabilities, which is financed with long term funds.

Gross working capital concept is a broader concept and emphasises on the quantitative aspects, while net working capital concept is a narrow concept and emphasises on the qualitative aspects. In fact, these two concepts are not exclusive, rather they have equal significance from management view point. The gross working capital concept focuses attention on two aspects of the management of current assets: a) optimum investment in current assets and b) financing current assets. Investment in current assets should be optimum, i.e., neither too high nor too low as these are the two danger points. Excessive investment in current assets should be avoided, because it impairs firm's profitability, as idle investment earns nothing. On the other hand, inadequate amount of working capital can threaten solvency of the firm because of its inability to meet its current obligations. It should be realised that the working capital needs of the firm may be fluctuating with changing business activity. This may cause excess or shortage of working capital frequently.[37] The management has to maintain a judicious balance between the profitability and liquidity or in other words, between: return and risk.

Another aspect of the gross working capital points to the financing of current assets. Additional funds required to finance current assets should be made quickly. Further, if suddenly some surplus funds arise, they should be invested in short term securities instead of keeping it idle. Thus management should be aware of the sources of finance as well as avenues of temporary investment.

As against gross working capital, being the difference between current assets and current liabilities, the net working capital indicates- a) the liquidity position of the firm and b) suggests the extent to which working capital needs may

be financed by long term sources. The higher the net working capital, better the liquidity position and vice-versa. It should not be too high, for it adversely affects the profitability. As a rule of thumb, current assets should be twice the current liabilities. A negative working capital means a negative liquidity, and may prove, to be harmful for the company. Excessive liquidity is also bad. It may be due to mismanagement of current assets.

Influencing Factors :

There are no specific set of rules to determine the working capital requirements of an enterprise. But the working capital should be adequate to conduct business operations efficiently and effectively. According to Mc Mullen,[38] "Working Capital should be sufficient in amount to enable the company to conduct its business on the most economical basis and without financial stringency and to meet emergencies and losses without danger of financial disaster." Working capital needs of a firm are influenced by a large number of factors. As all factors are of different importance, the effect of relevant factors should be analysed while deciding the quantum of working capital requirements. The following is the description of some of the important factors:

(a) ***Nature and Size of Business:*** Nature and size of a firm have important bearing on the quantum of its working capital. Generally, trading and financial firms require a large sum of money to be invested in working capital than fixed assets. But service firms need less investments in current assets as against fixed assets due to a short operating cycle. Some manufacturing business, such as tobacco manufactures and construction firms, also have to require a substantial working capital and have to invest a nominal amount in the fixed assets. Working capital needs of the most manufacturing concerns fall between two extreme requirements of trading firms and service firms. Such concerns have to make adequate investment in current assets depending upon the total assets structure and other variables. The size of business also determines the size of working capital.

(b) ***Manufacturing Cycle:*** Manufacturing cycle also has a bearing on the size of working capital which covers the purchase and use of raw materials and the production of finished goods. If manufacturing cycle is long, firm's working capital requirement will be large. In contrast, if the cycle is short, low will be the firm's working capital requirement.

(c) ***Seasonality of Operations:*** In the case of seasonal industry, working capital requirements fluctuates highly during the year. For instance, a substantial amount of working capital is required during winter season in woollen goods manufacturing company as the production goes on at its peaks during that period. But in summer, the need for working capital decreases sharply in that industry. Again a stable working capital is required in perennial industry, where production and sales go on throughout the year.

(d) ***Production Policy:*** A firm may maintain a constant production strategy in order to minimise the working capital problems arising from seasonal changes in the demand for its product. A steady production policy causes heavy inventories to accumulate during the off season periods resulting in a greater inventory costs and risks. Thus, if costs and risks of maintaining a constant production schedule are high, the firm may adopt the changing production schedules considering its changing products demand. The firms who manufacture a variety of products, can diversify their activities and solve their working capital problems. They can manufacture the original product line during its increasing demand and other products may be manufactured to utilise physical resources and working force during its off season. Thus, production policies differ from firm to firm and the quantum of working capital is also determined by different production policy of the firms.

(e) ***Credit Policy:*** The credit policy differs from firm to firm depending upon the norms of the industry to which the firm belongs. The credit terms to be granted to customers also affect the requirement of working capital of a firm. A firm has the flexibility of shaping its credit policy within the constraint of industry norms

and practices. The firm should be discretionary in granting credit terms to its customers. Different terms may be given to different customers depending upon the individual case. A liberal credit policy becomes harmful to the firm and makes the average collection period high later on. As the fund is locked up for a longer period in receivables, it needs more working capital. Opposite of this is true in the case of a firm following a rigid credit policy. Working capital needs will be less if liberal credit terms are available to the firm and vice-versa.

(f) ***Market Conditions:*** The working capital requirement of a firm is also affected by market conditions. If a keen competition prevail in the market it requires a large investment in finished goods in order to give prompt service to the customer who may not be ready to wait as other firms may supply the same goods to them immediately. Further, owing to tough competition, credit terms will tend to be liberal and thus, a large investment in receivables will be needed. In contrast, if the competition is weak or the firm is in monopolistic situation, it may require a nominal investment in inventory and receivables.

(g) ***Price Level Changes:*** In rising price levels a firm is to maintain a higher amount of working capital. Same levels of current assets will need increased investment when prices are increasing. However, companies which can immediately revise their product prices with rising price levels will not face a saver working capital problem. Effect of rising prices will be different for different companies. Some companies may not be affected by rising price while others may be affected badly. Some will face no working capital problem, while working capital problems of others may be aggravated.

(h) ***Other Factors:*** In addition to the aforesaid factors, there are many other factors, which affect the working capital requirements of a firm. These factors are: rate of business expansion, operating efficiency of a firm, profit margin and profit appropriation, changes in technology, industrial policies of the Government and so on. These factors should be considered while deciding the quantum of working capital.

2.8 FINANCIAL STATEMENT AND ITS ANALYSIS

The accounting process mainly aims to accumulate and report historical accounting information showing an organisation's financial position and results of its operations. Financial Statements are the end result of the accounting process. According to Hampton, "A financial statement is an organised collection of data organised according to logical and consistent accounting procedure".[39] Thus all the statements and accounting reports prepared by the accountants at the end of a business cycle may be termed as financial statement. But the very use of the term as 'balance sheet' and 'profit and loss' account. The balance sheet reflects the assets, liabilities and capital of the business and profit and loss account shows the results of operations achieved during a certain period. There are two other frequently used financial statements, one dealing with sources and uses of funds and the other with the retained earnings. Thus, the principal financial statements are the balance sheet or statement of financial position, the profit and loss statement or the income statement, the funds statement or statement of changes in financial position and statement of retained earnings.

Analysis of financial statement is a process of getting an insight into the operating activities of a business enterprise. It results in the presentation of information that acts as aid in decision making by business managers, investors, and creditors as well as other groups who are interested in the financial status and operating results of a business. The analysis of financial statements of a business enterprise may be conducted either internally or externally. The internal analysis is generally conducted by management for their internal purposes and the external analysis is conducted by those or for those who are outside the business enterprise. These outside parties may be shareholders, creditors, investors, bankers, government agencies, trade unions or may be research workers.

The overall objective of a business is to earn a satisfactory return on its funds invested, consistent with maintaining a sound financial position.[40] The

financial statements are intended to state an accurate picture of financial condition and operating results of a business concern in a condensed form. The objective of financial statement analysis is a detailed study of profitability and financial position with cause and effect. An analyst of financial statements attempts to interpret and draw conclusions from the statements. Garison[41] has stated, "The purpose of financial statement analysis is to assist statement users in predicting the future by means of comparison, evaluation and trend analysis.

2.9 RATIO ANALYSIS

To evaluate and analyse the financial position and performance of an enterprise, the analyst needs certain techniques. The commonly used technique for analysis of financial statements is the 'Ratio Analysis'. It is the principal technique used in judging the financial growth, development and the present condition of a business enterprise. Ratio is the numerical relationship between two numbers. And hence, ratio analysis of statement stands for the process of determining and presenting the relationship of items and groups of items in the statements.[42] In the words of Batty[43] the term 'accounting ratios' is used "to determine significant relationship which exist between figures shown on a balance sheet, in a profit and loss account, in a budgetary control system, or in any other part of the accounting organisation." The technique of ratio analysis is widely accepted in accounting and mathematical world. Analysis of financial statements of an enterprise by financial ratios enables the financial manager as well as the other external parties, to evaluate the financial condition and performance of a firm rapidly by making comparisons of ratios obtained from the firm with ratios obtained from other comparable firms.[44] In the words of Helfert, "Ratio analysis provides guides and clues especially in spotting trends towards better or poor performance, and in finding out significant deviation from any average or relatively applicable standard".[45]

However, ratios may be expressed in the following three ways[46] :

a) **Ratio :** Specifically the simple division of one number by another, e.g., current asset to current liability ratio is 2 : 1.

b) **Rate :** The ratio between two numerical facts usually over a period of time, e.g., stock turnover is three times a year.

c) **Percentage :** A special type of rate which expresses the relation in hundredth, e.g., gross profit is 25% on sales. For types of financial ratios are commonly used —(i) liquidity ratios, (ii) profitability ratios, (iii) activity ratios, and (iv) leverage ratios.

2.10 32s AVERAGE COUNTS

The cotton textile spinning mills under public and private sector of Bangladesh are engaged in producing yarn of different counts viz., 10s, 16s, 24s, 32s, 45s, 62s, 80s etc. Higher counts means finer and thinner yarn. The production of these different counts of yarn is converted into an average counts, viz., 32s, 45s etc. for the comparison purposes by the mills and corporations. In BTMC, the production of different counts of different mills is converted into an average 32s counts. We have taken production data of sample mills under both sectors as 32s average counts for our comparison purposes.

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3

ANALYSIS OF PRODUCTION AND PRODUCTIVITY

3.0 INTRODUCTION

Production is the process by which input is converted into output. Growths of economy of a country today are much influenced by production activities of the individual sector of that country. Non- achievements of targets of production and under utilisation of capacity have adverse effects on profitability of the undertaking. "Committee on Public Undertaking (COPU) in India, in this context had recommended that public undertakings should, therefore, do all in their power to achieve optimum level of production and thus contribute to the achievement of country's goal of achieving self reliance."[1]

Developmental strategy of a country is a function of relative economic performance of all sectors and the sectoral performance depends upon the efficiency with which the resources are employed to achieve the given targets. Thus productivity of the factors of production determines the growth path of an industrial enterprise.[2] Productivity improvement is considered vital to achieve several corporate objectives. Measurement of productivity therefore, provides an important tool and a yardstick. It helps to identify problem areas in order to take corrective measures towards planning, redeployment of resources and other management controls to achieve better performance. It also provides measures for comparisons between the performance and the non-performance; between the performance in one period to another or between organisations or plants of an organisation.[3]

An attempt has been made in this chapter to analyse the production performance and productivity of the cotton textile mills under public and private Sectors in Bangladesh over the period of 1987-88 to 1996-97.

3.1 ANALYSIS OF PRODUCTION PERFORMANCE

In this section we analysed the production performance of cotton textile mills under public sector vis-à-vis private sector during the period under study and also explained the observed differences between the two sectors. From Appendix-1, it can be noted that in almost all the public sector mills the total production showed a declining trend since 1992-93. In the proceeding years Mills-A_3, A_4. A_5 A_7 and A_8 could be able to increase their production while in the other cases the total production fluctuated.

In private sector, a clear increasing trend was observed in Mills- B_7, B_8, B_9 and B_{10} through out the period and it was observed up to 1994-95 in case of Mills-B_5 and B_6. In other mills a mixed trend could be said to have been established all over the period. The annual average production levels during 1987-88 to 1991-92 and 1992-93 to 1996-97 along with percentage change in production over these two periods for each mill under public and private sector and sector level trends in production are given in Table-3.1 and 3.2. The sectoral trend values of production using least square method are also presented in Figure-1.

The data presented in table-3.1 (on next page) tells us that average production went down in all the public sector mills during the second half of the study period. The drop in production was restricted to below 20% only in case of Mill- A_7. The average production decreased by 20% to 30% in case of Mills-A_1, A_3 and A_{10} while it decreased by more than 30% in Mills-A_2, A_5, A_6, A_8 and A_9 during 1992-93 to 1996-97. The situation was worst in Mill-A_5 in which the production went down by 55.52% during the same period.

Table-3.1: Production Trends in Public and Private Sector: 1987-88 to `1996-97

[Figure in Lakh kg.].

PUBLIC SECTOR				PRIVATE SECTOR			
Mills	Average Production (1987-88 to 1991-92)	Average Production (1992-93 to 1996-97)	Percentage change	Mills	Average Production (1987-88 to 1991-92)	Average Production (1992-93 to 1996-97)	Percentage change
A_1	18.15	13.39	(26.23)	B_1	7.91	22.72	187.23
A_2	14.62	10.15	(30.57)	B_2	15.04	19.00	26.33
A_3	13.15	9.56	(27.30)	B_3	18.32	21.72	18.56
A_4	8.24	5.35	(35.07)	B_4	39.50	56.58	43.20
A_5	6.07	2.70	(55.52)	B_5	6.52	8.77	34.51
A_6	10.08	6.65	(34.03)	B_6	8.39	18.68	122.65
A_7	20.50	17.00	(17.07)	B_7	34.74	91.13	162.32
A_8	11.09	7.31	(34.08)	B_8	9.29	17.36	86.87
A_9	7.22	4.42	(38.78)	B_9	NA	24.79	NA
A_{10}	11.05	8.05	(27.15)	B_{10}	NA	30.11	NA

Source : Compiled from Official Records of BTMC and Member Mills of BTMA; necessary calculations have been made.

Notes : i) Figures in brackets indicate negative changes, ii) NA = Not Applicable

The relative superiority in the production performance was maintained in all the private sector mills. All the mills succeeded in increasing their production during 1992-93 to 1996-97 and no mill suffered a fall in production during the same period. As we can note from the table, after denationalisation Mills-B_1, B_2, B_3, and B_4 achieved better performance in terms of production under private ownership vis-à-vis the performance of the mills under public sector. The average

production was 22.72 lakh, 19.00 lakh, 21.72 lakh and 56.58 lakh in case of Mills-B_1, B_2, B_3 and B_4 respectively during 1992-93 to 1996-97 recording 187.23%, 26.33%, 18.56% and 43.20% increase respectively over 1987-88 to 1991-92. Mills-B_5, B_6, B_7 and B_8 also achieved 34.51%, 122.65%, 162.32% and 86.87% increase in production respectively during 1992-93 to 1996-97 over their average production during 1989-90 to 1991-92. The average production during 1992-93 to 1996-97 were 24.79 lakh kg and 30.11 lakh kg in Mills- B_9 and B_{10} in which commercial production was started in the year 1992-93.

Table-3.2: Sectoral Trends in Production of Yarn (32s average counts): 1987-88 to 1996-97.

[Figure in lakh kg]

Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average 1987-88 to 1991-92	Average 1992-93 to 1996-97	Percentage change
Average production in public sector	10.02	11.08	12.70	13.15	13.14	11.54	9.87	8.85	8.14	3.90	12.02	8.86	(29.62)
Average production in private sector	17.53	18.41	17.62	17.33	21.05	25.30	29.20	31.25	32.37	37.32	18.39	31.09	69.06

Source : Compiled from Official Records of BTMC and Member Mills of BTMA;

Note : i) Figure in brackets indicates negative changes.

Table-3.2 brings out the trends in production in public sector vis-à-vis private sector textile mills. The average annual production in all the public sector mills taken as a whole decreased by (29.62%) during 1992-93 to 1996-97 over 1987-88 to 1991-92. Production of yarn in these mills dropped from 12.02 lakh kg. annually during 1987-92 to 8.46 lakh kg annually during 1992-97. On the other hand annual average production in all the private sector mills taken as a whole rose from 18.39 lakh kg to 31.09 lakh kg over the same period showing an increase of 69.06%. Taking individual years, we notice a continuous decline in

average production since 1991-92 in public sector mills. The average production in these mills fell down to 3.90 lakh kg during 1996-97 registering (61.08%) decrease over 1987-88. But an opposite picture was shown in performance of private sector mills. A continuous increase in production since 1991-92 was witnessed. The average production in all the private sector mills taken together went up to 37.32 lakh kg in 1996-97 from 17.53 lakh kg in 1987-88 showing an increase of 112.89%. In terms of production performance therefore, private sector mills maintained superiority as compared to their counterparts in the public sector.

3.1.1 Trends in the Efficiency in Production :

Production achieved is a partial indicator of performance. The level of efficiency at which production is carried out is another important indicator of performance.[4] It needs to be studied if one intends to obtain a more complete picture of performance trend. The data on efficiency level was scanty in both the sectors. Available information on this indicator is "per spindle per shift production (PSPS) in grams (32s average counts)" from public sector but year-wise information as to per spindle per shift production in grams could not be gathered from all the private sector mills. Different mills calculate per spindle per shift production in different counts and in different units of measure. Moreover, some mills did not provide us ready data on this indicator but a formula was given us by them for calculating this. Thus, per spindle per shift production of those private mills whose data was not available has been calculated by us using the following formula suggested by them.

Per Spindle Per Shift Production in Grams (32s average counts):

$$\frac{\text{Annual production in Kg}}{\text{No. of spindles operated X No. of working days X 3 (shift)}} \text{ X } 100$$

Table 3.3 : Per Spindle Per Shift Production (32s average counts)

[in gram]

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	Average 1987-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average 1992-97	% change over 1987-92
PUBLIC SECTOR	A_1	98.46	99.50	92.10	91.44	85.62	93.42	83.89	83.32	79.10	70.87	79.89	79.41	(14.97)
	A_2	86.21	84.82	80.23	75.29	75.63	80.44	76.23	81.59	74.16	68.79	63.29	72.81	(09.49)
	A_3	68.55	71.27	73.47	71.16	71.04	71.10	72.19	77.16	70.82	70.21	71.38	72.35	01.76
	A_4	68.22	70.21	72.92	76.53	78.97	73.37	78.08	80.27	79.34	76.05	76.46	78.04	0.6.36
	A_5	64.64	62.30	58.75	62.34	60.85	61.78	57.33	60.14	75.18	75.46	59.92	65.61	06.20
	A_6	66.57	64.84	69.32	81.45	85.78	72.51	81.78	82.85	82.42	83.17	86.11	83.27	14.84
	A_7	76.33	71.24	87.15	91.43	89.79	83.25	89.09	85.57	89.21	88.72	89.17	88.35	06.13
	A_8	75.42	68.04	67.12	69.22	65.98	69.16	68.61	68.77	67.51	66.57	66.37	67.57	(02.30)
	A_9	81.90	82.02	79.70	78.82	80.82	80.65	76.62	79.29	74.10	70.32	65.85	73.24	(09.19)
	A_{10}	66.99	70.39	74.71	67.70	68.55	69.67	91.90	72.65	70.44	65.26	55.82	67.21	(03.53)
	Ave	75.33	74.46	75.55	76.54	76.30	75.54	75.57	77.16	76.23	73.54	71.43	74.79	(00.99)
PRIVATE SECTOR	B_1	79.66	68.89	72.01	57.55	70.02	69.63	76.26	68.89	67.19	62.65	76.26	70.25	00.89
	B_2	64.91	63.90	67.18	59.49	63.19	63.73	66.12	69.75	74.70	71.53	64.96	69.41	08.91
	B_3	76.73	78.25	82.35	78.30	77.91	78.71	79.84	74.33	77.89	79.91	77.44	77.88	(01.05)
	B_4	100.66	95.48	126.74	81.13	85.31	97.86	115.59	115.48	107.40	105.10	100.96	108.91	11.29
	B_5	-	-	N A_1	53.49	45.65	49.57	56.25	67.38	84.15	77.28	53.78	67.77	36.72
	B_6	-	-	82.67	83.66	100.67	89.00	60.83	85.80	88.88	93.99	85.50	83.00	(06.74)
	B_7	-	-	87.30	100.36	109.69	99.12	129.46	147.87	128.89	140.46	138.64	137.06	38.28
	B_8	-	-	63.15	58.35	57.17	59.56	47.50	66.74	78.92	78.07	92.71	72.79	22.21
	B_9	-	-	-	-	NA_1	NA_2	108.29	104.34	83.48	103.87	235.00	127.00	NA_2
	B_{10}	-	-	-	-	NA_1	NA_2	154.95	148.68	154.61	133.89	142.91	147.01	NA_2
	Ave	80.49	76.63	83.06	71.54	76.20	75.90	89.51	94.93	94.61	94.68	106.82	96.11	26.63

Source : Compiled from Official Records of BTMC and Member Mills of BTMA; necessary calculations have been made.

Notes : i) '–' indicates the period before establishment and commencement of production,

ii) NA_1= Not Available; NA_2= Not Applicable,

iii) Figures in Brackets indicate negative changes.

The relevant figures for the public and private sectors are presented in Table-3.3. We observed from the table that efficiency measured in terms of per spindle per shift production of yarn fell down in five mills and improved in the other five mills under public sector during 1992-97 over 1987-92. During 1987-92 Mills-A_5, A_8 and A_{10} had an average per spindle per shift production below 70 grams, it was in the range of 70-80 grams in case of Mills-A_3, A_4 and A_6 and the remaining four mills namely A_1, A_2, A_7 and A_9 achieved PSPS production levels exceeding 80 grams. In contrast, during 1992-97 among the mills having PSPS production below 70 grams, Mill-A_5 had an increase in production but Mills-A_8 and A_{10} had a decrease in it. Five mills namely Mills-A_1, A_2, A_3, A_4 and A_9 achieved a level in a range of 70-80 grams but Mills-A_1, A_2 and A_9 had a decrease while Mills-A_3 and A_4 did better. Mills-A_6 and A_7 had a moderate performance, their average PSPS production of yarn was more than 80 grams having 14.84% and 06.13% increase respectively over 1987-92. The Public sector average taking all the mills as a whole was 74.79 grams during 1992-97 registering an insignificant decrease (0.99%) as compared to 75.54 grams during 1987-92.

On the other hand, the private sector mills did much better during 1992-97 although their performance judged by PSPS production during 1987-92 was not so better as compared to public sector mills. The average production per spindle per shift taking all the mills together was higher than public sector average up to 1989-90 but in 1990-91 and 1991-92 it was lower than public sector average. During 1987-92, among the eight mills under review, four mills (B_1, B_2, B_5 and B_8) had an average per PSPS production below 70 grams, three mills (B_4, B_6 and B_7) achieved a level in the range of 80 to 100 grams and one mill (B_3) had 78.71 grams. The private sector average PSPS production during 1987-92 was 75.90 grams, a slight higher than 75.54 grams of public sector, while it was 96.11 grams during 1992-97 registering 26.63% increase over 1987-92, much higher than 74.79 grams of public sector. During this period, among ten mills under review

five mills (viz., B_4,B_6,B_7,B_9 and B_{10}) achieved PSPS production levels between 80-150 grams. Three mills (B_1,B_3 and B_8) achieved 70-80 grams and one mill (B_2) had below 70 grams.

3.1.2 Capacity Utilisation :

Capacity utilisation is another index of production efficiency. The profitability of any industry depends to a great extent on the rate of capacity utilisation. "The term capacity utilisation has however frequently been used to mean different things both at micro and macro levels and the same has been measured in a number of ways.[5]

The choice of appropriate measure of capacity utilisation depends on the purpose of the study and the availability of data. Our present purpose is to look into the efficiency of production level of the textile mills under public and private sector. In this case achieving a high rate of capacity utilisation reflects high efficiency of an enterprise or industry as a whole. Due to non-availability of mill level data on installed capacity of production for both the sectors, the extent of capacity utilisation could not be measured in terms of physical output (production). Hence, we measured and analysed the same in terms of spindles by dividing the spindles actually operated by the installed spindles.

Table-3.4 provides the information on the levels and trends of capacity utilisation in the textile mills under public and private sectors during the period 1987-88 to 1996-97.

Table 3.4: Capacity Utilisation in the Cotton Textile Industry

[in percentage]

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	85	89	88	92	87	88	81	71	57**	44**
	A_2	75	85	82	84	80	78	82	64	64	23
	A_3	67	78	88	91	90	89	74	55	58	15
	A_4	86	88	86	85	86	76	49	63	69	39
	A_5	85	86	91	89	89	71	32	49	38	16
	A_6	77	82	83	94	92	76	61	62	39	15
	A_7	82	71*	81**	87**	87**	84**	52**	56**	61**	42**
	A_8	64	71	76	76	78	67	51	57	55	12
	A_9	85	84	76	76	78	68	67	60	51	15
	A_{10}	65	73	83	72	69	76	79	63	36	05
	Ave	77	81	83	85	84	77	63	60	53	23
PRIVATE SECTOR	B_1	96	94	98	84	42*	34**	68**	71**	54**	50**
	B_2	91	93	92	80	85	92	92	95	94	92
	B_3	87	93	91	85	84	91	88	90	93	83
	B_4	87	88	88	87	87	88	96	96	93	88
	B_5	-	-	N A	100	100	100	100	100	100	100
	B_6	-	-	97	98	99	98	99	98	98	98
	B_7	-	-	100	100	84*	100	100	90*	100	68*
	B_8	-	-	80	82	85	88	87	88	88	87
	B_9	-	-	-	-	NA	91	94	62*	80	88
	B_{10}	-	-	-	-	NA	84	96	92	92	92
	Ave	90	92	92	90	83	87	92	88	89	85

Source: Official Records of BTMC and Member Mills of BTMA.

Notes : i) '–' indicates the period before establishment and commencement of production,

ii) NA= Not Available;

iii) * Indicates initial year of expansion programme; ** average capacity utilisation of unit 1 & 2.

On the basis of above table, the rise or fall in the rate of capacity utilisation of the units under study is as under:

Yearwise Trend Analysis

(i) **1988-89:** The year 1988-89 can be termed as a year of high rated utilisation of capacity in both the sectors. The rate of capacity utilisation improved in all the cases under public sector except the Mill-A_7 in which the rate decreased over 1987-88 due to initial year of its second unit. The average rate of capacity utilisation for the public sector improved to 81% as against 77% in 1987-88. In the private sector, only four mills namely B_1, B_2, B_3 and B_4 were in operation during 1988-89 and the rate of capacity utilisation increased in all the cases except Mill-B_1 which had a decrease in capacity utilisation.

(ii) **1989-90**: This year was also year of high utilisation of capacity. The ratio of capacity utilisation improved in most of the cases. Mills having an increase were A_3, A_5, A_6, A_7, A_8 and A_{10}. Mills having a decrease were A_1, A_2, A_4 and A_9. The average rate of capacity utilisation in the public sector was 83% as against 81% in 1987-88. On the other hand, out of four old mills, the rate increased in two mills namely B_1 and B_4 where as the rate decreased in two mills namely B_2 and B_3. The three new mills (B_6, B_7 and B_8) started operation in the years and their capacity utilisation rate were 97%, 100% and 80% respectively. The average rate of seven mills was 92%, same as was in 1988-89.

(iii) **1990-91:** There was an improvement in capacity utilisation in public sector but a decline in the private sector. Seven public mills had an increase whereas three mills had a decline in capacity utilisation. Among the eight private mills under review, the rate decreased in four mills and increased in two mills while two mills (B_5 and B_7)were in 100% utilisation of

capacity. The average rate of capacity utilisation for the public sector was 85% over 83% in previous year while it was 90% for the private sector over 92% in previous year.

(iv) **1991-92:** there was an overall decline in capacity utilisation. The public sector average fell down to 84% as against 85% in the previous year; the private sector average fell down to 83% as compared to 90% in the previous year. Out of ten public mills the rate rose in three mills but declined in five mills and remained same in two mills over previous year. While on the other hand, out of eight private mills, the rate of capacity utilisation increased in three mills and declined in three mills while in two mills the rate remained the same as it was in previous year.

(v) **1992-93 & 1993-94:** The years can be termed as years of low capacity utilisation for public sector. The rate fell down in most of the cases reviewed during these years. Eight mills had a decline in the rate of capacity utilisation while two mills had an increase in the rate. The average rates for the public sector fell down to 77% and 63% respectively as against 84% in 1991-92. In private sector, the average rate of increased to 87% in 1992-93 and 92% in 1993-94 respectively. The rate decreased in only two mills. Mills- B_9 and B_{10} started production in 1992-93 and their rate of capacity utilisation increased to 94% and 96% respectively in 1993-94 as against 91% and 84% respectively in 1992-93.

(vi) **1994-95:** There was an overall decline in capacity utilisation in textile industry. The public sector average rate fell down to 60% and in private sector it declined to 88% as compared to 63% and 92% respectively in 1993-94. The rate of capacity utilisation decreased in five public mills. Among the four private mills having decline, the rate declined in two mills (B_7 and B_9) due to initial year of expansion programme.

(vii) **1995-96:** The private sector had a higher average rate of capacity utilisation as compared to the previous year average. The public sector had a decline. The private sector average increased to 89% as against 88% in 1994-95, where as the public sector average went down to 53% as compared to 60% in 1994-95. The rate decreased in six public mills and increased in four mills. Whereas it decreased in three private mills, increased in three mills and it remained the same in four mills, as it was in the previous year.

(viii) **1996-97:** There was a massive decline in capacity utilisation in case of all the public mills. The average rate went down to only 23% as against 53% in 1995-96. The private sector average rate of capacity utilisation fell down to 85% as compared to 89% in 1995-96.

There was an overall better performance in capacity utilisation in private sector as compared to that of public sector. The sectoral differences in capacity utilisation may also be presented in Fig. 2.

3.1.3 Reasons for Spindles Stoppage :

There are innumerable factors, which cause under utilisation of capacity in the textile industry in Bangladesh. From a study conducted by Rashid and Karim[6] the following main factors can be tabulated as responsible for the existence of idle capacity in textile mills under the public sector:

1. Power failure / Low voltage
2. Labour absenteeism
3. Machinery break down and Maintenance
4. Shortage of Cotton and Spares
5. Shortage of back process

6. Shortage of trained and Specialised workers
7. Shortage of working capital
8. Labour strikes
9. Low demand and market restrictions
10. Count change

The present study brought out the following main reasons responsible for idle capacity existed in the selected textile mills under public and private sector.

Public Sector	Private Sector
1) Workers absenteeism	1) Power failure
2) Power failure	2) Shortage of spare parts
3) Machinery breakdown	3) Maintenance of machinery
4) Shortage of spare parts	4) Machinery breakdown
5) Shortage of raw cotton	5) Workers absenteeism
6) Count change, and	6) Count change and
7) Others (e.g., shortage of back process, labour strike, religious purpose, etc.)	7) Others (e.g., shortage of back process, religious purpose, etc.)

In most of the mills under public and private sector, power failure contributed most to spindle under utilisation. The frequency of power failure increased in summer with load shedding. Absenteeism of workers was another major factor in case of public sector mills as well as in some private sector mills. The rate of absenteeism increased depending on the working condition, climate,

season (e.g. festive season), etc. Machinery breakdown and shortage of spare parts also contributed a significant part to spindle under utilisation in all the public sector mills vis-à-vis in some private sector mills In case of some private sector mills such as B_1, B_5, B_6, B_7 and B_9, there was no idle spindle caused by machinery breakdown during the study period. This might be due to their new and modern machines.

3.2 MEASUREMENT OF PRODUCTIVITY

3.2.1 Methodology :

In the productivity measurement all the physical quantities are expressed per factor unit. The productivity can be measured in *(i) gross output per factor unit; (ii) gross value of output per factor unit and; (iii) gross value added per factor unit*. Per factor unit means production per unit of a factor or of all factors production corresponding to partial and total factor productivity respectively[7]. To understand productivity changes in the textile industry in Bangladesh we considered only partial productivity measures.

3.2.2 Labour Productivity :

Human skill is very crucial to total input resources. There is thus the need to harness and use human skill to its optimal capacity. Labour productivity is an important component to determine the operational efficiency of an industry. It can be measured in:

i) $\dfrac{\text{Total Output}}{\text{Labour Input}}$

ii) $\dfrac{\text{Value of Output}}{\text{Labour Input}}$

iii) $\dfrac{\text{Gross Value Added}}{\text{Labour Input}}$

Labour Input: The concept of labour input for productivity refers to labour time expended in an establishment of an industry either in terms of man hours or the number of workers[8]. If the number of workers is used as a measure of labour input, changes in the average work-day and work-week are not accounted for. It is suggested that the entire number of man-hours worked gives a more accurate measure of labour input[9]. In the present study, the working hours lost could not be gathered from both the sector, the number of man-days is used as a measure of labour input. Man-days used in our labour productivity measure are those worked by direct and indirect workers in factories.

Value Added: The term 'Value Added' usually denotes the difference between the values of the input and output. According to Labour Bureau (1966), the gross value added is real terms is normally obtained by deducting the value of raw materials, fuel and powers etc. consumed from the value of gross output in the subsequent year, both are taken at their respective prices in the base period. In our study, gross value added has been calculated by deducting total material input i.e., raw materials, power and fuel, and stores and spares from gross value of output as it is done by BTMC as well as some member mills of BTMA.

The information regarding labour productivity in the public and private sector textile mills are furnished in the following tables. In order to know the trend in labour productivity of both public and private sector, index numbers with 1987-88 as the base year are given in brackets.

It can be observed from Table-3.5 that although yarn production per man-day fluctuated from year to year but the overall trend was towards decrease in almost all the public sector mills. The overall trend of labour productivity in terms of production was towards increase in almost all the private sector mills. The average yarn produced per labour per day during 1987-96 was below 4 kg in three public sector mills, it was 4 to 5 kg. in six mills. While only one public sector mill achieved above 5 kg. per labour per day . The average labour productivity was the

Table 3.5 : Labour Productivity in Terms of Production.

[Figure in Kg.]

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average 1987-97	AAG R
PUBLIC SECTOR	A_1	4.71	5.14	4.58	4.80	4.27	4.41	4.03	4.08	2.90	1.78	4.07	-8.85
	A_2	6.42	6.76	6.37	5.95	6.08	6.08	7.33	5.79	5.58	1.88	5.82	-8.36
	A_3	4.14	5.12	6.69	5.72	5.85	6.20	5.50	4.47	4.44	1.15	4.93	-6.30
	A_4	3.94	4.17	4.21	4.41	4.60	4.32	3.78	5.00	5.60	3.30	4.33	+0.05
	A_5	3.80	4.05	3.64	3.68	3.91	3.66	2.12	3.07	3.07	1.13	3.21	-7.00
	A_6	3.72	3.91	5.75	5.47	5.42	4.90	4.22	4.68	3.06	1.19	4.23	-6.88
	A_7	3.87	1.30	2.72	3.08	3.18	2.14	2.15	2.37	2.55	1.86	2.52	+1.98
	A_8	4.52	4.59	4.87	5.02	4.92	4.48	3.93	4.29	4.21	0.91	4.17	-9.29
	A_9	5.38	5.53	4.70	4.73	4.97	4.09	4.23	4.01	2.99	0.56	4.12	-14.74
	A_{10}	3.90	4.64	5.73	4.63	3.99	4.68	5.22	4.23	2.36	0.25	3.96	-12.70
	Ave	4.44	4.52	4.93	4.75	4.72	4.50	4.25	4.20	3.68	1.40	4.14	-8.79
	Index	100	101.80	111.04	106.98	106.31	101.35	95.72	94.59	82.58	31.53		
PRIVATE SECTOR	B_1	2.94	3.60	4.03	2.90	2.57	4.39	14.04	14.93	12.94	26.12	8.85	42.27
	B_2	4.49	4.32	4.80	3.71	4.18	4.96	6.38	6.99	6.64	5.58	5.25	4.35
	B_3	4.44	5.14	5.33	4.80	4.84	5.64	5.59	6.69	7.47	6.13	5.61	4.38
	B_4	4.74	4.55	4.58	5.13	4.60	6.30	6.60	6.23	6.19	5.97	5.49	3.36
	B_5	-	-	NA	12.03	10.81	13.32	16.85	22.99	23.19	9.45	15.52	2.94
	B_6	-	-	6.82	6.75	8.92	5.95	8.38	7.74	8.15	7.93	7.58	4.80
	B_7	-	-	13.27	13.37	13.19	17.43	20.12	15.58	14.19	12.00	14.89	0.01
	B_8	-	-	3.58	3.78	4.27	3.63	5.04	6.16	6.02	3.35	4.48	2.57
	B_9	-	-	-	-	N A	9.66	9.99	6.39	10.21	23.14	11.88	38.45
	B_{10}	-	-	-	-	N A	17.41	19.34	20.83	15.55	11.30	16.89	-8.47
	Ave	4.15	4.40	6.06	6.56	6.67	8.87	11.23	11.45	11.06	11.14	9.64	12.50
	Index	100	106.02	146.02	158.07	160.72	213.73	270.61	275.90	266.51	268.43		

Source : Compiled from Official Records of BTMC and Member Mills of BTMA.

Notes : i) '–' indicates the period before establishment and commencement of production, ii) NA= Not Available; iii) Labour productivity in terms of production = Gross Output/ Labour Input; Labour Input = Man-days. iv) AAGR = Annual Average Growth Rate.

lowest in Mill-A_7 while it was the highest in Mill-A_2. Annual Average Growth Rate (AAGR) was negative in eight mills while two mills had positive growth rate. The index of average labour productivity in terms of production taking all the public sector mills decreased from 100.00 to 31.53 from 1987-88 to 1996-97. In between the period till 1989-90 there was witnessed an upward trend but then a down word trend was established till the last. On the other hand, average yarn produced per labour per day during 1987-96 was below 4 kg in no private mills, it was below 5 kg in only one mill, five mills achieved average labour productivity in the range 5-10 kg, the remaining four private mills achieved productivity in the range 10-20 kg. The average labour productivity in terms of production taking all the private sector mills as a whole was 9.64 kg, more than double from the corresponding figure of public sector. The increase in average labour productivity, in all the private sector mills from 1987-88 to 1996-97 was remarkably significant, as the index rose from 100.00 to 268.43 during this period. AAGR was found as positive in all the private sector mills except one. Mill-B_1 had the highest AAGR (42.27) followed by B_9 (38.45) among all the mills under both sectors.

In Table-3.6, the data about labour productivity in terms of value of out put in the cotton textile mills under public and private sectors are furnished. The value of output per man-day decreased in 1996-97 over 1987-88 in all the public mills except one. In between the period, neither upward nor downward trend was established. Only mills A_3 and A_8 showed a mixed trend towards labour productivity over the period. In these cases, an upward trend was observed up to 1991-92 but it turned to be downward thereafter. The average value of output per man-day was in the range Tk 200-400 in case of five mills, while the same was in the range Tk 400-500 in case of four mills and one mill achieved the same above Tk 500. The index of average labour productivity in all the public sector mills taken together increased to 129.82 in 1991-92 showing a continuous upward trend

Table 3.6 : Labour Productivity in Terms of Value of Output.

[Figure in Taka]

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average 1987-97	AAGR
PUBLIC SECTOR	A_1	463.14	431.07	500.31	508.60	524.55	463.37	440.75	451.73	327.14	171.07	428.17	-8.38
	A_2	500.64	577.24	562.25	521.46	582.31	507.58	653.78	592.33	609.38	226.80	533.38	-4.02
	A_3	324.97	414.69	545.99	478.57	555.48	537.87	463.37	487.73	520.17	128.98	445.78	-1.92
	A_4	304.76	355.32	371.52	390.60	459.39	379.58	355.39	531.38	673.42	347.60	416.90	+5.34
	A_5	309.08	383.32	343.73	336.91	422.04	353.50	223.57	346.84	391.16	125.95	323.61	-1.77
	A_6	299.22	345.98	509.04	467.16	526.09	430.12	388.05	507.35	357.43	144.11	397.46	-4.73
	A_7	299.66	95.24	239.90	273.01	326.14	259.78	181.17	256.89	311.63	206.90	245.03	+10.65
	A_8	309.58	322.46	374.32	391.82	404.67	349.69	306.61	419.62	450.32	110.58	343.97	-3.22
	A_9	450.20	507.28	482.23	477.87	504.63	366.01	354.25	415.98	343.64	117.48	401.96	-9.34
	A_{10}	308.78	376.82	469.38	404.96	329.28	385.38	452.80	448.18	254.10	40.26	346.99	-8.86
	Ave	357.00	380.94	439.87	425.10	463.46	403.29	381.97	445.80	423.84	161.97	388.33	-4.49
	Index	100	106.71	123.21	119.08	129.82	112.97	106.99	124.87	118.72	45.73		
PRIVATE SECTOR	B_1	349.90	426.59	506.55	392.08	522.10	1246.28	2148.05	1873.85	1696.93	2909.15	1207.15	+34.61
	B_2	362.99	355.74	391.71	315.57	353.02	416.27	494.87	613.88	617.19	568.72	449.00	+6.00
	B_3	440.68	601.17	675.18	669.69	728.17	851.91	843.42	1179.16	1407.89	1136.16	853.34	+12.51
	B_4	362.74	396.03	374.05	409.55	366.42	499.70	564.31	718.43	769.37	629.02	508.96	+7.56
	B_5	-	-	N A	1204.79	1112.76	1255.55	1519.15	2601.03	2752.47	1101.35	1649.59	+7.21
	B_6	-	-	592.29	628.55	821.10	532.47	737.79	784.83	940.56	873.88	738.93	+8.47
	B_7	-	-	1254.08	1803.99	1469.74	1874.65	2205.69	2302.89	2175.83	1925.14	1876.50	+8.27
	B_8	-	-	476.69	502.56	570.00	570.49	654.57	865.92	932.56	461.66	629.31	+3.31
	B_9	-	-	-	-	N A	1362.34	990.41	831.43	1086.39	1067.33	1067.58	-3.61
	B_{10}	-	-	-	-	N A	1672.19	2220.14	2932.39	2977.44	1708.49	2302.13	+5.94
	Ave	379.08	444.88	610.08	740.85	742.91	1028.19	1237.84	1470.38	1535.66	1238.09	1128.25	+15.43
	Index	100.00	117.36	160.94	195.43	195.98	271.23	326.54	387.88	405.10	326.60		

Source : Compiled from Official Records of BTMC and Member Mills of BTMA; necessary calculations have been made.

Notes : i) '–' indicates the period before establishment and commencement of production, ii) NA= Not Available; iii) Labour productivity in terms of value of output = Value of Gross Output/ Labour Input; Gross value of output = Value of Total Production add changes in stocks to sales. iv) AAGR = Annual Average Growth Rate.

but it stopped down to 112.97 in 1992-93 and again fell notably to 106.99 in 1993-94. The index further increased during 1994-95 but considerably deteriorated later and it was at the bottom at 45.37 during 1996-97, the last year of the study.

But in the case of private sector, the increase in the average labour productivity from the year 1987-88 to 1995-96 was remarkably significant as the index rose from 100 to 405.10 during this period. Although the index fell down notably to 326.60 in 1996-97, it was more than two times higher than the corresponding figure of public sector. Considering individually, in no cases average value of out put per man-day was less than Tk 400, it was in the range Tk 400-500 in case of only one mill. However, the same was above Tk. 500 in the remaining nine mills. The maximum average labour productivity of Tk. 2302.13 was achieved by newly established mill B_{10}, followed by B_7, B_5, B_1 and B_9 of Tk 1876.50, Tk 1649.59, Tk 1207.15 and Tk 1067.58 respectively. AAGR also recorded relatively better position in private sector mills as against those in public sector mills. Positive AAGR was found in all the mills except one while it was negative in all the mills under public sector except two.

In Table-3.7, the data pertaining to labour productivity in terms of value added of the cotton textile mills under public and private sector are presented. Most important inference that can be drawn on perusal of the above table is that value added per man-day registered a fluctuating trend in case of all the mills under public sector, but during the later years from 1995-96 to 1996-97, it registered a falling trend when the labour productivity showed a substantial decline in all cases over 1987-88. The average labour productivity achieved during 1987-88 to 1996-97 was less than Tk 100 in three mills (A_5, A_7 and A_{10}), it was in the range Tk 100-150 in case of four mills (A_4, A_6, A_8 and A_9), while three mills such as A_1, A_2 and A_3 had it above Tk 150. The average labour productivity in the combined position of all the public mills recorded a fluctuating trend over

Table 3.7 : Labour Productivity in Terms of Value Added.

[Figure in Taka]

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average 1987-97	AAGR
PUBLIC SECTOR	A_1	203.78	164.63	241.55	216.78	263.32	190.36	152.27	158.44	64.64	3.27	165.90	-17.68
	A_2	227.68	278.44	246.91	215.59	233.79	153.28	194.51	188.42	74.48	25.46	183.86	-14.47
	A_3	118.00	173.35	218.01	154.88	198.41	206.18	158.06	138.08	124.51	31.28	152.08	-4.99
	A_4	92.42	154.93	144.88	123.50	171.37	135.11	138.90	177.06	162.82	50.62	135.16	+1.92
	A_5	99.67	157.15	122.25	102.00	137.75	115.20	73.47	92.43	63.76	13.97	97.77	-9.11
	A_6	88.65	136.31	183.37	146.73	205.61	156.02	116.90	165.93	63.16	33.57	129.63	-0.84
	A_7	87.42	36.03	100.41	99.36	134.85	82.88	61.43	78.93	61.83	30.58	77.37	+5.16
	A_8	139.85	128.69	135.65	119.15	147.11	119.89	96.83	129.43	89.01	24.41	113.00	-11.02
	A_9	172.09	212.05	178.03	135.95	154.16	122.39	116.47	119.07	70.68	15.37	129.63	-16.13
	A_{10}	89.49	137.13	183.38	84.79	46.56	89.91	110.44	140.71	11.81	4.82	89.90	-2.15
	Ave	131.91	157.87	175.44	139.87	169.29	137.12	121.93	138.85	78.67	23.34	127.43	-10.92
	Index	(100.00)	(119.68)	(133.00)	(106.03)	(128.34)	(103.95)	(92.43)	(105.26)	(59.64)	(17.69)		
PRIVATE SECTOR	B_1	126.83	162.38	156.44	152.74	160.36	306.67	566.40	489.09	290.65	624.60	303.62	+29.29
	B_2	131.27	119.01	118.75	49.80	101.51	108.61	133.13	189.22	189.27	181.43	132.20	+11.53
	B_3	227.34	354.73	360.43	215.16	345.84	475.49	496.71	636.43	591.44	492.38	419.60	+13.82
	B_4	155.48	181.82	157.10	174.31	143.18	175.94	183.70	196.72	176.69	283.13	182.81	+8.99
	B_5	-	-	N A	135.88	211.19	116.39	317.84	435.60	152.72	60.12	204.25	+15.85
	B_6	-	-	230.56	269.85	385.09	209.09	292.93	313.80	268.07	231.68	275.13	+4.73
	B_7	-	-	408.90	624.88	633.94	693.22	762.73	797.16	810.12	733.35	683.04	+10.04
	B_8	-	-	248.66	269.39	278.14	276.15	274.93	313.28	345.25	135.00	267.60	-3.76
	B_9	-	-	-	-	N A	603.04	477.81	342.98	386.79	357.47	433.62	-10.95
	B_{10}	-	-	-	-	N A	802.77	1270.06	1261.55	1028.66	635.14	999.64	+0.21
	Ave	160.23	204.49	240.12	236.50	282.41	376.74	477.62	497.58	423.97	373.43	390.15	+11.18
	Index	(100.00)	(127.62)	(149.86)	(147.60)	(176.25)	(235.12)	(298.08)	(310.54)	(264.60)	(233.06)		

Source : Compiled from Official Records of BTMC and Member Mills of BTMA.

Notes : i) '–' indicates the period before establishment and commencement of production, ii) NA= Not Available; iii) labour productivity in terms of value added = Gross value added/labour Input: Gross value added = Gross value of Output minus Total Material Input.

the study period and the year 1989-90 had the highest index of productivity at 133.00 while the year 1996-97 had the lowest at 17.69.

In the private sector, the efficiency as measured according to the labour productivity in terms of value added was far better in all the mills as compared to the public sector mills. The average value added per man-day during 1987-88 to 1996-97 was less than Tk 150 in Mill B_2 only and five mills such as B_1, B_4, B_5, B_6 and B_8 had the same in the range Tk 150-350. However, the rest of the mills namely B_3, B_7, B_9 and B_{10} achieved significant efficiency in value addition as their average productivity had Tk 419.60, 683.04, 433.62 and 999.64 respectively, much higher than that of others in the same sector as well as of their counterparts in public sector. The increase in average labour productivity in terms of value added in all the private sector mills considering together up to 1994-95 was remarkably significant, as the index went up to 310.54 in this year. And then in 1995-96 it stepped down to 264.60 and again to 233.06 in 1996-97 which was more than 13 times from the corresponding figure of public sector. Annual average growth rate had also similar situation as experienced in the earlier case.

3.2.3 Capital Productivity :

Capital productivity may be described as the arithmetical ratio between the amount produced and the amount of capital used in the course of production. It is thus expressed in terms of the following components:

a) $\dfrac{\text{Total Output}}{\text{Capital Input}}$

b) $\dfrac{\text{Value of Output}}{\text{Capital Input}}$

c) $\dfrac{\text{Gross Value Added}}{\text{Capital Input}}$

However, in our analysis capital productivity in terms of value of the output and gross value added have been worked out.

Capital Input:

Capital employed has been taken as capital input. Capital employed is used by different authorities in different ways. Here, we have adopted the net capital employed concept as the base meaning, thereby, the net block of fixed assets, capital work-in-progress, investments and the net current assets. The data about capital productivity have been presented in the following Tables:

Table-3.8 reveals that capital productivity in terms of value of out put in the mills under public sector also did not show any significant improvement on an overall basis in 1996-97 as the productivity decreased in many of the cases over the year 1987-88. Only in Mill-A_3, value of production per unit of capital almost doubled over Tk. 2.42 in 1987-88. In case of Mills-A_5 and A_6, the productivity was negative in 1987-88 due to negative capital employed; Mill-A_5 could be able to decrease it from Tk. (16.42) negative to Tk. (0.17) negative in 1996-97 while it turned from Tk. (3.71) negative in to Tk. 0.82 positive in 1996-97. In case of Mills-A_7, A8 and A_{10} capital productivity also turned into negative in 1996-97 due to negative capital employed. The average productivity over the study period was less than Tk 1.00 in four mills such as A_1, A_2, A_7 and A_9, while mill Mills-A_3, A_4, A_5 and A_8 had it in the range Tk 2.00 to 3.00. However, the worst productivity was recorded in Mills-A_6 and A_{10} as it was Tk. (1.09) negative and Tk. (0.09) negative over the period. The average capital productivity in terms of value of production of all the public sector mills taken together was negative during 1987-88, during 1990-91, 1991-92 and further during 1995-96 and 1996-97. Remarkable increase in average productivity during 1988-89 and 1989-90 was due to abnormally high productivity in Mill-A_5 resulting from very low capital employed during the said periods. The productivity was at the bottom at negative

Table 3.8 : Capital Productivity in Terms of Value of Output.

(Figure in Taka)

	Years / Mills	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average 1987-97	AAGR
PUBLIC SECTOR	A_1	0.46	0.41	0.44	0.42	0.46	0.40	0.38	0.37	0.42	0.37	0.41	-1.96
	A_2	0.91	0.91	0.83	0.76	0.79	0.73	0.82	0.69	0.83	0.40	0.77	-6.21
	A_3	2.42	3.15	2.95	2.97	2.64	2.20	2.85	0.88	2.88	4.68	2.76	+27.43
	A_4	7.38	3.18	1.19	1.28	1.42	1.38	0.80	1.21	1.46	0.92	2.02	-12.32
	A_5	(16.42)	53.27	40.20	(31.28)	(12.90)	(2.44)	(0.50)	(0.57)	(0.72)	(0.17)	2.85	-98.02
	A_6	(3.71)	1.37	0.67	0.92	1.05	1.26	1.88	(10.87)	(4.30)	0.82	(1.09)	-97.79
	A_7	3.41	0.97	0.87	1.21	1.82	3.15	1.05	1.95	(2.21)	(5.67)	0.66	+4.78
	A_8	1.28	3.32	4.06	5.08	7.47	25.54	5.96	4.39	(25.84)	(2.88)	2.84	-42.75
	A_9	0.47	0.53	0.47	0.59	0.98	4.65	0.47	0.70	0.68	0.37	0.99	+42.02
	A_{10}	0.48	0.88	1.13	2.07	(11.86)	(1.02)	1.36	1.93	4.37	(0.22)	(0.09)	-82.16
	Ave	(0.33)	6.80	5.28	(1.60)	(0.81)	3.59	1.51	0.07	(2.24)	(0.14)	1.21	-716.99
PRIVATE SECTOR	B_1	1.08	1.42	1.75	1.38	0.36	0.37	0.60	0.87	0.82	0.72	0.94	+5.74
	B_2	9.77	0.58	0.62	0.63	0.81	0.93	0.83	0.97	0.58	0.46	1.62	-10.77
	B_3	0.89	0.97	1.02	0.97	1.13	1.23	1.09	1.28	1.46	1.13	1.12	+3.56
	B_4	1.60	1.40	1.55	1.59	1.63	1.54	1.61	1.88	1.70	1.02	1.55	-3.39
	B_5	-	-	N A	0.83	0.84	1.03	1.29	2.22	2.58	0.69	1.35	+10.69
	B_6	-	-	0.22	0.50	0.62	0.54	0.79	0.95	0.96	1.04	0.70	+30.61
	B_7	-	-	0.47	0.85	0.73	1.07	0.76	0.93	0.66	0.81	0.79	+14.34
	B_8	-	-	0.53	0.58	0.68	0.78	0.63	1.54	1.14	1.10	0.87	+19.59
	B_9	-	-	-	-	N A	0.47	0.52	0.53	0.71	0.82	0.61	+15.50
	B_{10}	-	-	-	-	N A	0.54	0.58	0.35	0.27	0.23	0.39	-17.48
	Ave	3.34	1.09	0.88	0.92	0.85	0.85	0.87	1.15	1.09	0.80	0.99	-9.66

Source : Compiled from Official Records of BTMC and Member Mills of BTMA.

Notes : i) '–' indicates the period before establishment and commencement of production. ii) NA= Not Available iii) Figures in Brackets indicate negative productivity due to negative capital employed.

Tk. (2.24) in 1995-96. Annual average growth rate was negative in seven mills while three mills had positive growth rate.

On the other hand, capital productivity in terms of value of production increased in five mills under private sector while decreased in five mills during 1996-97 over 1987-88. In the intermediary period no clear trend was established as the productivity fluctuated in all the cases except B_9 in which the productivity exhibited a continuous upward trend during the five years period. In Mill-B_5 productivity showed an upward trend up to 1995-96 when it rose to Tk 2.58 over 0.83 in 1990-91, the first year of its commercial production, but the productivity stepped down to Tk. 0.69 in 1996-97. The productivity of capital also showed an upward trend over the period in Mill-B_6 except a slight decline in 1992-93. Its productivity was at the peak at Tk 1.04 while it was at Tk. 0.22 in 1989-90. On an average Mills-B_1, B_6, B_7, B_8, B_9 and B_{10} achieved value of out put in the range Tk. 0.39 to 0.94 per taka of capital employed while Mills-B_2, B_3, B_4 and B_5 achieved it in the range Tk 1.12 to 1.62. The average value of out put per unit of capital taking all the private mills together was only Tk. 0.80 in 1996-97 registering (76.05%) decrease over the year 1987-88.

The average capital productivity was highly positive in the private sector during 1987-88, 1990-91, 1991-92, 1995-96 and 1996-97 but the same happened to be highly negative in case of public sector during the years. Again during 1988-89, 1989-90, 1992-93 and 1993-94 the productivity was lower as compared to public sector. Thus it can be said that the capital resource was not utilised efficiently in the later years in private sector mills also. Annual average growth rate was negative in three mills while seven mills had positive growth rate.

The Table-3.9 exhibits the capital productivity performance of textile mills under public and private sector in terms of value added. The productivity fluctuated year by year in case of all the mills under public sector. It showed notable decrease on an overall basis in 1996-97 in all the cases except Mills-A_3

Table 3.9 : Capital Productivity in Terms of Value Added.

(Figure in Taka)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average 1987-97	AAGR
PUBLIC SECTOR	A_1	0.20	0.16	0.21	0.18	0.23	0.16	0.13	0.13	0.08	0.01	0.15	-12.44
	A_2	0.42	0.44	0.36	0.31	0.32	0.22	0.24	0.22	0.10	0.04	0.27	-18.79
	A_3	0.88	1.32	1.18	0.96	0.94	0.84	0.97	0.25	0.69	1.13	0.92	+21.01
	A_4	2.24	1.38	0.47	0.40	0.53	0.49	0.31	0.40	0.35	0.13	0.67	-19.70
	A_5	(5.29)	21.84	14.30	(9.47)	(4.21)	(0.80)	(0.16)	(0.15)	(0.12)	(0.02)	1.59	-115.52
	A_6	(1.10)	0.54	0.24	0.29	0.41	0.46	0.57	(3.56)	(0.76)	0.19	(0.29)	-116.29
	A_7	0.99	0.37	0.36	0.44	0.75	1.00	0.35	0.60	(0.44)	(0.84)	0.36	-1.70
	A_8	0.58	0.61	0.66	0.69	1.27	4.00	0.78	0.81	(2.98)	(0.13)	0.63	-35.92
	A_9	0.18	0.22	0.17	0.17	0.30	1.55	0.16	0.20	0.14	0.05	0.31	+37.07
	A_{10}	0.14	0.32	0.44	0.43	(1.68)	(0.24)	0.33	0.60	0.20	(0.03)	0.05	-83.33
	Ave	(0.08)	2.72	1.84	(0.56)	(0.11)	0.77	0.37	(0.05)	(0.27)	0.05	0.47	-487.46
PRIVATE SECTOR	B_1	0.39	0.54	0.54	0.54	0.11	0.09	0.16	0.23	0.14	0.15	0.29	+3.35
	B_2	3.53	0.19	0.19	0.10	0.23	0.24	0.22	0.30	0.18	0.15	0.53	-4.03
	B_3	0.46	0.57	0.55	0.31	0.54	0.69	0.64	0.69	0.61	0.49	0.56	+5.34
	B_4	0.69	0.64	0.65	0.68	0.64	0.54	0.52	0.51	0.39	0.46	0.57	-5.73
	B_5	-	-	N A	0.09	0.16	0.10	0.27	0.37	0.14	0.04	0.17	+18.95
	B_6	-	-	0.09	0.22	0.29	0.21	0.31	0.38	0.27	0.28	0.26	+27.66
	B_7	-	-	0.15	0.29	0.31	0.40	0.26	0.32	0.25	0.31	0.29	+17.07
	B_8	-	-	0.28	0.31	0.33	0.38	0.38	0.56	0.42	0.32	0.37	+4.41
	B_9	-	-	-	-	N A	0.21	0.25	0.22	0.25	0.27	0.24	+7.17
	B_{10}	-	-	-	-	N A	0.26	0.33	0.15	0.09	0.08	0.18	-19.68
	Ave	1.27	0.49	0.35	0.32	0.33	0.31	0.33	0.37	0.27	0.26	0.35	-12.63

Source : Compiled from Official Records of BTMC and Member Mills of BTMA.

Notes : i) '–' indicates the period before establishment and commencement of production, ii) NA= Not Available iii) Figures in Brackets indicate negative productivity due to negative capital employed.

and A_7 in which some improvement was observed over 1987-88. The average productivity over the period was in the range Tk. 0.00 to 0.50 in Mills-A_1, A_2, A_7, A_9 and A_{10}. It was achieved in the range Tk. 0.50-1.00 in Mills-A_3, A_4 and A_8. Mill-A_5 had the same of Tk. 1.59 per unit of capital employed while it was negative of Tk. (0.29) in case of Mill-A_6 due to negative capital employed. The public sector average capital productivity was Tk. (0.08) negative in 1987-88 followed by remarkable increase till 1989-90 resulting from abnormally high productivity in Mill-A_5 due to very low capital employed during these years. Since then capital productivity of the public sectors mills fluctuated up to 1995-96 and again rose at Tk. 0.05 in 1996-97 as against Tk. (0.08) negative in 1987-88. In private sector on an overall basis the capital productivity in terms of value added improved in Mills-B_3, B_6, B_7, B_8 and B_9 whereas it declined in Mills-B_1, B_2, B_4 and B_{10} during 1996-97 over 1987-88. The capital productivity during the period was in the range Tk. 0.00 to 0.50 in case of Mills-B_1, B_5, B_6, B_7, B_9 and B_{10} while it was in the range Tk. 0.50 to 0.60 in case of Mills-B_2, B_3 and B_9. The private sector average of capital productivity declined to Tk. 0.26 in 1996-97 as compared to Tk. 1.27 in 1987-88. The maximum productivity was recorded in 1987-88 and the minimum was recorded at Tk. 0.26 in 1996-97. Annual average growth rate was negative in three private sector mills as against eight public sector mills.

3.3 GRAPHICAL HIGHLIGHTS

Fig. 3.1 : Production Trend of Cotton Textile Industry

(Source : Table-3.2)

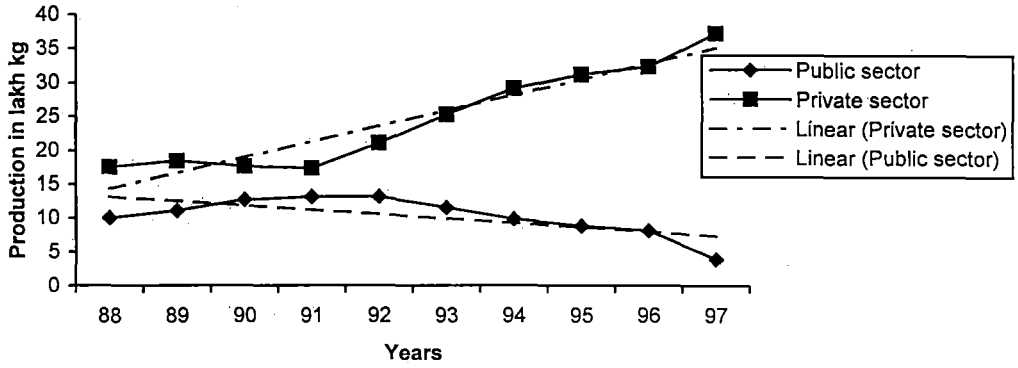


Fig. 3.2 : Capacity Utilisation

(Source : Table-3.4)

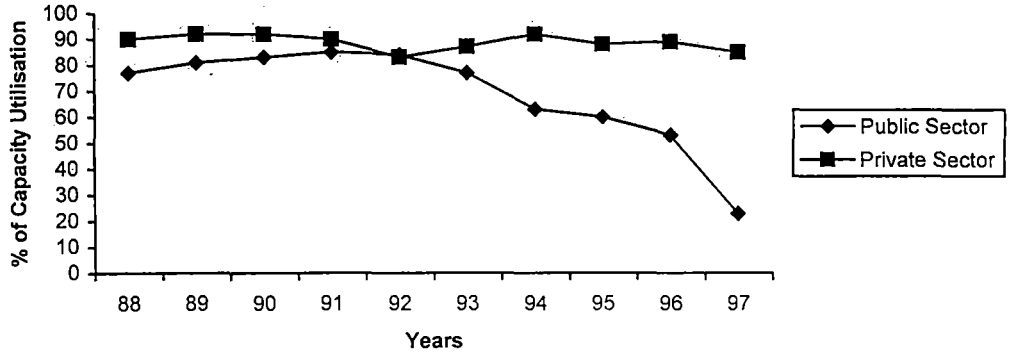
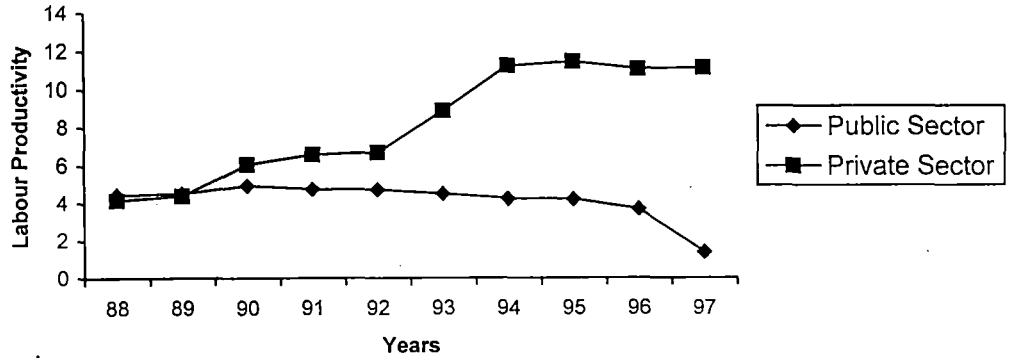


Fig. 3.3 : Labour Productivity in Terms of Production

(Source : Table-3.5)



3.4 MEAN AND 't' VALUES OF THE PERFORMANCE INDICATORS AND STATISTICAL SIGNIFICANCE OF MEAN DIFFERENCES

Comparison of mean Value of performance indicators was aimed at finding out the differences in performance of the textile mills under public and private sector. To measure the statistical significance of the differences between the mean values of the indicators used for analysing production and productivity of the public and private sector textile mills and thus, to test the individual discriminating power of the indicators between the performance of the public and private sector mills, t-values of the indicators have been computed.

The mean values of the indicators for public and private sector along with their actual values, their mean differences, standard deviations and t- values are presented in Table-3.10.

We found from Table-3.10 that the mean differences of six indicators out of eight are significant at 0.05 level of significance. The indicators are given below:

P_1 = Average production

P_2 = Per Spindle per shift production

P_3 = Capacity utilisation

P_4 = Labour productivity (production)

P_5 = Labour productivity (value of production)

P_6 = Labour productivity (value added)

The t-values of the mean differences of the indicators are greater than the table value of t (2.101) at 0.05 level of significance. But the mean differences of capital productivity in terms of value of output (P_7) and value added (P_8) are not significant at 0.05 level of significance.

Table-3.10 : Mean and 't' values of the Performance Indicators for Public and Private Sector : 1987-88 to 1996-97.

	Table No. / Years & Parameters	P_1 3.2	P_2 3.3	P_3 3.4	P_4 3.5	P_5 3.6	P_6 3.7	P_7 3.8	P_8 3.9
PUBLIC SECTOR	1987-88	10.01	75.33	77	4.44	357.00	131.91	(0.33)	(0.08)
	1988-89	11.08	74.46	81	4.52	380.94	157.87	6.80	2.72
	1989-90	12.70	75.55	82	4.93	439.87	175.44	5.28	1.84
	1990-91	13.15	76.54	85	4.75	425.10	139.87	(1.60)	(0.56)
	1991-92	13.14	76.30	84	4.72	463.46	169.29	(0.81)	(0.11)
	1992-93	11.54	75.57	77	4.50	403.29	137.12	3.59	0.77
	1993-94	9.87	77.16	63	4.25	381.97	121.93	1.51	0.37
	1994-95	8.85	76.23	60	4.20	445.80	138.85	0.07	(0.05)
	1995-96	8.14	73.54	53	3.68	423.84	78.67	(2.24)	(0.27)
	1996-97	3.90	71.43	23.	1.40	161.97	23.34	(0.14)	0.05
	X_1	10.239	75.211	68.600	4.139	388.324	127.429	1.213	0.468
	SD_1	2.829	1.689	19.540	1.023	86.123	45.491	3.035	1.039
	V_1	8.005	2.855	381.822	1.047	7417.329	2069.496	9.215	1.081
PRIVATE SECTOR	1987-88	17.53	80.49	90	4.15	379.08	160.23	3.34	1.27
	1988-89	18.41	76.63	92	4.40	444.88	204.49	1.09	0.49
	1989-90	17.62	83.06	92	6.06	610.08	240.12	0.88	0.35
	1990-91	17.33	71.54	90	6.56	740.85	236.50	0.92	0.32
	1991-92	21.05	76.20	83	6.67	742.91	282.41	0.85	0.33
	1992-93	25.30	89.51	87	8.87	1028.19	376.74	0.85	0.31
	1993-94	29.20	94.93	92	11.23	1237.84	477.62	0.87	0.33
	1994-95	31.25	94.61	88	11.45	1470.38	497.58	1.15	0.37
	1995-96	32.37	94.68	89	11.06	1535.66	423.97	1.09	0.27
	1996-97	37.32	106.82	85	11.14	1238.09	373.43	0.80	0.26
	X_2	24.738	86.847	88.800	8.159	942.796	327.309	1.184	0.430
	SD_2	7.381	11.054	3.084	2.933	417.66	118.492	0.767	0.301
	V_2	54.481	122.196	9.511	8.605	174278.539	14040.393	0.588	0.091
t-values		5.800*	3.290*	3.324*	4.091*	4.113*	4.979*	0.029	0.110

Notes : i) P = Performance indicator

ii) * denotes significant at 0.05 level of significance

3.5 SUMMING UP

The present analysis leads us to conclude that the trend in average production during the first half of the study period was towards increase in both the sectors. But during the second half, the average production of all the mills taken together registered a continuous decreasing trend in public sector while the tempo of increasing production activity was maintained in all the private sector mills during this period. The production not only went down in the public mills, the rate of decrease was between 30% to 60% in as many as ten mills. In contrast, a remarkable increase i.e. between 80% to 200% was in four private mills while it was generally 25% to 50%. Idle capacity and stock piling resulting from availability of foreign yarn at comparatively lower price were the main reasons for poor production performance as stated by the managers of public mills. As regards production efficiency, the average per spindle per shift production in all the public mills taken together generated a falling trend during 1992 to 1997 while the same in all the private mills taken together registered a rising trend which indicates better efficiency of private mills in their production activities during this period although there was no significant difference between the two sectors in this regard during 1987-88 to 1991-92.

After analysing capacity utilisation, we also found that the average capacity utilisation rate of all the private sector mills was much higher compared of public sector mills during all the years understudy. In more than half of the mills under public and private sector, power failure contributed most to spindle stoppage in most of the years. Absenteeism of workers was another major factor in case of all public mills as well as in some private mills. However, production efficiency in terms of wastage could not be analysed in this connection due to non-availability of data from private sector mills.

From a further look into productivity, it can be inferred that like other criteria of performance, productivity in terms of production, value of production

and value added in the mills under private sector were higher than those of public mills during the study period. The average labour productivity in all the terms in the private sector generated a rising trend throughout the period with a few sudden break, while a reverse trend was generated in public sector during the second half of the period. As a result, the average labour productivity in terms of production in all the private mills for the entire period was more than double and in terms of value of production and value added it was almost three times higher than the corresponding figures in public sector. Regarding capital productivity in terms of value of output and value added there was no significant differences between the two sectors which indicates capital resources was not utilised efficiently in the mills under both the sector.

The reasons for low labour productivity in public sector compared of private sector were mainly higher man hour loss caused by higher idle capacity, over manning and higher rate of material wastage. Man-hour loss caused production loss and hence productivity came down. Steps should be taken to minimise man-hour loss and production loss through proper utilisation of capacity, pulling down the labour force at optimum level and through minimising wastage rate by ensuring trained and experienced workers and supervisors and regular supply of good quality of raw cotton.

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4

COST OF PRODUCTION AND SALES PERFORMANCE

4.0 INTRODUCTION

An important factor that affects the performance of manufacturing concerns is the cost trend. Cost of production affects the price of output and reflects the degree of operational efficiency and productivity in use of various factors of production of an enterprise. Not only the operational performance are reflected with this figure rather the financial performance of the enterprise fully depends on it. Hence, it is an indicator of both operational and financial performance of an enterprise.

With a view to find out the actual reasons for poor performance of public sector cotton textile mills as compared to the mills under to private sector, an attempt has been made to analyse the structure of cost of production of the mills of BTMC and BTMA as per the objectives stated in the Chapter–1. The structure of cost of production of textile mills takes into account only those elements of costs, which are essential for production of yarn.

There are other expenses viz. administrative expenses which are related to administration of the office and selling and distribution expenses which are related to selling procedures of the products. "Though only the production of goods is not the end rather a means, and production of goods can not be completed if without the function of office and selling department, yet it can not be ignored in any way that production department works as a 'pivotal point' in any manufacturing organization"[1]. However, our study has kept itself restricted to analysis the cost of production only, other than the costs which are not directly related to production of yarn.

4.1 ANALYSIS OF COST OF PRODUCTION OF COTTON TEXTILE MILLS UNDER PUBLIC AND PRIVATE SECTOR

Saha S. K[2]. in his study analysed the structure of cost of production of BTMC spinning mills. Following the techniques applied by him we have tried to

make a comparative analysis of cost of production between the cotton textile mills under public and private sector in order to understand the trend of different costs, the significance of them in the total cost of production and to compare the same among the mills under both the sectors. The total cost of production may be broadly classified into raw materials cost and conversion cost. Conversion cost is subdivided into wages and salary cost and factory overhead. The main elements of factory overhead are power and fuel costs, stores and spares expenses, deprecation, insurance etc. However, our discussions and analysis have been made showing the trend of cost of the cotton textile mills under public and private sector under the following heads:

1. *Material costs,*
2. *Conversion costs,*
3. *Wages and salary costs,*
4. *Power and fuel costs,*
5. *Expenditure on stores and spares,*
6. *Depreciation cost,*
7. *Cost of production per unit of output.*

4.1.1 Trend of Material Costs and its Analysis :

Trend of Material costs

It is apparent from Appendix-2, that the material cost in all the mills under public sector increased up to 1991-92 with a few exceptions in 1988-89, 1990-91 and in 1991-92. These might be due to decrease in production. Material cost in the public mills started increasing again from 1994-95. Only a few mills provided an exception to this upward trend (viz., Mills-A_1, A_2, A_6 and A_{10}). But during 1996-97, the material cost in all the mills decreased again which was probably due to decreases in their production.

In the private sector, an increasing material cost was witnessed during the years from 1987-88 to 1995-96. Only a few mills provided an exception to this upward trend. In 1996-97, the last year of the study period, an increase in material cost was observed in case of Mills-B_1, B_7, B_9 and B_{10}, whereas the cost in Mills-B_2, B_3, B_4, B_5 and B_6 decreased in the same year, possibly because of decrease in their production.

The major idea, which could be formed from the Appendix–2, that the cost of material of the mills under both the sectors increased gradually. This increase in the cost of material contributed to the increase in the total cost of production. This increase was due to the increase in the price level of raw cotton and also in the volume of production.

It appears from the Table 4.1 that the relative share of material cost to the total cost of production of public sector Mills-A_3, A_4, A_5 and A_8 changed as their material cost changed during the study period. But the relative share of material cost to the total cost of production in Mill-A_6 during 1989-90 and 1990-91, in Mill-A_7 during 1988-89 and 1989-90, in Mill-A_9 during 1988-89, 1989-90 and 1991-92, in Mill-A_{10} during 1988-89, 1990-91, 1992-93 and 1993-94 decreased though their material cost increased during the said years. The above changes in all the mills resulted in the change of the average relative share of material cost to the total cost of production in all the public mills as a whole in the same direction as their material cost changed during the study period. On the other hand, in the private sector, it appears that the relative share of material cost to the total cost of production in Mills-B_2, B_4 and B_8 changed as their material cost changed all through the period. But the relative share of material cost to the total cost of production in Mill-B_1 during 1988-89 and 1994-95; in Mill-B_3 during 1988-89 and 1990-91; in Mill-B_6 during 1990-91, 1991-92, 1993-94 and 1994-95; in Mill-B_7 during 1991-92 and 1995-96;in Mill-B_9 during 1995-96 and 1996-97 and relative share in Mill-B_{10} during 1993-94 decreased although their material cost

Table – 4.1: Relative Share of Material Cost in the Total Cost of Production (in percentage).

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average
PUBLIC SECTOR	A_1	54.07	37.10	52.64	54.18	53.44	48.19	46.96	53.72	55.79	52.40	50.85
	A_2	57.20	58.32	57.77	56.06	58.79	55.49	57.37	56.97	65.39	44.55	56.79
	A_3	55.54	55.85	56.91	60.44	62.86	56.96	52.50	56.08	61.59	31.30	55.00
	A_4	62.10	58.78	58.13	58.95	60.64	52.23	42.50	58.48	65.54	50.55	56.79
	A_5	42.29	53.90	54.46	57.52	60.01	48.77	42.06	56.48	59.86	34.23	50.96
	A_6	58.99	57.63	55.13	52.21	53.12	47.90	46.09	52.19	48.98	24.65	49.69
	A_7	58.21	57.93	55.75	56.50	58.61	56.16	45.11	56.32	64.42	56.07	56.51
	A_8	46.78	49.99	52.42	52.87	53.58	47.58	44.36	54.61	59.88	26.54	48.86
	A_9	57.53	55.92	53.01	54.85	53.87	41.72	40.37	47.06	48.65	25.97	47.90
	A_{10}	47.31	46.27	49.53	49.70	51.98	49.75	47.45	46.88	40.83	10.76	44.05
	Ave	54.00	53.17	54.58	55.33	56.69	50.48	46.48	53.88	57.09	35.70	51.74
PRIVATE SECTOR	B_1	57.39	56.25	62.10	57.67	67.16	73.73	76.06	73.19	72.04	74.21	66.98
	B_2	48.53	48.53	48.53	43.84	64.42	64.57	60.19	67.01	70.33	69.59	58.55
	B_3	54.48	50.63	54.95	54.31	57.70	53.44	48.62	57.72	65.70	63.59	56.11
	B_4	61.90	56.70	28.17	56.98	57.81	60.14	63.72	70.74	74.58	47.48	57.82
	B_5	-	-	NA	85.04	87.30	84.36	79.56	85.37	84.57	85.42	84.52
	B_6	-	-	70.06	59.55	56.36	61.46	60.27	59.67	65.44	74.90	63.46
	B_7	-	-	57.74	65.65	62.97	68.82	71.22	74.91	68.09	69.25	67.33
	B_8	-	-	56.85	56.85	56.85	59.71	59.89	65.03	65.68	69.55	61.30
	B_9	-	-	-	-	NA	55.97	60.22	72.23	71.03	68.37	65.56
	B_{10}	-	-	-	-	NA	65.99	62.61	70.40	75.52	69.68	68.84
	Ave	55.58	53.03	54.06	59.99	63.82	64.82	64.24	69.63	71.30	69.20	62.57

Source: Compiled from Annual Reports of BTMC and Member Mills of BTMA, necessary calculations have been made.

Notes: i) '—' Indicates the period before establishment and commencement of production.
ii) NA = Not Available.

increased gradually during these years. On an average the relative share of material cost to the total of production in all the private textile mills taken together decreased in 1988-89 and 1993-94 with the corresponding increase in their total material cost. This might be due to some uneven increase in other elements of cost which increased the total cost of production and due to both total production and productivity of raw cotton increased during the said periods.

We also observed from the above table that the average share of material cost to the total cost of production in all the mills under public sector as a whole was 51.74% during the period under study. Average percentage of material cost in Mills-A_{10}, A_9. A_8, A_6, A_1 and A_5 was lower than the combined average and it was higher than the combined average in Mills-A_7, A_4, A_2 and A_3. While on the other hand, this share of material cost to the total cost of production in all the private mills, as a whole was 62.57% during the period. Mills-B_2, B_3, B_4 and B_8 formed lower percentage of material cost than the combined average and Mills-B_1, B_5, B_6, B_7, B_9 and B_{10} formed higher percentage of cost than the combined average. The lower share of material cost in some public mills indicates the use of inferior raw material and production of low-quality yarns. The use of inferior raw materials might be resulted in lower productivity, higher wastage and higher loss of value thus resulting in higher cost of production.

Analysis of Material Cost :

Material cost should proportionately vary with the volume of production having per unit material cost remaining the same as it is directly related to production.

The Table-4.2 shows that the percentage of increase or decrease in average material cost in the textile mills under public sector was not in line with the percentage of increase or decrease in their average volume of production.

Table-4.2 :Changes in Material Cost and Corresponding Changes in Production

Sector	Items	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	Average material costs in lakh Tk.	399.27	386.19	538.69	625.26	662.55	575.15	480.13	542.85	665.61	318.93
	% of increase/decrease in average material cost over the previous year	NA	(03.28)	39.49	16.07	5.96	(13.19)	(16.52)	13.06	22.61	(52.08)
	Average volume of production in 32s count in lakh Kg	10.02	11.08	12.70	13.15	13.14	11.54	9.87	8.85	8.14	3.90
	%of increase/decrease in average volume of production over the previous year.	NA	10.58	14.62	03.54	(00.08)	(12.18)	(14.47)	(10.33)	(08.02)	(52.09)
PRIVATE SECTOR	Average material cost in lakh Tk.	680.78	745.05	692.89	904.67	1120.94	1384.65	1603.36	2323.13	2702.39	2529.17
	% of increase/decrease in average material cost over the previous year	NA	09.44	(07.00)	30.56	23.91	23.53	15.80	44.89	16.33	(06.10)
	Average volume of production in 32s count in lakh Kg.	17.53	18.41	17.62	17.33	21.05	25.30	29.20	31.25	32.37	37.32
	%of increase/decrease in average volume of production over the previous year.	NA	05.02	(04.29)	(01.65)	21.47	20.19	15.42	07.02	03.58	15.29

Notes : i) NA=Not Applicable. ii) Brackets indicate negative changes.

Percentage of increase in volume of production was 14.62 in 1989-90 and in 1990-91 it was 3.54 over the previous year, whereas the percentages of increases in average material cost were 39.49 in 1989-90 and 16.07 in 1990-91 becoming much higher than the changes in production. Again the percentages of decrease in average volume of production in 1992-93 was (12.18) and in 1993-94 it was (14.47), whereas the percentages of decrease in average material cost was Tk. (13.19) in 1992-93 and (16.52) in 1993-94, be coming somewhat higher than the rate of changes in production. But during 1988-89, 1991-92, 1994-95 and in 1995-96 the fact was somewhat different. Because in 1988-89, the percentage of

increase in volume of production was 10.58 as against a decrease of (03.28%) in material cost. Again the percentage of decrease in production was (00.08%) 1991-92, (10.33) in 1994-95 and (0.8.02) in 1995-96 as against a higher increase in material cost in these particular years, 1996-97 was the only year when the percentage of decrease in average material cost of all the mills under public sector was (52.08), almost same with the corresponding decrease in their average production. In private sector, the percentage of increase or decrease in average material cost was in the same line with the corresponding increase or decrease in average production of the textile mills under this sector almost all the years under study. A consistent increase in material cost with the corresponding increase in production was shown during 1991-92, 1992-93 and 1993-94. Only in 1988-89 and 1994-95 the percentage of increase in material cost was much higher than the increase in production. Moreover, in 1989-90 material cost decreased in high rate than the corresponding decrease in production. Even in 1996-97 material cost decreased by (06.10%), in the opposite direction of increase in production by 15.29%. The above analysis indicates a better efficiency in material management of private sector mills as compared to the mills under public sector.

Material Cost Per Kg of Yarn:

A study of the figures arranged in Table-4.3 reveals, that the average material cost in all the mills under public sector as a whole was Tk. 52.62 per kg of yarn during the study period. The cost registered an increasing trend and reached at the peak of Tk. 83.49 in 1996-97 from Tk. 40.18 in 1987-88 with a sudden break in 1988-89 and 1992-93. Individually, in case of all the mills the material cost per unit increased through out the period of study except in two or three years, and thus registered an increasing trend. Mill-A_8 recorded the lowest average material cost of Tk. 46.32 per kg followed by Mills-A_3, A_2, A_1 and A_6 respectively. But its cost varied in a range of 46.67, higher than that of Mills-A_3 and A_6 and also that of combined position. In Mill-A_5 the average material cost

Table 4.3:Material Cost Per Kg of Yarn (Output) in Taka.

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	Range
PUBLIC SECTOR	A_1	42.81	20.35	44.88	48.90	48.81	48.68	56.86	60.84	78.59	82.24	53.30	61.89
	A_2	33.27	35.17	38.98	40.52	46.67	46.31	50.09	57.33	83.86	90.06	52.23	56.79
	A_3	39.76	36.71	38.35	45.50	49.90	42.85	43.57	64.56	77.35	70.24	50.88	40.64
	A_4	44.54	39.10	44.91	51.67	54.19	47.76	48.21	63.06	82.93	76.56	55.29	43.82
	A_5	34.20	44.11	49.22	52.75	61.13	52.93	59.03	71.95	96.60	81.05	60.30	62.40
	A_6	46.61	43.65	45.52	47.48	48.93	44.83	51.45	62.37	82.42	72.45	54.57	38.77
	A_7	44.57	36.66	41.36	46.45	50.26	68.13	45.24	63.85	86.69	83.01	56.62	50.03
	A_8	27.54	31.05	36.79	41.42	41.57	39.09	40.94	56.59	74.00	74.21	46.32	46.67
	A_9	43.68	43.95	52.77	52.99	56.82	44.95	43.10	61.49	77.41	95.66	57.91	52.56
	A_{10}	44.82	38.79	42.11	53.36	57.11	49.59	51.94	58.33	82.29	109.37	58.77	70.58
	Ave	40.18	36.96	43.49	48.73	51.54	48.51	49.04	62.04	82.21	83.49	54.62	46.53
PRIVATE SECTOR	B_1	62.82	61.63	74.10	70.85	124.29	188.48	99.93	84.70	99.33	83.24	94.94	126.85
	B_2	30.31	32.20	33.45	38.04	47.00	48.53	41.32	49.32	54.90	55.60	43.07	25.29
	B_3	41.15	40.77	50.54	59.83	72.08	60.72	55.35	74.66	102.42	96.93	65.45	61.65
	B_4	36.78	38.09	18.00	36.51	38.56	41.35	48.29	73.05	84.32	45.42	46.04	66.32
	B_5	-	-	NA	78.16	77.65	69.38	62.03	84.06	99.66	99.02	81.42	37.63
	B_6	-	-	45.95	43.06	39.89	44.75	42.63	49.00	70.52	72.04	50.98	32.15
	B_7	-	-	48.60	70.41	51.83	57.32	61.28	85.25	79.10	82.14	66.99	36.65
	B_8	-	-	53.92	51.94	57.36	68.66	61.57	76.10	86.65	83.55	67.47	34.71
	B_9	-	-	-	-	NA	67.90	42.82	66.96	59.46	25.44	52.52	42.46
	B_{10}	-	-	-	-	NA	43.97	42.41	69.83	111.19	80.93	69.67	68.78
	Ave	42.77	43.17	46.37	56.10	63.58	69.11	55.76	71.29	84.76	72.43	63.86	41.99

Notes : i) '–' indicates the period before establishment and commencement of production,

ii) NA= Not Available.

per kg of yarn during the period of study was Tk. 60.30 which was the highest in comparing to all the other mills under public sector as well as the combined position of all the mills. Its cost varied in a range of 62.40 from Tk. 34.20 to Tk. 96.60 which was the highest in comparison to the ranges of all other mills. Next to Mill-A_5, the average material cost per kg of yarn was Tk. 58.77 in Mill-A_{10}, Tk. 57.91 in Mill-A_9, Tk. 56.62 in Mill-A_7 and Tk. 55.29 in Mill-A_4. Their range of variation was 70.58, 52.56, 50.03 and 43.82 respectively.

On the other hand, although the material cost per kg of yarn in the mills under private sector fluctuated occasionally, their overall trends were towards an increasing one. The average unit cost in Mill-B_1 was the highest varied in a range of 126.85 which was also the highest in comparison to that of other private sector mills. In Mill-B_2, the average material cost per kg of yarn was the lowest than the cost in all other mills. The cost per kg varied from Tk. 30.31 in 1987-88 to Tk. 55.60 in 1996-97 forming a range of 25.29, the lowest among the range of other mills indicating that the variation in cost was the least in comparison to other mills. In case of Mills-B_4, B_6 and B_9 the average material cost per kg of yarn were Tk. 46.04, Tk. 50.98 and Tk. 52.52 respectively, gradually higher than that of Mill-B_2 but lower than the combine position of all mills under the sector. The cost in Mill-B_6 varied from Tk. 39.89 in 1991-92 to Tk. 72.04 in 1996-97, constituting a range of 32.15 which was lower than that in Mills-B_4 and B_9. The average unit cost in Mills-B_3, B_7, B_8, B_{10} and B_5 were Tk. 65.45, Tk. 66.99, Tk. 67.47, Tk. 69.67 and Tk. 81.42 respectively higher than the combined average position of Tk. 63.86. The cost in Mills-B_8, B_7 and B_5 varied in a range of 34.71, 36.65 and 37.63, higher than the range of Mills-B_{10} and B_3 and also than the combined range. The average material cost per kg of yarn in all the private mills taken together was Tk. 63.86 during the period of study constituting a range of 41.99 covering its variation. This combined average cost of private sector was higher than that of public sector but its range of variation was lower indicating a steady trend as compared to that of public sector. Therefore, it may be concluded that the per unit

material cost in the selected mills under both the sector was not constant during the period of study, rather it increased year by year with a few exceptions. This might be due to (i) increase in price of raw cotton, which is fully an external factor and (ii) due to decrease in productivity of material, which is surely an internal factor and thereby controllable factor. If the price of material i.e., raw cotton could be analysed, it would have been possible to find out the external factor responsible for this increase. But as the information regarding prices was not available, this could not be done.

4.1.2 Conversion Cost and Its Analysis:

Conversion cost means those expenses, which are required to convert raw material into finished goods. In no other way materials can converted into finished goods without the help of man and machine, the monetary term of which is known as conversion cost. Thus, two related expenses i.e., wage and salaries and factory overhead come under this head. The following Table-4.4 is presented to compare the conversion cost in the sample cotton textile mills under public and private sector.

From the perusal of the Table-4.4, it is quite evident that both the average conversion cost and its percentage to the total cost of production in the mills under public sector exhibited an upward trend up to 1989-90 but fluctuated thereafter and during 1990-91, 1993-94, 1995-96 and 1996-97 they changed in the opposite direction of each other i.e., the average conversion cost increased but its relative share in total cost of production decreased in 1990-91 and 1995-96 and vise-versa in 1993-94 and 1996-97. The average conversion cost per kg of yarn in the public sector mills registered an increasing trend during the period of study. But the average conversion cost per unit in the private sector mills did not show any specific trend. Rather it fluctuated in a range from Tk. 30.85 in 1993.94 being the

Table-4.4 : Conversion Cost, Its Relative Share to Total Cost of Production and Cost per kg of Output.

Sector	Items	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	Average conversion cost in lakh Tk.	340.12	354.69	450.91	507.18	505.90	541.23	531.02	465.14	477.08	438.67
	Conversion cost as percentage of total cost of production	46.00	46.83	45.43	44.67	43.31	49.53	53.05	46.12	42.67	64.30
	Average conversion cost per Kg of output in Tk.	34.49	32.33	36.44	39.68	39.67	47.90	57.02	53.54	64.13	224.35
PRIVATE SECTOR	Average conversion cost in lakh Tk.	515.39	646.95	673.57	626.51	701.79	781.81	857.31	972.88	1134.90	1225.92
	Conversion cost as percentage of total cost of production	44.43	46.98	45.94	40.13	36.18	35.18	35.76	30.37	28.70	30.79
	Average conversion cost per kg of output in Tk.	33.96	37.74	37.73	37.24	35.49	36.34	30.85	31.23	34.25	32.01

Sources: i) Appendix-3;

ii) Annual Reports of BTMC and Member Mills of BTMA; necessary calculations have been made.

lowest and Tk. 37.74 in 1988-89, being the highest. The average conversion cost in the private sector mills in absolute amount increased continuously throughout the period except in 1990-91 due to initial year of operation of Mill-B_5; but as a share of the total cost of production it was decreasing from 1989-90 and came

down to Tk. 35.18 in 1992-93, it increased slight in 1993-94 and again came down to Tk. 28.70 in 1996-97 and further went up to Tk. 30.79 in 1996-97.

4.1.3 Trend of Wages and Salary Cost and Its Analysis:

The cost of wages and salaries occupies the second highest position in the cost structure of the textile mills. As productivity of material depends on the performance of labour to a great extent, this element needs greater control and attention. It should be noted that total cost of production would include total wages of labourers and that portion of the salary expenses, which constitute a part of the overhead. But all wages and salary expenses are included by all sample mills in finding out cost of goods sold. Though the breakup of total employees are given as per officer, staff and workers, the breakup of salary and wages expenses were not available. As such the total of wages and salary expenses are taken here as an element of cost of production.

As it is clear from Appendix-4, that there was a constant increase in wages and salary cost up to 1992-93 in case of every mills under the public sector. Although the cost decreased in some mills during 1993-94, 1994-95, and 1996-97 an overall increase in cost was observed since 1992-93 in all the public mills. The public sector average amount of wages and salary cost in all the mills taken together went up to Tk. 285.61 lakh in 1996-97 showing 179% increase over 1987-88.

In the private sector though the wages and salary cost, in case of some mills fluctuated since 1990-91, the over all trends in all the mills were towards increase. The average amount spent on wages and salary in all the mills as a whole was Tk. 263.87 lakh in 1987-88 but it went up to Tk. 328.04 lakh showing an increase of 124.32% over the decade under study, which was 54.68% lower than that of the public sector. Therefore, it may be concluded that the average wages

and salary cost in the textile mills under private sector recorded a steady trend in comparison to that of public sector.

From a perusal of the Table-4.5, it can be inferred that the wages and salary cost in the mills under public sector also increased in the relative sense i.e., as a share of the total cost of production during the ten years of study as it increased in absolute amount. The cost constituted a major share of the total cost of production in 1996-97, the last year of the study period in case of all the mills except Mill-A_7, rising their relative share by 11% in Mill-A_3, being the lowest and 277% in case of Mill-A_{10}, being the highest over the year 1987-88. The relative share of this element to the total cost of production increased in 1996-97 over the year 1987-88 for all the mills except Mill-A_7 in which the share in 1996-97 was lower than that of 1987-88. Taking into consideration the average relative share of wages and salary cost to the total cost of production in all the public mills taken together was 44.39% in 1996-97 showing an increase of 98.61% over the year 1987-88. Mills-A_1, A_2, A_7 and A_9 had average wages and salary cost forming less than 25% of total cost, Mills-A_3, A_4, A_6 and A_{10} had the cost constituting more than 25% of the same and Mills-A_5 and A_8 had more than 30% of the same.

But in the private sector, the situation was reverse to that in public sector. Although a minor fluctuation was observed in the relative share of wages and salary cost during the period of study but the overall trend was towards decrease in case of all the mills other than Mills-B_5, B_8, B_9 and B_{10} in which the share increased by insignificant percentage. The average relative share of this element was lower in 1996-97 as compared to the year 1987-88 in all the mills except Mills-B_5, B_8 and B_9 in which this was slight higher. The combined position of all the mills under private sector taken together in the relative share of wages and salary cost to the total cost of production was 9.60% showing (55.56%) decrease over 1987-88. Mills-B_5, B_7, B_8, B_9 and B_{10} had an average cost forming less than 10% of total cost, Mills-B_1, B_3 and B_6 had the cost constituting more than 10% while only Mills-B_2 and B_4 had more than 20%.

Table – 4.5: Relative Share of Wages and Salary Cost in Total Cost of Production.

(in percentage)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average
PUBLIC SECTOR	A_1	19.07	26.33	21.11	20.64	23.90	27.19	27.96	26.52	19.47	27.82	24.00
	A_2	18.07	18.78	20.69	21.64	21.78	25.37	23.03	24.99	21.31	40.28	23.59
	A_3	23.61	21.49	22.26	20.95	20.83	25.68	28.36	28.15	26.16	56.19	27.37
	A_4	23.58	26.04	25.82	24.47	23.70	29.54	39.69	26.43	22.76	31.92	27.40
	A_5	29.69	27.44	31.16	29.11	28.10	36.62	48.27	32.97	29.49	55.28	34.51
	A_6	27.02	27.51	28.54	21.37	21.76	26.14	27.77	25.57	30.06	45.02	28.08
	A_7	27.63	27.38	18.86	16.95	16.45	18.97	26.84	21.02	18.07	23.45	21.56
	A_8	25.72	24.57	25.22	25.07	26.17	31.96	35.78	30.05	27.54	58.19	31.03
	A_9	12.56	13.94	16.13	16.36	17.22	23.24	27.29	25.93	27.28	43.39	22.33
	A_{10}	16.52	16.98	17.27	17.61	19.27	20.32	25.94	28.32	34.44	62.36	25.90
	Ave.	22.35	23.05	22.71	21.42	21.92	26.50	31.09	27.00	25.66	44.39	26.61
PRIVATE SECTOR	B_1	21.32	17.57	18.25	23.87	18.85	11.48	9.09	5.55	5.55	5.07	13.66
	B_2	23.52	23.52	23.52	23.52	23.52	23.10	27.01	19.62	17.05	17.91	22.23
	B_3	17.39	14.99	16.35	14.22	13.15	15.55	15.23	12.16	10.44	10.57	14.01
	B_4	24.18	26.77	26.20	23.94	23.03	19.39	38.74	15.63	12.30	19.02	22.92
	B_5	-	-	NA	4.33	6.04	7.12	5.10	3.42	3.56	4.34	4.84
	B_6	-	-	13.12	12.73	12.45	11.11	11.88	9.57	8.83	12.56	11.53
	B_7	-	-	6.82	3.58	3.95	6.24	6.34	5.99	6.12	6.29	5.67
	B_8	-	-	7.15	9.57	8.95	8.44	8.45	6.98	7.41	7.41	8.05
	B_9	-	-	-	-	NA	6.21	9.15	7.79	7.20	7.51	7.57
	B_{10}	-	-	-	-	NA	5.06	5.41	3.96	3.57	5.27	4.65
	Ave.	21.60	20.71	15.92	14.47	13.74	11.37	13.64	9.07	8.20	9.60	13.83

Source: Compiled from Annual Reports of BTMC and Member Mills of BTMA, necessary calculations have been made.

Notes: i) '—' Indicates the period before establishment and commencement of production,
ii) NA = Not Available.

Analysis of Wages and Salary Cost:

For a constant number of worker and employees engaged in the production process, the total wages and salary cost may change due to changes in production or due to changes in rate of wages and salary. We only analysed the internal factor i.e., changes in production which have direct influence on the total cost of production and thereby on per unit cost of production. The following Table-4.6 are presented showing the changes in wages and salary cost with the corresponding changes in production.

The Table-4.6 shows that the average production of the sample mills under public sector increased by 10.58% in 1988-89 whereas the average wages and salary cost increased by only 05.27% over the previous year; again in 1994-95 decrease in wages and salary cost was by (91.02%) whereas the production decreased by only (10.33%); which were surely a good sign. But in 1989-90 the percentage of increase in wages and salary cost was almost doubled and it was more than doubled in 1990-91 as compared to the percentages of increases in production during these particular years. Even, during 1991-92, 1992-93, 1993-94, 1995-96 and 1996-97, the average wages and salary cost of the mills increased by 05.92%, 13.22%, 03.87%, 03.98% and 04.34% respectively when the production in the said years decreased by (00.07%), (12.18%), (14.47%), (8.22%) and (52.09%) respectively.

Looking at the private sector, it can be inferred that the nature of the changes in wages and salary cost was better as compared to public sector. Under this sector decrease in the average wages and salary cost was (19.22%) in 1989-90, where as the average production decreased by only (04.29%). During 1991-92 and 1994-95 the wages and salary cost decreased by (03.37%) and (23.25%) respectively when the production increased by 21.47% and 07.21% respectively. Again in 1992-93 and 1996-97 the percentages of increases in this element of cost were much lower than the corresponding increases in production. The rate of

Table-4.6: Sectoral Changes in Wages and Salary Cost and Corresponding Changes in Production.

Sector	Items	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	Average Wages and Salary costs in lakh Tk.	159.49	167.90	214.69	232.19	245.94	278.46	289.23	263.26	273.73	285.61
	% of increase/ decrease in average Wages and Salary cost over the previous year	NA	05.27	27.87	08.15	05.92	13.22	03.87	(91.02)	03.98	04.34
	Average volume of production in 32s counts in lakh kg	10.02	11.08	12.70	13.15	13.14	11.54	9.87	8.85	8.14	3.90
	%of increase/ decrease in average volume of production over the previous year.	NA	10.58	14.62	03.54	(00.07)	(12.18)	(14.47)	(10.33)	(08.02)	(52.09)
PRIVATE SECTOR	Average Wages and Salary costs in lakh Tk.	263.87	297.09	239.99	252.50	243.99	255.26	378.53	290.51	300.25	328.04
	% of increase/decrease in average Wages and Salary cost over the previous year	NA	12.59	(19.22)	05.21	(03.37)	04.62	48.29	(23.25)	03.35	09.26
	Average volume of production in 32s counts in lakh kg	17.53	18.41	17.62	17.33	21.05	25.30	29.20	31.25	32.37	37.32
	%of increase/ decrease in average volume of production over the previous year.	NA	05.02	(04.29)	(01.65)	21.47	20.19	15.42	07.21	03.58	15.29

Sources: Appendix-1 and Appendix-4; necessary calculations have been made.

Notes: i) NA= Not Applicable;
ii) Brackets indicate negative changes.

increase in the cost was also somewhat lower than the rate of increase in production in 1995-96. Only in 1988-89, 1990-91 and 1993-94, the situation was unfavourable. Because, the increase in wages and salary cost was more than doubled than the increase in production in 1988-89; the cost increased by 05.21% when the production decreased by (01.65%) in 1990-91; and in 1993-94 the cost increased by 48.29%, not matched by an increase in production which was only 15.42%. The overall trend of wages and salary cost both in absolute amount and in relative sense indicates better efficiency in labour management of private sector as compared to public sector.

Wages and Salary Cost-per Kg of Yarn:

It is apparent from Table-4.7 that like per unit material cost, wages and salary cost per kg of yarn was continuously rising in case of all the mills under public sector and for all the years under study with a few exceptions in two or three years. The maximum increase was observed in 1996-97 for all the mills. The rate of wages and salary cost in this year was two to eleven times higher over 1987-88 in case of Mills-A_1 to A_8 and it was seventeen times and forty times higher in case of Mills-A_9 and A_{10} respectively over 1987-88. The public sector average wages and salary cost per kg of yarn went up to Tk. 155.40 in 1996-97 from Tk. 16.63 in 1987-88. The yearly average unit cost was lower than the combined average in case of Mills-A_7, A_2, A_1, A_4, A_3 and A_9 whereas it was higher than the combined average in case of Mills-A_6, A_8, A_5 and A_{10}.

In private sector although a minor fluctuation was observed occasionally in almost all the mills individually and collectively, the average wages and salary cost per kg of yarn taking all the private mills together registered a downward trend and came down to Tk. 9.67 in 1996-97 from Tk. 16.39 in 1987-88. The average cost per kg of yarn in this element was lower than the combined position

Table 4.7: Wages and Salary Cost Per Kg of Yarn in Taka.

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	Range
PUBLIC SECTOR	A_1	15.10	14.44	18.00	18.63	21.83	27.46	33.85	30.04	27.42	43.66	25.04	29.22
	A_2	10.51	11.33	13.96	15.64	17.29	21.17	20.10	25.15	27.32	81.42	24.39	70.91
	A_3	16.90	14.12	15.00	15.77	16.54	19.31	23.54	32.40	32.86	126.09	31.25	111.97
	A_4	16.91	17.33	19.95	21.45	21.17	27.01	45.02	28.50	28.80	48.34	27.45	31.43
	A_5	24.01	22.46	28.17	26.69	28.62	39.74	67.74	42.00	45.74	130.90	45.61	108.44
	A_6	21.35	20.84	23.57	19.43	20.04	24.46	31.00	30.55	50.58	132.33	37.42	112.90
	A_7	21.16	17.33	13.99	13.94	14.11	23.01	26.92	23.83	24.32	34.73	21.33	20.79
	A_8	15.14	15.26	17.70	19.64	20.31	26.26	33.02	31.14	34.04	162.71	37.52	147.57
	A_9	9.53	10.96	16.05	17.69	18.16	25.04	29.13	33.89	43.41	159.85	36.37	150.32
	A_{10}	15.65	14.24	14.69	18.91	21.17	20.25	28.40	35.23	69.41	633.96	87.25	619.72
	Ave	16.63	15.83	18.11	18.78	19.92	25.37	33.75	31.27	38.39	155.40	37.36	139.57
PRIVATE SECTOR	B_1	23.34	19.26	21.77	29.32	34.88	29.35	11.95	6.42	7.65	5.69	18.96	29.19
	B_2	14.69	15.60	16.21	20.41	17.16	17.36	18.54	14.44	13.31	14.31	16.20	7.10
	B_3	13.14	12.07	15.04	15.67	16.43	17.67	17.34	15.72	16.28	16.11	15.55	5.60
	B_4	14.37	17.99	16.73	15.34	15.36	13.33	29.36	16.14	13.90	18.20	17.07	16.03
	B_5	-	-	NA	3.98	5.37	5.86	3.98	3.36	4.19	5.03	4.54	2.50
	B_6	-	-	8.60	9.21	8.81	8.09	8.41	7.86	9.51	12.08	9.07	4.22
	B_7	-	-	5.74	3.84	3.25	5.19	5.46	6.81	7.11	7.46	5.61	4.21
	B_8	-	-	6.78	8.75	9.04	9.70	8.68	8.17	9.78	8.90	8.73	3.00
	B_9	-	-	-	-	NA	7.53	6.51	7.22	6.03	2.79	6.02	4.74
	B_{10}	-	-	-	-	NA	3.37	3.65	3.30	5.26	6.12	4.34	2.82
	Ave	16.39	16.23	12.98	13.32	13.79	11.75	11.39	8.94	9.30	9.67	12.38	7.99

Sources : Appendix-1 and Appendix- 4; necessary calculations have been made.

Notes : i) '—' indicates the period before establishment and commencement of production,
ii) N A= Not Available.

in case of Mills-B_5 to B_{10} and it was higher than the combined position in case of Mills-B_1, B_2, B_3 and B_4. Thus it may be concluded that the mills under private sector showed better efficiency in labour management in comparison to the mills under public sector. The reasons for increase or decrease in wages and salary cost may be increase or decrease in productivity of workers and employee or in rate of wages and salary.

4.1.4 Trends of Power and Fuel Cost and Its Analysis :

Like direct material cost, wages and salary cost, power and fuel cost is also supposed to be directly variable with the volume of production. Appendix-5, exhibits and that the power and fuel cost in all the mills under public sector was showing an upward trend up to 1991-92, except Mill-A_1 in which the cost decreased from Tk. 169.00 lakh in 1987-88 to Tk. 128.89 lakh in 1991-92. But during 1992-93 to 1996-97 all the mills were showing a downward trend in this element of cost unlike material cost and wages and salary cost. The average power and fuel cost in all the public mills came down to Tk. 43.43 lakh in 1996-97 from Tk. 80.41 lakh in 1987-88 registering a downward trend from 1992-93 onward.

But under private sector in Mills-B_1, B_2, B_3, B_4 and B_6 although the power and fuel cost decreased occasionally but the overall trends were towards increase. Mill-B_5 was the only exception in which the overall trend was decreasing. Again a continuous upward trend was shown in case of Mills-B_7, B_8, B_9 and B_{10} over the period of study. The average power and fuel cost in all the private mills taken together continuously recorded a rising trend and went up to Tk. 243.09 lakh in 1996-97 from Tk. 92.17 lakh in 1987-88.

Table-4.8 shows the power and fuel cost as percentage of total cost of production of the selected textile mills during 1987-88 to 1996-97. It was found

Table 4.8 : Power and Fuel Cost as Percentage of Total Cost of Production.

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average
PUBLIC SECTOR	A_1	11.76	15.15	8.73	8.52	8.56	8.24	7.70	6.90	5.64	5.91	8.71
	A_2	14.23	12.31	12.19	12.21	11.49	11.62	11.38	9.61	7.55	7.05	10.96
	A_3	11.97	12.65	12.08	11.75	11.19	11.26	11.11	8.46	6.94	5.57	10.30
	A_4	7.51	8.03	7.41	6.95	6.58	6.35	5.47	4.83	4.20	4.56	6.19
	A_5	7.38	8.18	8.00	8.70	7.92	7.79	6.76	6.68	5.21	6.19	7.30
	A_6	9.03	9.77	11.93	10.10	9.07	9.76	9.46	7.52	7.18	6.17	8.95
	A_7	10.12	10.15	10.57	9.90	9.35	9.63	8.42	7.66	6.77	6.26	8.88
	A_8	14.11	13.71	13.90	13.17	11.42	12.37	12.19	9.53	8.34	6.54	11.53
	A_9	9.15	9.84	9.16	9.76	10.09	10.10	9.52	7.42	6.78	4.49	8.60
	A_{10}	10.19	12.15	11.87	11.40	10.24	10.98	10.38	9.72	8.95	2.79	9.87
	Ave	10.55	11.19	10.53	10.25	9.59	9.83	9.24	7.83	6.76	5.55	9.13
PRIVATE SECTOR	B_1	10.53	8.81	8.79	9.52	7.22	6.61	6.32	6.32	6.21	3.08	7.34
	B_2	9.41	9.40	8.66	8.30	8.40	7.61	8.33	7.15	6.77	8.08	8.21
	B_3	7.18	7.67	8.05	7.10	5.21	4.99	5.84	5.04	4.37	5.28	6.07
	B_4	6.17	6.57	5.52	8.88	9.46	9.16	7.91	6.91	6.45	8.22	7.53
	B_5	-	-	NA	8.36	2.88	4.74	8.11	6.96	7.52	6.22	6.40
	B_6	-	-	9.26	11.33	11.34	11.11	10.87	11.04	8.56	5.78	9.91
	B_7	-	-	12.18	10.96	8.10	5.99	5.57	4.56	4.32	5.44	7.14
	B_8	-	-	10.27	10.63	10.90	10.81	10.28	7.96	7.38	8.46	9.59
	B_9	-	-	-	-	NA	5.89	7.79	6.85	8.08	11.25	7.97
	B_{10}	-	-	-	-	NA	6.64	6.70	5.96	6.23	8.23	6.75
	Ave	8.32	8.11	8.96	9.39	7.94	7.36	7.77	6.88	6.59	7.00	7.83

Source : Compiled from Annual Reports of BTMC and Member Mills of BTMA; calculations have been made.

Notes : i) '—' indicates the period before establishment and commencement of production,
ii) N A= Not Applicable,

that the average power and fuel cost taking all the mills together as a whole was 9.13% in public sector higher than that of 7.83% in private sector. In case of six public mills (Mills-A_1, A_4, A_5, A_6, A_7 and A_9) power and fuel cost comprised less than 10% of total cost of production while three mills had more than 10% of the same. In case of private mills, all the ten mills had the cost constituting less than 10% of total cost of production.

Analysis of Power and Fuel Cost:

It could not be known that the power and fuel cost of the sample mills include whether only the direct power and fuel cost or also the indirect part. From the theoretical point of view, power and fuel cost is a direct element of cost which should proportionately vary with volume of output, if efficient factory management is ensured. The figures in respect to this element of cost and their changes with the volume of production are provided in Table-4.9.

The Table-4.9, explains that the mills under public sector achieved some efficiency in the years 1988-87, 1991-92 and 1994-95. Because the increase in average production was by 10.58% in 1988-89, whereas the power and fuel cost increased by only 07.59%; in 1991-92 the power and fuel cost decreased by (0.3.09%) when the production decreased by only (0.07%); and an efficiency was shown in 1994-95 when the cost in this element decreased by (15.39%) as against the decrease in production by (10.33%). But the years 1989-90, 1990-91, 1992-93, 1993-94, 1995-96 and 1996-97 indicate some inefficiency in management in controlling the power and fuel cost as the percentages of increase in cost were higher and the percentages of decreases in cost were lower than the corresponding increase and decrease in volume of production during these years.

A look into private sector finds that the increase in average power and fuel cost was by 02.75% in the year 1991-92, by 06.67% in 1992-93,by 12.37% in

Table-4.9: Sectoral Changes in Power and Fuel Cost and Corresponding Changes in Production.

Sector	Items	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	Average power & Fuel cost in lakh Taka	80.41	86.51	105.36	116.05	112.46	110.43	95.53	80.83	78.06	43.43
	% of increase/ decrease in average power & Fuel cost over the previous year	NA	07.59	21.79	10.15	(03.09)	(01.05)	(13.49)	(15.39)	(03.43)	(44.36)
	Average volume of production in 32s counts in lakh kg	10.02	11.08	12.70	13.15	13.14	11.54	9.87	8.85	8.14	3.90
	%of increase/ decrease in average volume of production over the previous year.	NA	10.58	14.62	03.54	(00.07)	(12.18)	(14.47)	(10.33)	(08.02)	(52.09)
PRIVATE SECTOR	Average power & Fuel cost in lakh Tk.	92.17	108.08	121.46	142.78	146.70	156.48	175.83	204.86	224.84	243.09
	% of increase/ decrease in average power & Fuel cost over the previous year	NA	17.26	12.38	17.55	02.75	06.67	12.37	16.51	09.75	08.12
	Average volume of production in 32s counts in lakh kg	17.53	18.41	17.62	17.33	21.05	25.30	29.20	31.25	32.37	37.32
	%of increase/ decrease in average volume of production over the previous year.	NA	05.02	(04.29)	(01.65)	21.47	20.19	15.42	07.21	03.58	15.29

Sources: Appendix. 1 and Appendix-5; necessary calculations have been made.
Notes: i) NA= Not Applicable
ii) Brackets indicate negative changes.

1993-94 and by 08.12% in 1996-97, lower than the corresponding increases in average volume of production in the said years by 21.47%, 20.19%, 15.42% and

15.29% respectively indicating a better efficiency of management of the private sector mills in controlling the power and fuel cost. But during 1988-89, 1994-95 and 1995-96, the power and fuel cost increased by 17.26%, 16.51% and 09.75% respectively, two to three times higher than the increases in production of these particular years. The situation in 1989-90 and 1990-91 worsened abruptly showing decrease in volume of production by (04.29%) and (01.65%) and increase in power and fuel cost by 12.38% and 17.55% respectively.

Power and Fuel Cost Per Kg of Yarn (Out put):

The position of power and fuel cost per unit of output in the textile mills under study during 1987-88 to 1996-97 are analysed through the Table-4.10. A study of the figures presented in the table draws our attention to the fact that the power and fuel cost per unit increased during the first half and as well as the second half of the study period in case of all the mills under public sector except Mill-A_1, although a fluctuation was observed occasionally in all the mills. The average power and fuel cost per kg of yarn in all the public sector mills taken together was Tk 14.81 in 1996-97 generating 91.59% increase over 1987-88. The average cost in Mills-A_4, A_1, A_5, A_7 and A_3 was lower than the combined average of Tk. 9.42 and it was higher than the combined average in case of Mills-A_2, A_6, A_9, A_8 and A_{10}.

In contrast, the cost per unit in the mills under private sector also increased during the first half of the study period except Mills-B_5 and B_7 in which the unit cost decreased during this half of period from the initial year. But during the second half, the unit cost in this element increased in Mills-B_2, B_3, B_4, B_8 and also in B_{10} over the year 1987-88 while in case of the remaining mills i.e., Mills-B_5, B_6, B_7 and B_9, the cost decreased over the initial year. The average power and fuel cost per unit in all the private mills taken together was Tk. 7.29 during the period of study and the cost increased by 91.59% in 1996-97 over 1987-88. The average

Table 4.10 : Power and Fuel Cost per Kg of Yarn (Output) in Taka

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	Range
PUBLIC SECTOR	A_1	9.31	8.31	7.44	7.69	7.82	8.33	9.33	7.82	7.95	9.27	8.33	1.89
	A_2	8.28	7.42	8.22	8.83	9.12	9.70	9.94	9.67	9.69	14.24	9.51	6.82
	A_3	8.57	8.32	8.14	8.84	8.88	8.47	9.22	9.74	8.72	12.50	9.14	4.36
	A_4	5.39	5.34	5.72	6.09	5.88	5.81	6.20	5.21	5.32	6.90	5.79	1.69
	A_5	5.97	6.70	7.23	7.98	8.07	8.65	9.49	8.51	8.08	14.66	8.53	8.69
	A_6	7.14	7.40	9.40	9.19	8.35	9.13	10.56	8.99	12.08	18.14	10.04	11.00
	A_7	7.75	6.43	7.84	8.14	8.01	11.67	8.45	8.68	9.11	9.27	8.54	5.24
	A_8	8.31	8.51	9.76	10.32	8.86	10.17	11.25	9.88	10.31	18.27	10.56	9.96
	A_9	6.95	7.73	9.12	10.55	10.65	10.89	10.17	9.70	10.78	16.53	10.31	9.58
	A_{10}	9.65	10.19	10.09	12.24	11.25	10.95	11.36	12.10	18.05	28.35	13.42	18.70
	Ave	7.73	7.64	8.30	8.99	8.69	9.38	9.60	9.03	10.01	14.81	9.42	7.17
PRIVATE SECTOR	B_1	11.53	9.65	10.49	11.69	13.36	16.90	8.30	7.32	8.56	3.45	10.13	13.45
	B_2	5.88	6.24	5.97	7.20	6.13	5.72	5.72	5.26	5.29	6.45	5.99	1.94
	B_3	5.42	6.18	7.41	7.82	6.51	5.66	6.65	6.52	6.82	8.05	6.70	2.63
	B_4	3.67	4.42	3.52	5.69	6.31	6.30	6.00	7.14	7.29	7.86	5.82	4.34
	B_5	-	-	NA	7.68	2.56	3.90	6.32	6.85	8.86	7.21	6.20	5.12
	B_6	-	-	6.08	8.19	8.03	8.90	7.69	9.07	9.23	5.56	7.84	3.51
	B_7	-	-	10.25	11.76	6.66	4.99	4.79	5.19	5.02	6.45	6.89	6.97
	B_8	-	-	9.74	9.71	11.00	12.43	10.57	9.32	9.74	10.17	10.34	3.11
	B_9	-	-	-	-	NA	7.15	5.54	6.35	6.76	4.19	6.00	2.96
	B_{10}	-	-	-	-	NA	4.43	4.54	5.92	9.17	9.56	6.72	5.13
	Ave	6.63	6.62	7.64	8.72	7.57	7.64	6.61	6.89	7.67	6.90	7.29	2.11

Sources : Appendix-1 and Appendix-5; calculations have been made.

Notes : i) '—' indicates the period before establishment and commencement of production,
ii) N A= Not Applicable.

power and fuel cost per unit in Mills-B_4, B_2, B_9, B_5, B_3, B_{10} and B_7 was lower than the combined average whereas it was higher than the combined position in case of Mills-B_6, B_8 and B_1. It can be concluded that in general the power and fuel cost per unit in the mills under private sector was lower than that in the mills under public sector in all the years under study which means that the private sector mills achieved better efficiency in controlling power and fuel cost.

4.1.5 Trend of Expenditure on Stores and Spares (Repair Cost):

As the expenditure on stores and spares depends upon the use of plant and machinery's in production process, it is supposed to be shown an increasing trend

Table-4.11 Trend of Expenditure on Stores and Spares and Its Relative Proportion to total Cost of Production.

Sec tor	Items	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	Average Repair cost in lakh Taka	22.03	29.67	34.68	34.08	31.85	33.42	27.13	22.62	21.26	11.20
	Repair cost as % of Total cost of production	03.03	4.05	3.54	3.02	2.76	3.01	2.51	2.30	1.76	1.39
PRIVATE SECTOR	Average Repair cost in lakh Taka.	55.45	70.27	43.79	44.05	49.20	58.44	68.13	80.27	109.24	112.90
	Repair cost as % of total cost of production.	04.01	4.64	2.52	2.35	2.25	1.93	2.26	2.03	2.17	2.18

Sources: i) Appencix-6;

ii) Annual Reports of BTMC and Member Mills of BTMA.

with the passage of time. As the plant and machinery remain new in the earlier years of establishment the repairing costs become lower and with the age of mills, this cost is supposed to increase gradually. Table 4.11 exhibited the trend of expenditure on stores and spares in the textile mills under study.

From Table–4.11 it is clear that repair cost in public sector mills under study increased up to 1989-90 over the previous year but its relative share of total cost of production showed a decrease in the year 1989-90 over the previous year. The cost decreased in 1990-91 and 1991-92 and increased in 1992-93 both in absolute amount and in the relative sense i.e., percentage share in total cost. This might be due to disproportionate increase or decrease in other elements of cost. During the succeeding years the average repair cost of the public sector mills decreased continuously in absolute amount and also as a share of the total cost of production. But in the private sector, the average repair cost of the mills continuously increased over 1989-90 the year of abrupt decrease in cost to Tk. 43.79 lakh from Tk. 70.27 lakh in 1988-89; but as a share of total cost of production the cost remained almost static within Tk. 2.52 and Tk. 2.03 from 1989-90 onward except in 1992-93 in which it was only Tk. 1.93.

Analysis of Expenditure on Stores and Spares:

The expenditure on stores and spares i.e., repair cost may increase with the length of life of a machine both in volume and per unit. In the situation when productivity of machine falls but the repair cost increases, the existing machine requires replacement[3]. As is clear from the Table-4.12 the average repair cost per unit of out put of the mills under public sector did not show any significant change during the years under study rather the per unit cost remained almost static throughout the period. But a decrease in repair cost as against the increase in production during 1990-91 and also higher rates of decreases in cost as compared

Table-4.12: Sectoral Changes in Repair Cost per Unit with the Corresponding Changes in Production.

Sector	Items	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	Average Repair cost in lakh Tk.	22.03	29.67	34.68	34.08	31.85	33.42	27.13	22.62	21.26	11.20
	.Average production in lakh kg	10.02	11.08	12.70	13.15	13.14	11.54	9.87	8.85	8.14	3.90
	% of changes in Repair cost over previous years.	NA	34.68	16.89	(1.73)	(6.54)	4.93	(18.82)	(16.62)	(6.01)	(47.32)
	% of changes in volume of production	NA	10.58	14.62	3.54	(0.08)	(12.18)	(14.47)	(10.33)	(8.02)	(52.09)
	Repair cost per unit of output.	2.20	2.68	2.73	2.59	2.42	2.90	2.75	2.56	2.61	2.87
PRIVATE SECTOR	Average Repair cost in lakh Tk.	55.45	70.27	43.79	44.05	49.20	58.44	68.13	80.27	109.24	112.90
	.Average production in lakh kg	17.53	18.41	17.62	17.33	21.05	25.30	29.20	31.25	32.37	37.32
	% of changes in Repair cost over previous years.	NA	26.73	(37.68)	0.59	11.69	18.78	16.58	17.82	36.09	3.35
	% of changes in volume of production	NA	5.02	(04.29)	(01.65)	21.47	20.19	15.42	07.02	03.58	15.29
	Repair cost per unit of output.	3.16	3.82	2.49	2.54	2.34	2.31	2.33	2.57	3.37	3.03

Notes: i) NA=Not Applicable.

ii) Brackets indicate negative changes.

to volume of production during 1991-92, 1993-94 and 1994-95 indicate better efficiency in management of production process during the said years. A consistent change in repair cost with the corresponding change in production was observed during 1989-90, 1995-96 and 1996-97. The repair cost abruptly increased only in 1988-89 and 1992-93 by 34.68% and 4.93% respectively as against 10.58% increase and (12.18%) decrease in volume of production respectively. Lack of planned maintenance and correct lubrication resulted into premature wear of various parts and frequent machinery breakdown, thus pushing higher the stores and spares cost.

In private sector, the average repair cost per unit of output in the combined position of the mills decreased to Tk. 2.49 in 1989-90 from Tk. 3.82 in 1988-85 and remained almost static up to 1994-95. After then it increased and reverted back to its original level i.e., Tk. 3.03 in 1996-97. Some efficiency was achieved in 1989-90, when the repair cost decreased by (37.68%) as against the decrease in production by only (4.29%); and also achieved in 1991-92, 1992-93 and 1996-97, when the repair cost increased at a lower rate as compared to the rate of increases in production. But an opposite picture was shown during the other years, when the repair cost increased at a higher rate than the increase in production.

4.1.6 Depreciation Cost and Its Analysis :

Depreciation is supposed to be equal in absolute sense and also as a percentage of total cost of production for all the years if straight-line method of charging depreciation is used. But it must decrease in absolute sense if diminishing balance method is used. All the textile mils under BTMC (public sector) used diminishing balance method of charging depreciation, but in private sector some mills used diminishing balance method, while some mills used straight-line method of charging depreciation and some of them changed the

Table 4.13: Depreciation Cost as Percentage of Total Cost of Production.

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average
PUBLIC SECTOR	A_1	11.55	14.51	7.00	10.70	7.73	11.43	9.88	10.08	10.30	10.64	10.38
	A_2	8.63	6.84	6.11	5.63	4.82	4.27	3.63	4.07	2.33	5.41	5.17
	A_3	7.61	5.22	4.48	3.79	3.26	3.13	3.41	3.19	6.38	4.92	4.54
	A_4	0.74	12.00	4.14	6.06	5.69	6.91	9.69	7.47	5.39	7.52	6.56
	A_5	1.06	1.02	0.97	0.80	0.74	0.82	1.32	1.05	0.76	1.35	0.99
	A_6	0.76	0.88	2.09	14.15	14.19	13.70	14.18	12.66	13.74	20.33	10.67
	A_7	0.69	0.82	11.30	13.93	12.78	12.35	15.68	12.18	9.01	10.78	9.95
	A_8	7.91	6.65	5.25	4.41	4.41	4.42	4.49	3.42	2.43	4.82	4.82
	A_9	19.05	17.99	18.38	16.06	15.00	19.51	18.40	16.17	15.08	21.41	17.71
	A_{10}	23.69	20.26	17.20	16.83	15.88	15.19	12.10	12.28	13.13	21.90	16.85
	Ave	8.17	8.62	7.69	9.24	8.45	9.17	9.28	8.26	7.86	10.91	8.76
PRIVATE SECTOR	B_1	44.96	45.31	39.07	49.07	33.72	29.09	32.15	32.49	31.03	25.86	36.28
	B_2	0.93	0.91	0.84	0.79	0.80	0.62	0.71	0.71	0.50	0.84	0.77
	B_3	0.14	4.02	4.14	3.67	3.30	3.67	3.89	3.09	2.38	1.96	3.03
	B_4	4.82	4.39	4.43	4.73	4.17	6.46	5.05	3.99	3.50	4.21	4.58
	B_5	-	-	NA	18.69	21.00	16.91	21.00	10.55	9.06	11.58	15.54
	B_6	-	-	7.71	12.75	16.72	13.43	11.54	11.06	8.48	9.98	11.46
	B_7	-	-	15.00	10.52	11.84	10.44	9.35	8.44	8.69	9.00	10.41
	B_8	-	-	15.98	20.40	17.28	14.87	13.44	11.22	8.92	7.04	13.64
	B_9	-	-	-	-	NA	17.10	15.60	10.08	10.54	10.24	12.71
	B_{10}	-	-	-	-	NA	17.60	17.87	12.05	8.75	9.80	13.21
	Ave	12.71	13.66	12.45	15.08	13.60	13.02	13.06	10.37	9.19	9.05	12.16

Notes : i) '—' indicates the period before establishment and commencement of production.

ii) N A= Not Applicable,

method used during the period under review. Total amount of depreciation might increase due to acquisition of new machinery and it might also show a downward trend when the assets are sold out or its effective accounting life expires.

Appendix-6, exhibits that some mills showed a decreasing trend in depreciation cost with slight fluctuations in one or two years, some mills showed a mixed trend (such as Mills-A_4, A_6, A_7), while some mills showed an over all upward trend during the period under study. For example, in case of Mill-A_1, the depreciation cost went up to Tk. 180.45 lakh in 1996-97 from Tk. 166.00 lakh in 1987-88. The average depreciation cost for all the public sector mills was towards increase (i.e. Tk. 83.99 lakh in 1996-97 over Tk. 68.29 lakh in 1987-88). But the average depreciation cost for all the private mills showed an upward trend throughout the period, and the cost went up to Tk. 350.30 lakh in 1996-97 over Tk.110.29 lakh in 1987-88. Mills-B_3, B_6 and B_8 showed a mixed trend while B_7 showed an increasing trend throughout the period. In case of other mills, the depreciation cost fluctuated during the years but these overall trends were towards increase except Mill-B_5 in which the trend of cost was towards decrease. The fluctuations might occurred due to inclusion or exclusion of new or old assets.

Depreciation cost as percentage of total cost of production (Table-4.13) in the mills under public sector was lower as compared to that in the mills under private sector. The average cost taking all the mills for the entire period was found to be 8.76% in case of public sector as against 12.16% in case of private sector. Six public mills had the cost less than 10% of the total cost of production while four such mills had more than 10% of the same. Among private sector mills only three mills had depreciation cost forming less than 10% of total cost of production, six mills had more than 10% and one mill had above 30%. The reasons for lower depreciation cost in public mills might be lower written down value of plant and machinery being old age than that of private sector mills.

4.1.7 Trend of Cost of Production Per Unit of Output :

Cost of production per unit of output is an important criterion of efficiency. The lower the cost per unit of output, the higher would be the efficiency of the enterprise. The Table-4.14 is presented to judge this fact in the textile mills under public and private sector.

Looking at the data provided in Table-4.14, one can safely conclude that cost of yarn per kg in all the textile mills under public sector showed an upward trend throughout the period of study although a sudden break was there in one or two years. The average cost of production in all the mills as a whole during the study period was Tk. 117.63 per kg Unit cost in Mills-A_2, A_3, A_4 and A_7 was less than Tk. 100, in Mills-A_8 and A_1, it was more than Tk. 100 and in case of Mills-A_6, A_5, A_9 and A_{10} cost per unit were above Tk. 120. The maximum unit cost was Tk. 203.26 in Mill-A_{10}.

Under private sector, the overall trend of cost per kg of yarn was also increasing in all the selected mills. But the average cost per unit in all the mills, as a whole for the entire period was Tk. 95.21, much lower than that of public sector. Average cost of yarn per kg in Mills-B_6, B_2, B_4 and B_9 was less than the sector average of Tk. 95.21, it was more than the average in Mills-B_5, B_7 and B_{10} and in case of only Mills-B_8, B_3 and B_1 it was above Tk. 100. Thus the lower cost per kg of yarn in private sector mills indicate higher efficiency as compared to that of public sector mills.

4.2 SALES ACHIEVEMENT

The figure of sales is the index of progress made by a concern. Every business enterprise, whether in public or private sector, must pay due attention

Table 4.14: Cost of Production of Yarn Per Kg (In average 32s count)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average
PUBLIC SECTOR	A_1	79.17	54.85	85.27	90.26	91.33	101.01	121.10	113.26	140.86	156.95	103.41
	A_2	58.17	60.30	67.48	72.27	79.38	83.46	87.31	100.63	128.25	202.14	93.94
	A_3	71.59	65.72	67.39	75.28	79.38	75.22	82.97	115.11	125.58	224.38	98.26
	A_4	71.73	66.53	77.25	87.65	89.35	91.44	113.45	107.84	126.53	151.45	98.32
	A_5	80.88	81.83	90.39	91.70	101.87	108.53	140.34	127.39	155.13	236.81	121.49
	A_6	79.02	75.74	82.56	90.94	92.11	93.58	111.63	119.50	168.29	293.93	120.73
	A_7	76.57	63.28	74.19	82.22	85.77	121.32	100.29	113.37	134.58	148.06	99.97
	A_8	58.87	62.11	70.18	78.34	77.59	82.17	92.29	103.62	123.59	279.63	102.84
	A_9	75.92	78.59	99.55	108.09	105.47	107.76	106.75	130.66	159.11	368.38	134.03
	A_{10}	94.75	83.84	85.03	107.37	109.87	99.67	109.47	124.41	201.54	1016.65	203.26
	Ave	74.67	69.28	79.93	88.41	91.21	96.42	106.56	115.58	146.35	307.84	117.63
PRIVATE SECTOR	B_1	109.46	109.57	119.31	122.85	185.06	255.63	131.39	115.72	137.87	112.16	139.90
	B_2	62.46	66.34	68.93	86.78	72.95	75.15	68.64	73.59	78.06	79.90	73.28
	B_3	75.54	80.52	91.97	110.17	124.92	113.61	113.86	129.35	155.89	152.43	114.83
	B_4	59.42	67.19	63.87	64.08	66.70	68.76	75.79	103.26	113.07	95.65	77.78
	B_5	-	-	NA	91.90	88.94	82.24	77.97	98.46	117.85	115.92	96.18
	B_6	-	-	65.59	72.31	70.79	72.81	70.74	82.13	107.76	96.18	71.59
	B_7	-	-	84.17	107.26	82.30	83.29	86.05	113.81	116.16	118.62	98.96
	B_8	-	-	94.83	91.36	100.90	114.99	102.81	117.01	131.93	120.14	109.25
	B_9	-	-	-	-	NA	121.32	71.10	92.71	83.71	37.21	81.21
	B_{10}	-	-	-	-	NA	66.64	67.74	99.19	147.24	116.14	99.39
	Ave	76.72	80.91	84.10	93.34	99.07	105.44	86.61	102.52	118.95	104.44	95.21

Source : Necessary calculations have been made from the Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production.
ii) N A= Not Applicable.

towards effective marketing of its products. Because the efficiency and success of an enterprise depend much upon the effective disposal of goods or services and the level of inventory is the minimum possible one. Desai[4], indicated sales performance as the single most influencing factor on profits. Saha[5], Sobhan and Ahmed[6], also used this indicator in their studies. In the words of Agarwal[7], "The importance of sales can be compared with the importance of blood in human body. The body does not function properly on account of inadequacy of blood, similarly a business concern does not function profitably if the sales are not adequate. The earnings of a business concern are affected by its sales trend to a great extent".

4.2.1 Net Sales (Turnover) of Cotton Textile Mills Under Study:

It was observed (Appendix 7) that the net sales in most of the selected textile mills under public sector registered a rising trend during 1987-88 to 1991-92 first half of the study period. During the last half of the study period (1992-93 to 1996-97) the fluctuations in the net sales of all the public sector mills was occurred but the overall trend was towards falling in all the cases. A look into private sector further shows that in three private sector mills the net sales registered a continuous rising trend through out the period under study while the trend was rising up to 1995-96 in three cases. In the other private mills the net sales fluctuated occasionally.

Table-4.15 gives us a more clear picture of sales performance of the mills under the two sectors. The data presented in the above table tells us that the average net sales went down in all the public sector mills during the second half of the study period as compared to the first half except Mills-A_7 and A_{10} where the average sales during the second half increased by 26.30% and 5.49% respectively over the first half. The decline in sales was limited to below 15% to 30% in case

of five mills viz., Mills-A_1, A_3, A_4, A_6 and A_9. The performance was the worst in Mill-A_5 where the sales decreased by above 40% during the same period.

Table-4.15: Enterprise Level Trends in Net Sales during 1987-88 to 1996-97.

(Figure in lakh Tk.)

PUBLIC SECTOR				PRIVATE SECTOR			
Mills	Average Net Sales (1987-88 to 1991-92)	Average Net Sales (1992-93 to 1996-97)	Percentage Change	Mills	Average Net Sales (1987-88 to 1991-92)	Average Net Sales (1992-93 to 1996-97)	Percentage Change
A_1	1642.63	1382.31	(15.85)	B_1	1062.11	3026.31	184.93
A_2	1134.18	1028.01	(9.36)	B_2	985.71	1508.16	53.00
A_3	1128.37	901.63	(20.09)	B_3	1790.51	2787.40	55.68
A_4	715.68	534.73	(25.28)	B_4	3190.63	5617.18	76.05
A_5	559.77	300.57	(46.30)	B_5	650.05	942.84	45.04
A_6	884.29	662.96	(25.03)	B_6	779.72	1883.48	141.56
A_7	1602.65	2024.16	26.30	B_7	3910.58	12004.14	206.97
A_8	796.46	695.72	(12.65)	B_8	1268.74	2462.45	94.09
A_9	611.78	493.62	(19.31)	B_9	—	1991.32	NA
A_{10}	812.63	857.22	5.49	B_{10}	—	4134.81	NA

Source: Appendix-8; necessary calculations have been made.

Notes : i) '—' indicates the period before establishment and commencement of production,
ii) NA= Not Applicable; iii) Brackets indicate negative changes.

But in the private sector the sales achievement was superior in all the mills during the second half of the study period as compared to their counterparts in public sector. Mills-B_1, B_2, B_3 and B_4 (denationalised mills) achieved 184.93%,

53.00%, 55.68% and 76.65% increase in sales during 1992-93 to 1996-97 over their average sales during 1987-88 to 1991-92. Mills-B_5, B_6, B_7 and B_8 also succeeded in increasing sales by 45.00%, 141.56%, 206.97% and 94.09% respectively during the same period.

Sectoral Trend in Sales :

Table-4.16 brings out the sectoral trends in sales of cotton textile industry in Bangladesh. The average annual sales in the combined position of all the public sector mills decreased by (10.19%) during 1992-97 over 1987-92 while the same of all the private sector mills increased by 114.80% during 1992-97 over 1987-92. Taking individual years, we notice that the average sales of all the public mills taken as a whole registered a rising trend during 1987-88 to 1990-91. It declined notably in 1991-92, again it increased during 1992-93 and 1993-94 but showed a falling trend thereafter. The average sales of the said mills fell down to Tk. 412.55 lakh in 1996-97 from Tk. 854.93 lakh in 1987-88 showing a decline of (51.74%). In private sector, the average sales of all the mills taken together generated a continuous rising trend throughout the study period. The average sales of these mills went up to Tk. 4397.33 lakh in 1996-97 from Tk. 1383.40 lakh in 1987-88 registering 217.86% increase.

Table-4.16: Sectoral Trends in Net Sales during 1987-88 to 1996-97. (Figure in Lakh Taka)

Years / Sectors	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average 1987-92	Average 1992-97	% change
Public (32s ave. count)	854.93	927.74	1107.42	1162.57	891.56	1102.53	1105.89	984.66	834.84	412.55	988.84	888.09	(10.19)
Private (32s ave. count)	1383.40	1559.00	1613.11	1757.00	2150.58	2442.95	3060.58	3939.07	4339.12	4397.33	1692.62	3635.81	114.80

Note: i) Brackets indicate negative changes.

The falling trend in sales of public sector mills was mainly due to falling trend in their production and low quality of yarn querry regarding this, all the mill authorities under public sector as well as private sector mentioned "smuggled yarn at low price" was the main reason for falling in their sales. The linear trend of sales using least square method is presented in Figure-4.7.

4.2.2 Sales Per Employee :

Sales per employee reflects the efficiency of manpower in terms of sales, as used by Rao[8]. The net sales per employee in the selected textile mills in Bangladesh are presented in the Table-4.17.

It is evident from the above table that the average sales per employee in almost all the mills under public sector was much lower than that of private mills. It indicates the better efficiency of manpower in the mills under private sector as compared to public sector's. In public sector the average sales per employee was less than Tk. 300.00 in Mills-A_5, A_8, A_9 and A_{10}; it was between Tk. 190.00 to Tk. 110.00 per employee in Mills-A_1, A_3, A_4 and A_6. Mill-A_2 had the highest sales per employee of Tk. 126.36 followed by Mill-A_7 of Tk. 126.07.

But in the private sector, the sales per employee was Tk. 110.90 in Mill-B_2, while Mills-B_3, B_4 and B_6 had the same between Tk. 150 to Tk. 200. However, Mill-B_{10} achieved the highest sales per employee of Tk. 567.28 followed by Mill-B_7 of Tk. 552.54 and Mill-B_5 of Tk. 363.40. The average sales per employee taking all the private mills together went up to Tk. 335.73 in 1996-97 from Tk. 92.98 in 1987-88 registering an increase of 263.82%, but the same of all the public mills taken as a whole went down to Tk. 49.19 in 1996-97 from Tk. 93.87 in 1987-88 showing a decline of (47.60%).

Table 4.17: Sales Per Employee.

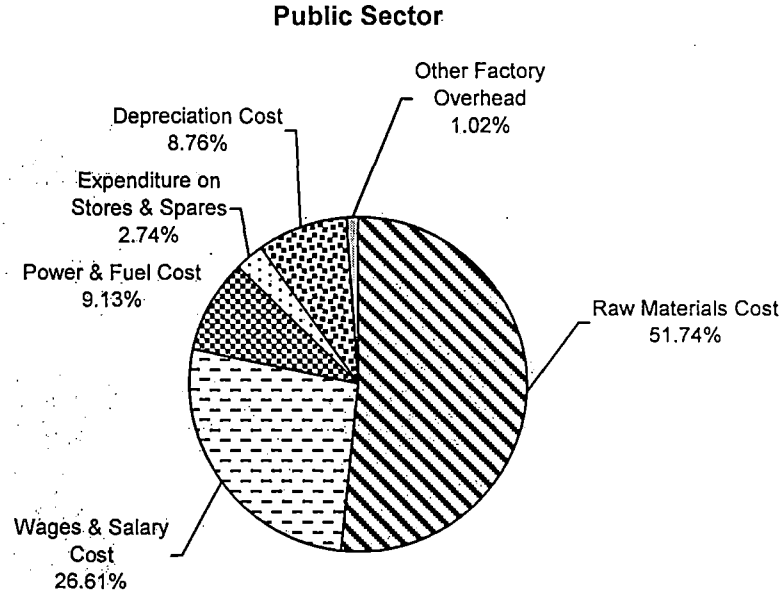
	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average
PUBLIC SECTOR	A_1	127.50	109.20	122.20	121.70	54.10	128.70	153.40	62.50	109.40	63.50	105.22
	A_2	123.60	147.40	128.10	126.30	77.50	111.70	231.50	152.70	93.80	71.00	126.36
	A_3	85.30	104.50	122.40	113.70	139.10	131.70	97.60	116.80	110.80	36.70	105.86
	A_4	84.10	97.40	97.20	109.90	118.10	70.20	127.20	125.40	140.60	84.70	105.48
	A_5	77.50	91.30	79.90	84.70	88.10	72.90	70.10	79.20	85.80	29.80	75.93
	A_6	84.90	98.20	97.50	129.70	141.50	101.30	124.30	129.70	77.80	38.10	102.30
	A_7	84.40	58.50	133.50	149.30	118.90	162.40	131.10	168.00	157.60	97.00	126.07
	A_8	81.80	83.10	90.40	89.50	70.40	76.20	80.20	127.10	95.30	28.40	82.24
	A_9	111.40	127.00	105.60	128.40	59.30	127.60	106.80	90.70	83.60	32.00	97.24
	A_{10}	78.30	95.90	112.40	91.00	40.70	110.20	139.00	127.20	56.50	10.70	86.19
	Ave	93.88	101.25	108.92	114.42	90.77	109.29	126.12	117.93	101.12	49.19	101.29
PRIVATE SECTOR	B_1	83.60	107.10	125.10	91.80	112.70	137.80	271.10	446.60	371.80	671.50	241.91
	B_2	72.90	62.80	72.70	62.20	96.90	113.00	139.00	198.40	175.00	116.30	110.92
	B_3	103.40	135.20	152.50	143.40	167.90	179.30	175.50	245.50	317.80	267.30	188.78
	B_4	109.20	113.20	117.80	126.20	117.10	149.20	168.60	231.30	237.80	211.30	158.17
	B_5	-	-	NA	283.90	252.80	260.60	357.50	584.80	540.90	264.00	363.40
	B_6	-	-	80.60	161.80	195.30	141.60	198.80	221.90	236.70	213.20	181.24
	B_7	-	-	385.40	540.20	447.10	543.30	705.90	619.00	638.10	541.30	552.24
	B_8	-	-	164.60	173.40	197.40	164.80	229.20	298.90	303.50	296.20	228.50
	B_9	-	-	-	-	NA	226.40	293.40	255.60	296.30	356.40	285.62
	B_{10}	-	-	-	-	NA	403.20	567.00	760.60	685.80	419.80	567.28
	Ave	92.28	104.58	156.96	197.86	198.40	231.92	310.60	386.19	380.37	335.73	239.49

Source : Annual Reports of BTMC and Member Mills of BTMA, necessary calculations have been made.

Notes : i) '—' indicates the period before establishment and commencement of production.
ii) NA = Not Applicable.

4.3 GRAPHICAL HIGHLIGHTS

Fig.4.1 : Cost Structure of The Cotton Textile Industry



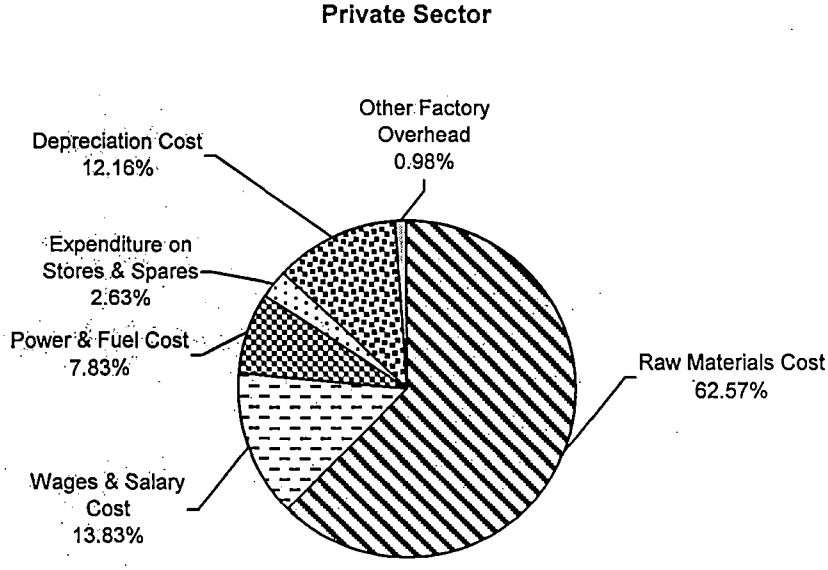


Fig. 4.2 : Material Cost as % of Total Cost of Production

(Source : Table-4.1)

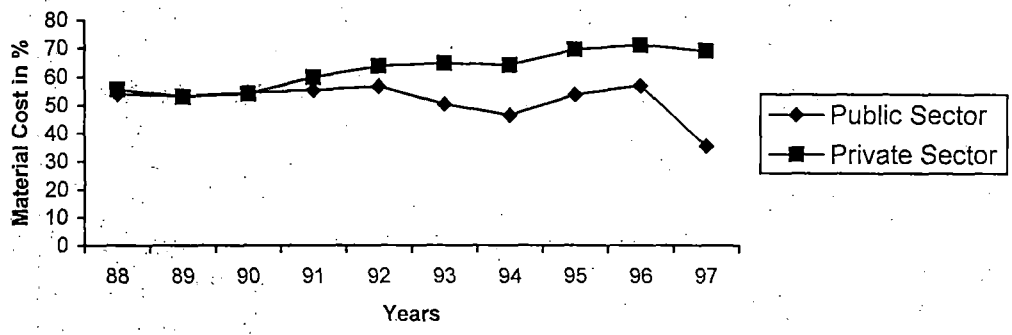


Fig. 4.3 : Wages & Salary Cost as % of Total Cost of Production

(Source : Table-4.5)

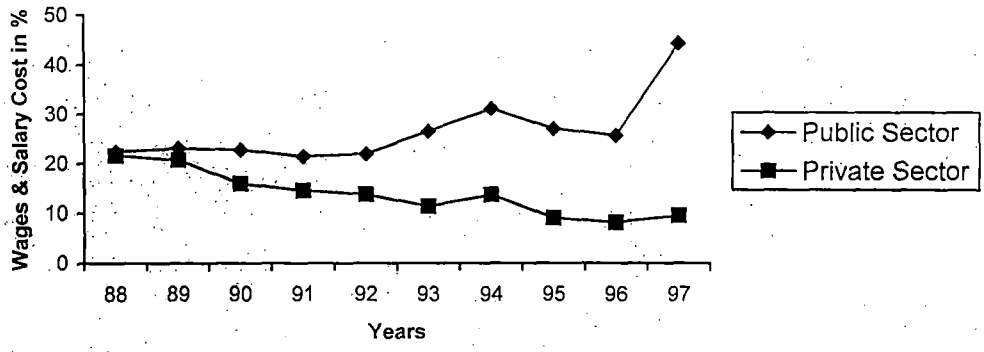


Fig. 4.4 : Power & Fuel Cost as % of Total Cost of Production

(Source : Table-4.8)

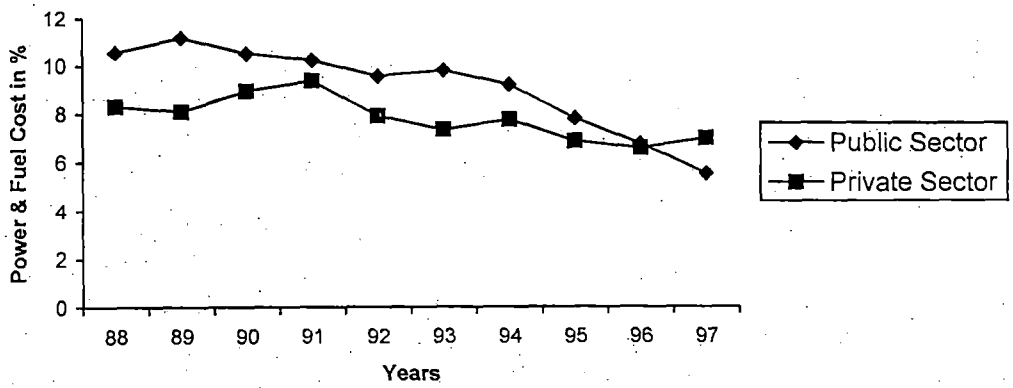


Fig. 4.5 : Cost of Production of Yarn per kg
(Source : Table-4.14)

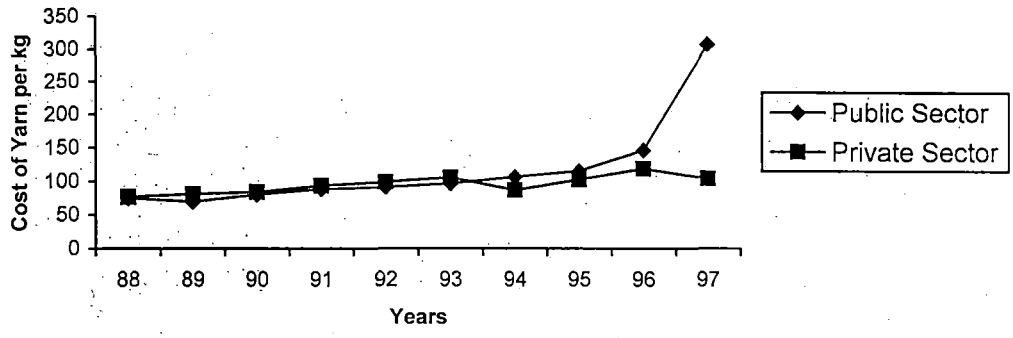


Fig. 4.6 : Sales Trend
(Source : Table-4.16)

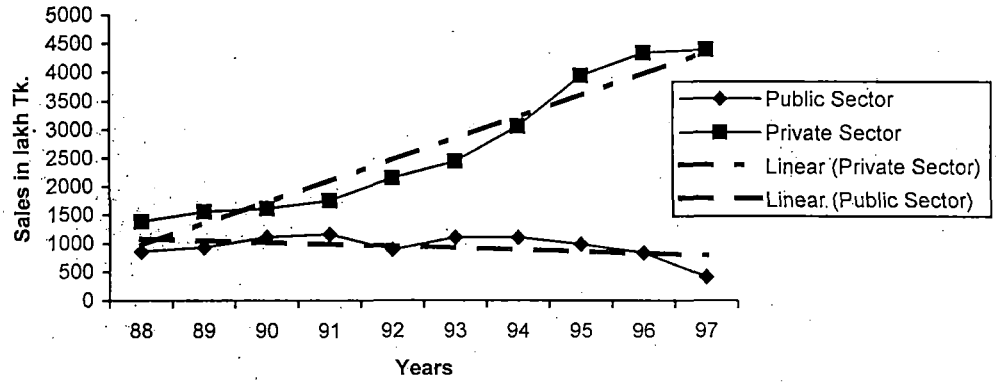


Fig. 4.7: Sales per Employee
(Source : Table-4.17)

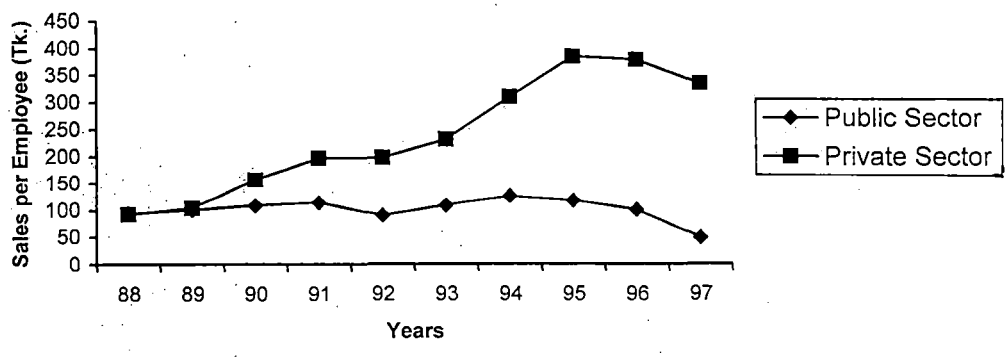


Table 4.18: Mean and 't'-values of the Performance Indicators for Public and Private Sector: 1987-88 to 1996-97.

	Table No. / Years & Parameters	P_1 4.1	P_2 4.4	P_3 4.5	P_4 4.8	P_5 4.11	P_6 4.14	P_7 4.17
PUBLIC SECTOR	1987-88	54.00	46.00	22.35	10.55	03.03	74.67	93.88
	1988-89	53.17	46.83	23.05	11.19	04.05	69.28	101.25
	1989-90	54.58	45.43	22.71	10.53	03.54	79.93	108.92
	1990-91	55.33	44.67	21.42	10.25	03.02	88.41	114.42
	1991-92	56.59	43.31	21.92	9.59	02.76	91.21	90.77
	1992-93	50.48	49.53	26.50	9.83	03.01	96.42	109.29
	1993-94	46.48	53.05	31.09	9.24	02.51	106.56	126.12
	1994-95	53.88	46.12	27.00	7.83	02.30	115.58	117.93
	1995-96	57.09	42.67	25.66	6.76	01.76	146.35	101.12
	1996-97	35.70	64.30	44.39	5.55	01.39	307.84	49.19
	X_1	51.74	48.191	26.609	9.132	02.736	117.625	101.289
	SD_1	6.432	6.413	6.930	1.835	0.790	70.504	21.260
	V_1	41.372	41.130	48.025	3.368	0.625	4970.855	452.006
PRIVATE SECTOR	1987-88	55.58	44.43	21.60	8.32	04.01	76.72	92.28
	1988-89	53.03	46.98	20.71	8.11	04.64	80.91	104.58
	1989-90	54.06	45.94	15.92	8.96	02.52	84.10	156.96
	1990-91	59.99	40.13	14.47	9.39	02.35	93.34	197.86
	1991-92	63.82	36.18	13.74	7.04	02.25	99.07	198.40
	1992-93	64.82	35.18	11.37	7.36	01.93	105.44	231.92
	1993-94	64.24	35.76	13.64	7.77	02.26	86.61	310.60
	1994-95	69.63	30.37	9.07	6.88	02.03	102.52	386.19
	1995-96	71.30	28.70	8.20	6.59	02.17	118.95	380.37
	1996-97	69.20	30.79	9.60	7.00	02.18	104.44	335.73
	X_2	62.567	37.446	13.632	7.740	02.634	95.21	239.489
	SD_2	6.653	6.662	4.605	0.939	0.918	13.204	108.448
	V_2	44.264	44.386	21.203	0.881	0.842	174.336	11760.920
t-values		3.700*	3.674*	4.856*	2.133*	0.266	0.988	3.955*

Notes : i) P = Performance Indicator; ii) * denotes significant at 0.05 level of significance..

4.4 MEAN AND 't' VALUES OF THE PERFORMANCE INDICATORS AND SIGNIFICANCE OF MEAN DIFFERENCES

The mean and 't' values and the actual values of the performance indicators used for analysing costs and sales performance of public and private sector textile mills are provided in Table 4.18.

The Table reveals that the mean differences of five indicators are significant at 0.05 level of significance. These indicators are given below :

P_1 = Materials cost as % of Total cost.

P_2 = Conversion cost as % of Total cost.

P_3 = Wages and salary cost as % of Total cost.

P_4 = Power and fuel cost as % of Total cost.

P_7 = Sales per employee.

The 't' values of the above indicators are greater than the table value of 't' (2.101) at 0.05 level of significance. But the mean differences of stores and spares as % of total cost (P_5) and cost of production per kg of yarn (P_6) are not significant at 0.05 level of significance.

4.5 SUMMING UP

After going through the above analysis of cost of production in the selected textile mills, it can be concluded that the direct cost i.e., material cost, wages and salary cost, power and fuel cost were not varying proportionately with the volume of output in the public sector mills; the cost decreased at lower rate than the rate of decreases in production and the costs increased as against the decreases in production. But the situation was far better in case of private sector. The average cost of production in all the public sector mills taken together went up to Tk. 304.84 in 1996-97 registering 312.27% increase over 1987-88, while in

case of private sector the same went up to Tk 104.44 in 1996-97 registering 36.13% increase over 1987-88. In public sector Mill-A_{10} recorded the highest cost per kg of yarn (Tk. 203.26) followed by Mill-A_9 (Tk 134.03), A_5 (Tk 121.49) and Mill-A_6 (Tk. 120.73) proving to be more inefficient among all. In contrast, private mill B_1 recorded the highest cost per kg (Tk. 139.90) followed by B_3 (Tk 114.83) and B_8 (Tk.109.25) proving their more inefficiency in management. The higher average cost of production in the public sector mills was mainly due to increasing material cost, wages and salary, power and fuel and also increasing conversion cost. The average percentage of material cost to total cost of production and average material cost per unit in all the private mills taken together was higher but its range of variation was lower indicating a steady trend as compared to that of public sector. Better quality of raw material and price level changes resulted in higher material cost as stated by some private owners. But on average the lower percentage of wages and salaries and power and fuel cost to total cost of production as well as lower average per unit cost in these elements in the case of private sector mills indicate better efficiency of management as compared to public sector. Over staffing and increase in wages and salary by the government was the main reason for increasing wages and salary cost in public sector textile mills.

Thus efforts should be made at all levels by BTMC mills to reduce cost of production especially wages and salary cost, material cost and to control power and fuel cost. The management of public sector Mills-A_{10}, A_9, A_5 and A_6 as well as of private Mills-B_1, B_3 and B_8 should be more serious to pull down their cost of production as far as possible. The importance of cost control and cost reduction can not be over emphasised in this regard.

Our further analysis of sales achievement of the cotton textile industry leads us to conclude that the sales achievement of the mills under private sector was superior as compared to their counterparts in public sector. The average net

sales went down during the second half of the study period in all the public sector mills and the overall trend taking all the public mills together was increasing up to 1990-91 but it was falling during 1994-95 to 1996-97. On the other hand, all the private sector mills could be able to increase their sales remarkably during the second half over the first half of the study period and the average net sales taking all the private mills as a whole showed a continuous increasing trend throughout the period. Our investigation through sales per employee also indicates a better efficiency of manpower in terms of sales in private sector mills as compared to public sector mills. Mill managers of public sector mentioned that smuggled yarn, high price of yarn poor marketing capability etc. affected their estimated sales during the period. Managers of the private sector mills also mentioned that high price of yarn and smuggled yarn affected their sales to a great extent.

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5

PROFITABILITY

5.0 INTRODUCTION

Profit is one simple and all-embracing index which has tremendous impact on morale of the enterprise itself. To the Financial Manager, profit is a test of organisational efficiency and a measure of control; to the creditors, it is margin of safety; to the employees, it means sources of fringe benefits and wage rise; to the Government, it is a measure of taxable income and the basis of legislative action; to the customers, demand for price cut, and finally to the country, profit is an index to economic progress, national income generated and rise in the living standard. A business enterprise can discharge its obligations to the various interested segments of the society mainly through profit. Profit is therefore, a useful intermediate beacon towards which capital employed should be directed[1].

The owner and management of a firm are interested in its financial soundness. The owners invest their funds in the firm with a reasonable expectation of return at least. Similarly, management of a firm is naturally eager to measure its operating efficiency. The operating efficiency of the firm and reasonable rate of return on owner's capital ultimately depend on the profit earned by it. Therefore, the crucial importance of profits of a firm can not be overemphasised.

5.1 TOOLS FOR MEASURING PROFITABILITY

Measurement of profitability is an important guide to management for taking policy decisions required under different circumstances. The profitability of a firm can be measured in terms of different components of income statements and balance sheet. According to Block and Hirt, "The income statement is a major device for measuring the profitability of a firm over a period of time"[2]. Profitability ratio even otherwise is considered an important criterion for judging

performance of an enterprise whatever in the public sector or private sector. In the words of Schall and Hally[3], "Profitability ratios measure the success of the firm in earning a net return on sales or on investment. Since profit is the ultimate objective of the firm, poor performance here indicates a basic failure which, if not corrected over too long a time, would probably result in the firms going out of business". According to Van Horne[4], "profitability ratios are of two types: those showing profitability in relation to sales and those showing profitability in relation to investment. Together, these ratios indicate the firm's efficiency of operation.

Profitability ratios related to sales are based on the principle that, an enterprise should earn sufficient profit on each taka of sales. If adequate profits are not earned on sales, there arises difficulty in meeting the operating expenses and the interest burden and remains no surplus for the owners. These ratios consist of (i) profit margin (gross and net) and (ii) expense ratios or operating ratios. Profit margin, as profitability ratio, measures the relationship between profit and sales and a high profit margin ratio is a sign of good management. Expenses ratio is the test of the operational efficiency with which the enterprise is being carried out.

Profitability ratios related to investments are widely termed as 'Return on Investments'. Three different concepts of investments which are commonly used in financial literature are: assets, capital employed and share holders' equity. Based on each concept, there are three broad categories of return on investment. They are: (a) return on assets, (b) return on capital employed, and (c) return on shareholders' equity. Return on assets is computed to measure the productivity of the assets while return on capital employed is used for evaluating the efficiency of internal management. Return on shareholders' equity is calculated for judging the income from shareholders' point of view[5]. The evaluation of profitability in terms of investment is essential since the investors desire a satisfactory return. Moreover, inadequate returns threaten the very survival of the enterprise.

The main ratios relating to sales and investment are as under:

Gross Profit Margin:

The first profitability ratio in relation to sales is the gross profit margin. The ratio of operating profit to sales is the gross profit margin and is estimated as :

$$\text{Gross Profit Margin} = \frac{\text{Sales} - \text{Cost of goods sold}}{\text{Sales}}$$

$$= \frac{\text{Gross profit}}{\text{Sales}}$$

It is used as an indicator of the efficiency of the production operations through the relationship between production costs and selling price. This ratio indicates the average spread between the cost of goods sold and the sales revenue. A higher ratio is an indication of the higher operating efficiency of the enterprise and the better utilisation of resources. A low ratio, on the contrary, would mean a poor financial planning and low efficiency. Analysis of the rise or fall in this ratio is of vital importance to a business. A rise reflects favourably on the efficiency of the management, a fall shows a red light—a fall in efficiency which may be the direct result of increase in cost of production, decrease in sales price, misappropriation and many other traceable and avoidable losses.

Net Profit Margin:

This ratio is important as it reflects the total net performance (all influences operating and non-operating as well as taxes having been considered) of an enterprise. This ratio links net profit to sales and therefore, measures profit per unit of sales value. Net profit is obtained when operating expenses, interest and taxes are subtracted from the gross profit. The net profit margin ratio is measured as:

$$\text{Net Profit Margin} = \frac{\text{Profit after tax (PAT)}}{\text{Sales}}$$

If the non-operating income figure is substantial, it may be excluded from PAT to see profitability arising directly from sales. This ratio is the overall measure of the firms ability to turn each taka of sales into net profit. An enterprise can not achieve satisfactory return on owners' equity in case the net margin is not adequate.

Operating Expenses Ratio :

The operating expense ratio is an important ratio that explains the changes in the profit margin (EBIT to sales) ratio. This ratio is computed by dividing operating expenses viz., cost of goods sold plus selling expenses and general and administrative expenses (excluding interest) by sales:

$$\text{Operating Expense Ratio} = \frac{\text{Operating Expenses}}{\text{Sales}}$$

A higher operating expense ratio is unfavourable since it leaves a small amount of operating income to meet interest, dividends, etc.

Return on Investment (ROI) :

The profitability can be measured by putting the profits in relation to investment. The term investment may refer to total assets or net assets. The fund employed in net assets is known as capital employed. Capital employed is equal to net worth plus total debt. The conventional approach of calculating ROI is to divide PAT by investment. Investment represents pool of funds supplied by shareholders and lenders, while PAT represents residue income of shareholders;

therefore, it is conceptually unsound to use PAT in the calculation of ROI. Also PAT is affected by capital structure. Since taxes are not controllable by management and since firms opportunities for availing tax incentives differ, it may be more prudent to use before tax measure of ROI. Thus, returns on investment is measured as:

$$\text{Return on Investment} = \frac{\text{Earning Before Interest and Tax (EBIT)}}{\text{Total Assets}}$$

Return on Capital Employed :

Capital employed is used by different authorities in different ways. In the words of Anthony, "Return on net capital employed looks at income in relation to the total of the permanent funds invested in the enterprise. These permanent funds consist of shareholders' equity plus non-current liabilities or the same figure may be found by subtracting current liabilities from total assets"[6]. Thus, net capital employed consists of total assets in the enterprise less its current liabilities. The term 'return' signifies operating profit before interest and taxes. The ratio is thus expressed as:

$$\text{Return on Capital Employed} = \frac{\text{Net Profit Before Interest and Taxes}}{\text{Net Capital Employed}}$$

A higher ratio is a test of better performance and a low ratio is an indication of poor performance. The ratio is more appropriate for evaluating the efficiency of internal management. It enables the management to show whether the funds entrusted to enterprise have been properly used or not.

In the present study we have adopted the net capital employed which has been computed by subtracting current liabilities from total assets. The value of the total assets has been considered as the total of the assets side of the balance sheet.

Return on Shareholders' Equity :

A return on shareholders' equity is calculated to see the profitability of the owners' investment. The shareholders' equity or net worth will include share capital, share premium and reserves and surplus less accumulated losses. Net worth can also be found by subtracting total liabilities from total assets. The net profits after taxes represent their return. Return on shareholders' equity is net profit after taxes divided by shareholders' equity and can be expressed as .

$$\text{Return on shareholders' Equity} = \frac{\text{Net Profit after Taxes}}{\text{Net Worth}} = \frac{\text{PAT}}{\text{NW}}$$

ROE indicates how well the firm has used the resources of owners. The earnings of a satisfactory return in the most desirable objective of a business. The ratio of net profit to owners' equity reflects the extent to which this objective has been accomplished.

Return on Paid up Capital :

Paid up share capital is the amount of funds directly contributed by shareholders by purchasing the shares of the company. Return on paid up capital is expressed as :

$$\text{Return on Paid up Capital} = \frac{\text{Net Profit after Tax}}{\text{Paid up Share Capital}}$$

This ratio has been used in our analysis to judge the profitability from the shareholders' point of view.

Table 5.1: Gross Profit Margin of the Selected Cotton Textile Mills in Bangladesh.

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	Change over 5 years	1992-93	1993-94	1994-95	1995-96	1996-97	Change during the decade
PUBLIC SECTOR	A_1	19.35	34.65	21.88	14.77	25.57	+6.22	3.83	(10.80)	(4.71)	(24.85)	(63.50)	-82.85
	A_2	25.35	29.33	23.56	17.53	17.06	-8.29	0.00	2.50	1.65	(17.40)	(67.74)	-93.09
	A_3	8.83	18.93	17.43	10.01	16.35	+7.52	13.25	1.50	(5.51)	(7.19)	(100.65)	-109.48
	A_4	7.20	21.85	12.50	1.11	10.61	+3.41	(3.98)	(20.60)	(1.57)	(5.27)	(43.93)	-51.13
	A_5	0.63	13.61	4.21	(0.11)	5.62	+4.99	(12.26)	(33.12)	(12.76)	(21.61)	(112.38)	-113.01
	A_6	1.63	14.38	6.73	(6.51)	5.03	+3.40	(6.70)	(21.26)	(10.15)	(44.09)	(142.13)	-143.76
	A_7	1.04	13.62	15.64	7.45	16.37	+15.33	0.14	(19.03)	(4.67)	(9.94)	(33.13)	-34.17
	A_8	14.10	11.53	8.67	(0.45)	5.62	-8.48	(5.23)	(18.39)	(5.92)	(15.66)	(130.24)	-144.34
	A_9	9.26	14.38	2.96	(6.95)	(3.93)	-13.19	(20.51)	(27.38)	(26.01)	(38.44)	(177.73)	-186.99
	A_{10}	(19.68)	(3.21)	(3.74)	(22.82)	(33.23)	-13.55	(20.97)	(26.11)	(17.45)	(87.40)	(541.47)	-521.79
	Ave	6.67	16.91	10.98	2.05	6.51	-0.16	(5.24)	(17.31)	(8.71)	(27.19)	(141.29)	-147.96
PRIVATE SECTOR	B_1	9.48	8.20	8.65	9.08	9.01	-0.47	9.88	14.15	(7.82)	(5.17)	(0.70)	-10.18
	B_2	23.64	24.74	18.83	(2.28)	14.99	-8.65	11.52	11.80	16.49	16.17	16.00	-7.64
	B_3	24.32	31.66	28.11	21.81	17.08	-7.24	24.99	24.51	28.92	19.84	20.20	-4.12
	B_4	22.38	22.61	21.84	19.66	16.26	-6.12	13.27	11.40	10.52	8.98	9.25	-13.13
	B_5	-	-	NA_1	8.20	13.59	+5.39	12.75	13.54	13.12	0.73	0.51	-7.69
	B_6	-	-	24.50	25.72	23.06	-1.44	18.61	19.69	19.03	6.64	12.67	-11.83
	B_7	-	-	10.94	20.50	26.15	+15.31	22.55	21.59	23.01	24.26	26.03	+15.09
	B_8	-	-	29.03	31.73	24.42	-4.61	29.45	21.77	17.56	15.50	13.62	-15.41
	B_9	-	-	-	-	NA_1	NA_2	14.33	28.46	28.91	21.50	19.48	+5.15
	B_{10}	-	-	-	-	NA_1	NA_2	31.30	41.47	30.12	23.85	23.94	-7.36
	Ave	19.96	21.80	20.28	16.80	18.07	-1.89	18.87	20.84	17.99	13.23	14.10	-5.86

Source: Compiled from Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production,

ii) NA_1= Not Available; NA_2= Not Applicable,

iii) Figures in brackets indicate negative margins.

iv) Minus indicates negative change.

5.2 ANALYSIS OF PROFITABILITY OF COTTON TEXTILE INDUSTRIES UNDER STUDY

In evaluating the profitability of cotton textile industries in Bangladesh, the ratios relating to both sales and investments as discussed in the preceding section have been used which have also been used fully or partially by Dave N. V., Rao, N., Verma, B. L. and others in their studies. The ratios are also used by BPE and Auditor and Comptroller General of India for the evaluation of profitability performance.

5.2.1 Profit Margins :

The very first measure of profitability is, as mentioned earlier, the profit margin. Hence, the ratios relating to profit margin of the textile mills under study during the period from 1987-88 to 1996-97 are presented in the Table-5.1. and Table-5.2.

Gross Profit Margin : An analysis of the figures presented in Table-5.1 indicates that Mill-A_1 had impressive gross profit ratio during 1987-88 to 1988-89. Its ratio declined in the following two years with a significant improvement in 1992 changing the ratio by 6.22% over the first five years. After having a very small positive result, it began to suffer huge losses and its negative ratio reached up to (63.50%) in 1996-97 with a change by –82.85% over the decade.

Among the ten mills under public sector, Mill-A_2 started with the highest gross profit ratio in 1987-88. Showing some improvement in the following year, its downward process started from 1989-90 and the ratio fell down to just 0.00%. With a slight improvement in 1993-94 and 1994-95, the negative ratio became (67.74%) showing a change of –93.09% over the period of study.

For Mill-A_3, gross profit ratio had decreasing trend after 1988-89 with a good rise in 1991-92 and the same is true for Mill-A_4 with a slight improvement in its negative results in 1994-95. Their changes over the first five-year showed 7.52% and 3.41% respectively and over ten years the changes showed –109.48% and –51.13% respectively.

Starting with a very low percentage Mills-A_5, A_6 and A_7 improved their gross profit ratio widely. The ratio for Mills-A_5 and A_6 became negative year by year except in 1991-92 with slight improvement in their negative results in 1994-95. Their changes during the first five years were 4.99% and 3.40% and during ten years of study the changes showed –113.01% and 143.76% respectively. While in the case of Mill-A_7, a gradual improvement was observed during the first five years with some decrease in 1990-91. Although the ratio for Mill-A_7, increased by 15.33% at the end of first five years, the ratio fell down to negative (33.27%) in 1996-97 changing the ratio by –34.17% over the ten years.

Gross profit ratio had also been decreasing throughout the study period for Mills-A_8 and A_9 with two or three exceptions for both of them. The changes showed only –8.48% and –13.19% respectively over the first five years but the change reached up to –144.34% and –186.99% over the ten years. A_{10} is the only mill, which could not be able to show any positive result throughout the study period. Percentage differences in gross profit ratio varies in both direction in its negative results and the change –13.55% over the first five years stood –521.79% over the ten years of study period.

On the other hand, almost all the textile mills under private sector had impressive gross profit ratio in most of the years. Only Mill-B_1 suffered losses in 1994-95, 95-96 and 96-97 and its ratio became negative in these years. The same was true for in Mill-B_2 in 1990-91. Mill B_5 was although having positive gross profit during the year after commencement of production, its condition was dissatisfactory than that of others and it was alarming in the last two years.

Considering the change, we found that changes got not stability in case of all the mills. They moved in both directions with some differences. Over the first five years the changes for Mills-B_1, B_2, B_3, B_4, B_6 and B_8 were ranging from –0.47% to –8.65% and in case of Mills-B_5 and B_7 the change were 5.39% and 15.31% respectively. The changes over ten years for Mills-B_1, B_2, B_3, B_5, B_8 and B_{10} were ranging from –4.12% to –15.41% and for Mills-B_7 and B_9 the changes were 15.09% and 5.15% respectively.

From the foregoing analysis it is clear that almost all the mills under public sector suffered gross losses over the last five years. The condition was endangered in cases of Mills-A_3, A_6, A_8, A_9 and A_{10}. During the last two years change showed decreasing trend at increasing speed in case of all the mills. The gross loss ratio was the highest for Mill-A_{10} and the lowest for Mill-A_7 in 1996-97. All the mills were not able to show positive results to meet up their operating expenses. On the other hand, under private sector, almost all the mills showed impressive gross profit ratio over the study period. The gross profit ratio was the highest in case of Mill-B_7 and the lowest in case of Mill-B_5 in 1996-97. The public sector average gross profit margin ranged between 16.91% and (141.29%) as against the range between 13.23% and 21.80% in private sector.

Net Profit Margin : The analysis of data presented in Table-5.2 showed that Mill-A_1 was having 14.16%, 32.32% and 17.42% net profit ratio in the first three years, the highest among the ten mills but there after its condition was deteriorating year by year with some improvement in 1991-92. The change over the first five-year was 10.66% and over the last ten years, it was –104.71%.

In case of Mill-A_2, net profit ratio improved in the second year but subsequently declined sharply over the next three years. The ratio also deteriorated over the last five years with slight improvement in 1993-94 and 1994-95. The change in ratio was –4.23% over the first five years but –99.72% over ten years. Mill-A_3 started with negative (10.55%) net profit ratio in 1987-88,

Table-5.2: Net Profit Margin of the Selected Cotton Textile Mills.

(in percentage)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	Change over 5 years	1992-93	1993-94	1994-95	1995-96	1996-97	Change during the decade
PUBLIC SECTOR	A_1	14.61	32.22	17.42	12.17	25.29	+10.68	0.25	(16.62)	(19.35)	(39.40)	(90.10)	-104.71
	A_2	12.15	23.42	17.19	12.06	7.92	-4.23	(9.07)	(3.23)	(4.92)	(30.65)	(87.57)	-99.72
	A_3	(10.55)	6.00	7.71	1.39	8.96	+19.51	5.13	(10.67)	(16.36)	(23.91)	(152.27)	-141.72
	A_4	(0.28)	13.05	(2.70)	(12.04)	(4.91)	-4.63	(34.71)	(40.69)	(21.00)	(24.39)	(77.88)	-77.60
	A_5	(7.00)	2.97	(4.42)	(7.06)	(4.69)	+2.31	(31.03)	(54.56)	(33.66)	(40.79)	(183.37)	-176.37
	A_6	(6.70)	4.80	0.81	(24.54)	(16.17)	-9.47	(38.18)	(50.29)	(36.83)	(86.99)	(237.79)	-231.09
	A_7	(11.05)	3.99	(0.21)	(10.66)	(15.09)	-4.04	(23.59)	(50.13)	(27.55)	(35.75)	(76.64)	-65.59
	A_8	(1.95)	(4.08)	(5.65)	(13.59)	(13.66)	-11.71	(38.92)	(48.43)	(19.97)	(33.10)	(194.30)	-192.35
	A_9	(24.95)	(14.24)	(27.43)	(33.42)	(92.34)	-67.39	(58.46)	(64.81)	(77.34)	(90.84)	(317.66)	-292.71
	A_{10}	(46.45)	(31.78)	(25.29)	(51.98)	(108.67)	-62.22	(53.19)	(49.33)	(38.37)	(138.63)	(774.82)	-728.37
	Ave	(8.22)	3.64	(2.26)	(12.77)	(21.34)	-13.12	(28.18)	(38.88)	(29.54)	(54.44)	(219.24)	-211.02
PRIVATE SECTOR	B_1	0.30	0.28	0.24	0.10	(3.49)	-3.79	(5.28)	(1.16)	(0.08)	(14.50)	(8.69)	-8.99
	B_2	6.90	6.22	5.96	(17.61)	(10.11)	-17.01	2.16	(0.83)	9.32	7.94	3.40	-3.50
	B_3	5.44	5.07	4.18	(5.00)	(8.93)	-14.37	(3.52)	(4.35)	2.91	(0.81)	(0.15)	-5.59
	B_4	13.44	10.07	10.03	6.67	5.69	-7.75	4.85	4.53	3.63	2.37	2.20	-11.24
	B_5	-	-	NA_1	(46.85)	(26.89)	+19.96	(56.86)	(12.70)	(0.88)	(13.36)	(18.29)	+28.56
	B_6	-	-	0.77	4.62	5.35	+4.58	2.16	2.77	4.18	(1.29)	(21.44)	-22.21
	B_7	-	-	9.16	3.58	8.09	-1.07	5.97	7.63	8.72	7.08	8.13	-1.03
	B_8	-	-	4.05	4.51	1.75	-2.30	2.74	3.01	3.40	3.98	2.39	-1.66
	B_9	-	-	-	-	NA_1	NA_2	1.38	4.54	8.51	4.59	4.20	+2.82
	B_{10}	-	-	-	-	NA_1	NA_2	5.55	12.68	10.76	8.11	6.49	+0.94
	Ave	6.52	5.41	4.91	(6.25)	(3.57)	-10.09	(4.09)	1.61	5.05	0.41	(2.18)	-8.70

Source: Appendix-7 and Appendix-8.

Notes : i) '—' indicates the period before establishment and commencement of production.

ii) NA_1= Not Available; NA_2= Not Applicable,

iii) '( )' indicates negative ratio.

iv) 'Minus' indicates negative change.

showed some improvement in the second and the third years with the positive results and fluctuated up to 1992-93 but reverted back to its original level in 1993-94, and deteriorated sharply over the remaining three years. The ratio improved by 19.51% over the first five years but it declined by –141.72% during the ten years. For Mills-A_4, A_5 and A_7, the ratio remained negative throughout the study period except in 1988-89. In this year their ratio improved somewhat and became positive. Their changes were –4.63%, 2.31% and –4.04% respectively over the first five years and they reached at –77.60%, -176.37% and –65.59% respectively at the end of the study period. In case of Mill-A_6, the net profit ratio increased in the second year but declined steeply thereafter with some improvement in 1991-92 and 1994-1995. Although the changes in the ratio over the first five years was only –9.47% but it went up at –231.09% over ten years. The situation was quite unsatisfactory for Mills-A_8, A_9 and A_{10}. They were having negative net profit ratios for all the years under study. Their changes reflected an extreme deterioration over the period with only a few exceptions. The position of Mills-A_9 and A_{10} were the worst among the ten mills under public sector. They were having the highest negative net profit ratio in starting, after five years and at the end of the study period.

Our look into the private sector find that Mill-B_1 started with the smallest net profit ratio i.e., 0.30% among all the mills under private sector. Its condition was more deteriorating year by year with slight improvement in 1993-94 and 1994-95 in its negative results. For Mill-B_2 the net profit ratio had decreasing trend up to 1990-91 and the ratio became negative i.e., 17.61%. After having some improvement it became positive i.e., 2.61% in 1992-93 but subsequently declined in the next year turning to negative (0.83%); again the ratio improved significantly in 1994-95 but declined thereafter. After having some positive net profit ratio of 5.44%, 5.07% and 4.18% in the first three years, Mill-B_3 suffered losses and the ratio remained negative over the following years. Mill-B_4 started with 13.44% net profit ratio in 1987-88, the highest among the ten under private sector but it

deteriorated steadily year by year in its positive results. The condition was the worst in case of Mill-B_5, among the ten mills under private sector. Its net profit ratio remained negative all through the period and it was the highest in 1990-91 and 1992-93 i.e., 46.85% and 56.86% respectively. The changes for Mills-B_1, B_2, B_3 and B_4 were ranging from –3.79% to –17.01% over the first five years and over ten years the changes were ranging from +2.20% to –8.69%. In case of Mill-B_5 the change over the first two years was 19.96% and over seven years the change was 28.56%. For Mill-B_6 the net profit ratio fluctuated within 0.77% and 5.35%up to 1994-95 but declined thereafter and became negative in the last two years. Mill-B_7 was having 9.16% net profit ratio in 1989-90. It fell down in the next year and then fluctuated within 5.75% and 8.75% and stood at 8.13% in 1996-97, the highest among the ten mills. Mill-B_8 was also having positive net profit ratio all over the period but its ratio fluctuated within only 1.75% to 4.51%. The changes in ratio of Mills-B_6, B_7 and B_8 were 4.58%, -1.07% and –2.30% respectively in 1991-92 and the changes over the study period were –22.21%, –1.03% and –1.66% respectively. Mills-B_9 and B_{10} suffered no losses during five years of their existence. The net profit ratio of Mills-B_9 and B_{10} improved in the second and the third year but it declined thereafter. The changes in their ratios were 2.82% and 0.94% respectively in 1996-97 over 1992-93.

As it is clear from the above analysis, all the mills under public sector were loosing. Almost all the mills suffered from heavy losses during the last five years. The condition was more serious in case of Mills-A_9 and A_{10}. The government has decided to sell the mills immediately. On the other hand, the mills under private sector were in better position. Having been denationalised Mills-B_1, B_2, B_3 and B_4 recorded a perceptible improvement. Although Mills-B_1, B_3, B_5 and B_6 became loosing finally their negative ratios were very small as compared to that of the mills under public sector. Again even though Mills-B_4, B_7, B_8, B_9 and B_{10} were showing decreasing trend with a few exceptions they were making profit all through the period. But no mill under public sector became able to make any

Table-5.3: Operating Expense Ratio of the Selected Cotton Textile Mills

(in percentage)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	Change over 5 years	1992-93	1993-94	1994-95	1995-96	1996-97	Change during the decade
PUBLIC SECTOR	A_1	85.69	75.37	85.46	89.57	90.00	+4.31	102.79	116.76	219.57	137.37	182.24	+96.55
	A_2	81.14	77.02	84.19	89.69	95.96	+14.82	109.27	102.97	105.89	131.75	184.85	+103.71
	A_3	98.76	88.42	89.37	96.07	90.08	-8.68	94.54	109.41	114.34	117.97	234.23	+135.47
	A_4	99.44	85.38	94.84	105.64	96.53	-2.91	116.06	128.99	110.35	113.90	158.38	+58.94
	A_5	106.97	96.21	104.69	109.21	104.70	-2.27	127.11	151.82	129.84	136.40	257.47	+150.50
	A_6	103.39	92.71	98.71	112.12	100.36	-3.03	115.05	130.52	118.18	158.30	273.89	+170.50
	A_7	108.43	95.92	90.55	98.41	91.58	-16.85	106.06	128.13	158.66	100.80	127.18	+18.75
	A_8	94.59	97.58	99.89	104.61	108.15	+13.56	118.98	132.89	114.93	128.74	275.32	+180.73
	A_9	98.59	92.78	105.21	113.77	121.87	+23.28	128.74	136.98	137.99	150.32	309.74	+211.15
	A_{10}	128.10	110.06	110.51	131.91	158.85	+30.75	130.91	129.12	120.88	195.33	673.71	+545.61
	Ave	100.51	91.15	96.34	105.10	105.81	+5.30	114.95	126.76	133.06	137.09	267.70	+167.19
PRIVATE SECTOR	B_1	97.35	97.96	97.80	97.64	98.23	+0.88	99.19	90.55	96.13	110.53	106.58	+9.23
	B_2	86.04	98.34	105.27	119.16	107.89	+21.85	101.03	94.37	85.06	89.82	91.50	+5.46
	B_3	87.25	76.89	82.80	91.46	96.40	+9.15	88.58	89.75	85.46	93.70	93.43	+6.18
	B_4	81.37	80.96	81.63	84.81	87.83	+6.46	90.55	92.18	87.47	93.71	94.43	+13.06
	B_5	-	-	NA_1	99.48	114.08	+14.60	116.32	110.32	100.74	113.58	119.00	+19.52
	B_6	-	-	80.45	82.50	81.63	+1.18	85.65	83.71	83.94	97.00	92.21	+11.76
	B_7	-	-	94.42	83.93	79.10	-15.32	80.18	81.09	79.48	78.04	76.40	-18.02
	B_8	-	-	76.76	74.39	81.17	+4.41	80.02	84.90	88.05	90.13	92.20	+15.44
	B_9	-	-	-	-	NA_1	NA_2	90.13	94.06	78.18	86.09	84.70	-5.43
	B_{10}	-	-	-	-	NA_1	NA_2	72.42	62.46	74.19	80.25	80.70	+8.28
	Ave	88.00	88.54	88.45	91.67	93.29	+5.29	90.41	88.34	85.87	93.29	93.12	+5.12

Source: i) Appendix-7 ii) Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production,

ii) NA_1= Not Available; NA_2= Not Applicable.

iii) 'Minus' indicates negative changes.

profit during the last five years of the study period except one or two. The average net profit margin of all the public sector mills taken together varied between (2.26%) and (219.24%) during the study period except 1988-89 when the ratio was 3.64%; while the private sector average ratio ranged between 6.52% and (6.25%).

5.2.2 Operating Expense Ratio :

The operating expense ratio is a yardstick of operating efficiency. To get a comprehensive idea of the behaviour of operating expenses, variations in the ratio over a number of years should be studied. Thus the above ratio for a period of ten years ranging from 1987-88 to 1996-97 in respect of cotton textile industry in Bangladesh are presented in Table-5.3.

Normally, the operating ratio should low enough to leave a good figure of sales' earnings to give fare return to shareholders and to meet up other liabilities like interest and taxation. If the operating expense ratio is 90 percent, then it leaves net operating profit of 10%. The lower the operating ratio, the higher the margin of profit. Table-5.3 clearly indicates that in case of Mill-A_1, the operating expense ratio was satisfactory up to 1991-92 and the same was true up to 1990-91 in case of Mill-A_2. But after then they were having increasing trend with high rate during the remaining years. The change in ratio was +4.31% and +14.82% respectively over the first five years but at the end of the decade the changes reached at +96.55% and +103.71% respectively. Mill-A_3 in 1988-89, 1989-90, 1990-91, 1991-92 and Mill-A_4 in 1988-89 were having a satisfactory operating expense ratio and left a good sales earnings. In case of other years they were facing high expenses and left no operating profit. Their changes over ten years were +135.47% and +58.97% respectively. All the remaining mills were having operating expense ratio at higher than 90% during the first five years. In case of

Mills-A_9 and A_{10} the ratios were as high as 121.87% and 158.86% respectively in 1991-92. They all were to face high expenses over the second half of the study period and were showing increasing trend with a few exceptions. The changes also indicated a high rate of increase over the period under study.

On the other hand, among the mills under private sector, operating expense ratio of Mill-B_1 ranged between 97.25% and 98.23% for first five years but deteriorated over the remaining years except in 1993-94. In this year, the ratio improved and the net operating profit was 9.45%. Mill-B_2 started with 86.04% operating expense ratio but increased somewhat sharply during the second, third and fourth year. After then it improved in 1992-93 and 1993-94 and reverted back to almost its original level in 1994-95 but again deteriorated thereafter. Mill-B_3 was having a satisfactory operating expense ratio all through the period under study although the ratio was somewhat higher in 1991-92, 1995-96 and in 1996-97. Mill-B_4 was also having a good operating expense ratio over the first five years, but its ratio declined steadily over the second five years except a significant improvement in 1994-95. The condition was very serious in case of Mill-B_5 during ten years. Its ratio remained higher than 90% during the period and left no sales earnings over time except leaving a slight earning in 1990-91. Mill-B_6 had good operating expense ratio up to 1994-95 but the condition deteriorated in 1995-96 with some improvement in the last year. Mill-B_7 started with 94.42% operating expense ratio in 1989-90 and left a very small sales earnings, but showed a significant improvement for the remaining years in succession having the ratio lower than 85% in all the years. Mill-B_8 had the lowest ratios of 76.76% and 74.39% in 1989-90 and 1990-91 respectively but it gradually increased after then with a slight improvement in 1992-93. In case of Mill-B_9 the ratio was satisfactory during all the years except in 1993-94 and the ratio of Mill-B_{10} remained highly satisfactory during the same period. They could leave a good amount of sales earnings to give fair return to shareholders and to carry out interest and tax burden.

However, from the analysis (Table-5.3), it is observed that all the mills under public sector faced high expenses over the study period except a few of them in a few years of first half which wiped out their gross profit. The operating ratio of the selected mills remained higher than 90% except Mill-A_1 in the first year and Mill-A_2 in the first four years and the ratio went as up as 309.74% in case of Mill-A_9 and 673.71% in case of Mill-A_{10} in 1996-97. It was due to sales volume of the public sector mills declined in large amount with a significant increase in cost of production. The changes over times make the condition more clear and indicate the intensity of the problem. On the other hand, the condition of operating expense ratios of private sector mills were far better than that of public mills. After coming in private ownership Mills-B_2, B_3 and B_4 improved their condition and their operating expenses ratio remained more or less satisfactory with a few exceptions. The ratios of Mills-B_6, B_7, B_8, B_9 and B_{10} were also satisfactory with one or two exceptions and they could leave a good amount of operating profit. Their change also signifies the same thing. The public sector average ratio was 91.15% in 1988-89, being the lowest and 267.70% in 1996-97, being the highest; the respective figures were 85.87% and 93.29% in private sector.

5.2.3 Return on Investment :

The magnitude of the rate of return can be compared in relation to the investment in total assets by the cotton textile mills under study for the purpose of profitability analysis. The Table-5.4 presents the rate of return on investment in total assets of the textile mills under study.

The ROI in total assets of Mill-A_1 is 6.14% in 1987-88, it improved in the next year but declined again after then and became negative during the remaining years with a slight improvement in 1992-93 in positive terms. In case of Mill-A_2 the rate of return was good in the first three years, then it fell down and became

Table-5.4: Return on Investment of the Selected Cotton Textile Mills

(in percentage)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	Change over 5 years	1992-93	1993-94	1994-95	1995-96	1996-97	Change during the decade
PUBLIC SECTOR	A_1	6.14	10.37	6.79	(3.07)	(10.22)	-16.36	0.10	(8.54)	(3.80)	(7.83)	(10.90)	-17.04
	A_2	14.71	19.69	13.83	7.76	2.86	-11.85	(4.59)	(2.86)	(2.41)	(12.60)	(30.69)	-45.40
	A_3	1.23	13.01	14.41	5.10	22.52	+21.29	8.42	(10.26)	(12.09)	(23.06)	(61.31)	-62.54
	A_4	2.81	16.09	5.00	(5.59)	4.29	+1.48	(7.57)	(24.41)	(8.44)	(10.48)	(32.40)	-35.21
	A_5	13.23	9.87	(10.28)	(22.89)	(9.73)	-22.96	(41.63)	(85.40)	(54.88)	(64.96)	(110.85)	-124.08
	A_6	4.26	5.17	0.64	(6.55)	(0.12)	-4.38	(6.01)	(14.64)	(9.36)	(17.92)	(32.06)	-36.32
	A_7	(5.90)	3.15	4.62	0.94	3.54	+8.55	(3.11)	(12.71)	(7.44)	(11.76)	(19.21)	-13.31
	A_8	5.01	2.21	0.21	(9.03)	(5.14)	-10.15	(12.88)	(23.61)	(21.73)	(28.36)	(63.37)	-68.38
	A_9	0.72	3.48	(1.59)	(4.92)	(3.63)	-4.35	(23.24)	(14.07)	(14.15)	(18.16)	(30.47)	-31.19
	A_{10}	7.71	3.53	(4.09)	(10.75)	(8.45)	-16.16	(20.89)	(16.90)	(12.43)	(25.74)	(31.26)	-38.97
	Ave	4.99	8.66	2.95	(4.90)	(0.41)	-5.40	(11.14)	(21.34)	(14.67)	(22.09)	(42.25)	-47.24
PRIVATE SECTOR	B_1	1.23	1.36	1.69	1.29	(0.43)	-1.66	(0.34)	3.98	2.44	(5.52)	(2.86)	-4.09
	B_2	14.28	5.06	3.75	(2.99)	(1.79)	-16.07	2.58	1.96	8.22	5.01	1.48	-12.80
	B_3	2.93	3.76	6.29	0.96	1.00	+1.93	3.91	2.56	8.94	5.31	4.87	+1.94
	B_4	17.87	14.17	17.17	14.27	11.71	-6.16	8.38	7.58	9.06	6.78	4.47	-13.40
	B_5	-	-	NA_1	(0.41)	(6.57)	-6.16	(8.09)	(7.43)	(0.55)	(17.13)	(7.22)	-6.81
	B_6	-	-	3.51	8.36	8.19	+4.68	5.53	8.37	9.30	1.99	4.61	+1.10
	B_7	-	-	2.69	10.33	12.34	+9.65	13.63	11.27	11.99	10.24	11.05	+8.36
	B_8	-	-	11.27	13.42	11.44	+0.17	12.04	12.79	15.45	11.17	8.31	-2.96
	B_9	-	-	-	-	NA_1	NA_2	2.69	9.56	11.21	8.71	12.33	+9.64
	B_{10}	-	-	-	-	NA_1	NA_2	10.06	15.98	9.45	5.61	4.39	-5.76
	Ave	9.08	6.09	6.62	5.65	4.49	-4.59	5.04	6.66	8.55	3.22	4.14	-4.94

Source: Compiled from Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '–' indicates the period before establishment and commencement of production, ii) NA_1= Not Available; NA_2= Not Applicable, iii) '( )' indicates negative ratio. iv) 'Minus' indicates negative change.

also negative in the remaining years and reached as low as (30.69%) in 1996-97. The rate of return of Mills-A_3 and A_4 were insignificant in financial terms in 1987-88. Return of Mill-A_3 had been improving very fast with some decrease in 1990-91 and during 1991-92; the remarkable improvement in its return from 1.23% during 1987-88 to 22.52% in 1991-92 was really appreciable; but after then its return deteriorated very fast and became negative from 1993-94. In case of Mill-A_4, a remarkable increase was observed in 1988-89 but subsequently declined somewhat steeply and became negative of (5.59) in 1990-91. Although the mill became able to earn an insignificant return in 1991-92 but after then it was incurring losses and its loss was as high as (32.40%) of the total investment in 1996-97. For Mill-A_5, return was good in the first five years, then it fell down and became negative from the subsequent years. Not only that its negative return showed a decreasing trend at increasing rate with one or two sudden breaks. It incurred the highest losses i.e., (64.96%) and (110.85%) of the total investment in the last two years. After having an insignificant return up to 1989-90. Mills-A_6 and A_8 incurred losses and their return became negative over the remaining seven years. Mill-A_7 started with negative return in 1987-88, it improved somewhat but had to suffer from low return on its investment and its returns remained negative during the following years. Mills-A_9 and A_{10} were not fairing well as they were incurring losses over the last eight years after having an insignificant return in the first two years. Considering change, a gradual deterioration was observed in case of all the mills under public sector in almost all the years during the second half of the study period.

On the other hand, among the four denationalised mills, Mill-B_4 was earning good return on its investment during the first half of the period; but the ratio somewhat decreased and fluctuated over the last five years and finally it fell down at 4.47%. For Mills-B_1 and B_3 the returns were very low from the point of view of an investor as he could get an interest of around 8% per annum in Saving Bank Account of Post Office/ Bank and in case of Mill-B_1 the ratio remained

negative in 1991-92, 1992-93, 1995-96 and finally in 1996-97. Mill-B_2 had a good return on its investment of 14.28% in 1987-88, it declined in the next two years and became negative in 1990-91 and 1991-92, and then the ratio improved but remained insignificant returns over the last five years. Mill-B_5 was not fairing well as it was incurring loss all through the period and its condition was in the worst position among the ten mills under private sector. For Mill-B_6 return on investment was unstable and sometimes very low over the time. Mills-B_7 and B_8 were having good return on their investment except in 1989-90 for Mill-B_7 and in 1996-97 the return of Mill-B_8 was somewhat low i.e., 2.69% and 8.31% respectively. Mill-B_9 earned a good return in 1993-94, 1994-95 and 1996-97 as compared to that in 1992-93 and 1995-96. Mill-B_{10} also had a good return over the first three years but the ratio declined in last two years.

From the analysis of Table-5.4, it is observed that although some public sector mills enjoyed insignificant or low return and only three mills enjoyed a good return on their investment in some years of the first five years period but all the mills suffered from highly negative return on their investment over the last five-years of the study period. Changes also showed a wide deterioration in case of all the public mills over the last ten years with some exceptions where their negative return improved somewhat. Vis-à-vis private sector mills were in better position. Some mills enjoyed good return in almost all the years, some enjoyed good return during the first half but suffered from low return during the second half. Some mills enjoyed insignificant return on their investment with some exceptions where their return became negative. Only one mill suffered from negative return all through the period. The average ratio of public sector ranged between 8.66% in 1988-89 and (42.25%) negative in 1996-97 as against 9.08% in 1987-88 and 3.22% in 1995-96 in private sector.

5.2.4 Return on Capital Employed :

The net profit before interest and tax, as expressed as a percentage of capital employed, is the most important for studying the management efficiency of the enterprise. It is used to study the operational efficiency of the enterprise. It shows the earning capacity of the capital. The following Table-5.5 shows the rate of return on net capital employed of all the twenty cotton textile mills under study during the period 1987-88 to 1996-97.

From the perusal of Table-5.5, it is evident that the ratio of Mills-A_1 and A_4 was positive during the first three years of study period but turned to be negative during the remaining years except in 1992-93 for Mill-A_1 and in 1991-92 for Mill-A_4. In these years, their ratio improved and became positive again. Mill-A_2 had a good return on its capital employed during the first four years but the trend of decline was set since 1991-92 and its ratio remained negative during the last five years. Mill-A_3 started with a return of 3.46% but it improved to the extent of around 39% during the first half but in the year 1992-93, the declining trend was arrested and the ratio became negative in the following years. Its negative return rose to the extent of (715.06%) due to excessive decline in capital employed caused by the accumulated loss of P & L A/c. For Mills-A_5 and A_6 the ratio was negative owing to the negative capital employed in 1987-88. Mill-A_5 improved in 1988-89 but the ratio was very high because of very low capital employed. Its ratio became negative in the subsequent years and during 1990-91 to 1996-97 there was no consistency in the ratio due to negative capital employed as well as negative profit. In case of Mill-A_6 , the declining trend was arrested in 1989-90 and the ratio became negative from 1990-91 to the extent of (158.17%) in 1996-97. Its return also showed no consistency in 1994-95 and 1995-96. A_7 was the only mill who suffered a net loss of (26.76%) on capital employed in 1987-88. A mentionable improvement was observed up to 1991-92 with some decrease in 1990-91. But its ratio declined drastically and turn to be negative to the extent of (20.13%) and (36.64%) in 1992-93 and 1993-94 respectively. Inconsistency was

Table-5.5: Return on Capital Employed of the Selected Cotton Textile Mills

(in percentage)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	7.32	13.23	7.34	(3.18)	(10.66)	0.11	(8.81)	(3.89)	(11.74)	(18.11)
	A_2	17.51	22.14	15.77	9.12	3.43	(5.57)	(3.09)	(2.65)	(15.38)	(42.49)
	A_3	3.46	38.45	33.87	10.69	38.50	13.29	(21.83)	(13.74)	(44.86)	(715.06)
	A_4	9.83	47.22	6.25	7.16	5.48	(15.46)	(34.32)	(11.16)	(17.27)	(56.86)
	A_5	(113.85)	212.39	(177.39)	[284.67]	[48.70]	[59.54]	[34.80]	[16.74]	[24.26]	[26.56]
	A_6	(11.43)	11.63	1.02	(11.07)	(0.22)	(15.82)	(67.34)	[201.22]	[227.34]	(158.17)
	A_7	(26.76)	5.77	8.65	1.96	9.90	(20.13)	(36.64)	(28.08)	[38.21]	[237.52]
	A_8	7.81	4.09	0.42	(21.51)	(20.05)	(203.07)	(87.92)	(48.07)	[380.77]	[110.95]
	A_9	0.85	3.98	(2.03)	(7.87)	(9.89)	(370.29)	(20.92)	(25.43)	(33.43)	(83.96)
	A_{10}	13.35	8.75	(11.26)	(60.47)	[344.00]	[61.26]	(48.19)	(45.76)	(369.97)	[128.92]
	Ave	3.34	36.77	(11.74)	(7.84)	1.67	(61.69)	(32.91)	(17.93)	(49.27)	(107.47)
PRIVATE SECTOR	B_1	2.76	2.97	3.84	3.17	(0.60)	(0.44)	5.49	3.41	(8.36)	(4.04)
	B_2	144.41	7.61	5.89	(4.87)	(3.29)	4.79	3.30	13.22	6.82	2.12
	B_3	3.92	4.63	8.58	1.20	1.25	5.14	3.46	11.37	6.10	6.14
	B_4	30.11	25.61	27.86	23.57	19.54	13.37	11.76	14.93	10.66	6.16
	B_5	-	-	NA	(0.62)	(10.99)	(14.70)	(13.78)	(0.88)	(34.18)	(12.32)
	B_6	-	-	4.32	10.87	11.25	7.38	12.57	14.52	2.93	8.65
	B_7	-	-	2.95	13.45	14.87	19.48	14.74	16.76	13.30	17.15
	B_8	-	-	12.65	15.26	13.04	13.97	15.12	20.21	13.65	9.90
	B_9	-	-	-	-	NA	2.82	10.44	12.66	10.00	13.83
	B_{10}	-	-	-	-	NA	14.59	22.22	10.91	6.19	5.38
	Ave	45.30	10.21	9.44	7.75	5.84	6.64	8.53	11.71	2.71	5.30

Sources : i) Appendix- 9, ii) Annual Reports of BTMC and Member Mills of BTMA.

Notes: i) '—' indicates the period before establishment and commencement of production, ii) NA= Not Available; iii) '( )' indicates negative ratio. iv) '[ ]' indicates negative return on negative capital employed.

also observed during the last two years because of negative profit and negative capital employed. Mill-A_8 had an insignificant positive return during the first three years with declining trend, which remained negative thereafter. The negative ratio was as high as to the extent of (203.07%) in 1992-93 due to excessive decline in capital employed. It was only 0.85% for Mill-A_9 in 1987-88, went up to 3.98% in the next year and again fell down becoming negative in the following years. Its negative ratios declined more and more and to the extent of (370.29%) in 1992-93 due to very low capital employed. The ratio of Mill-A_{10} was positive during the first two years but turned to be negative in the next year and reached as high as (367.97%) in 1995-96 due to heavy loss burden in one side and excessive decline in capital employed on the other side. Its ratio also remained inconsistent in 1991-92, 1992-93 and in 1996-97.

In contrast, among the private sector mills, Mill-B_1 had a minimum return on capital employed during the first three years but it declined slight in 1990-91 and became negative in 1991-92 and 1992-93. After having some positive return Mill-B_1 again suffered from negative return in the last two years. Mill-B_2 started with a maximum return of 144.41% in 1987-88, due to very small capital employed, but eventually recorded a perceptible decline in 1988-89, the ratio fluctuated within 3.30% and 13.22% over the remaining years except in 1990-91 and 1991-92 when the ratio remained negative. In case of Mill-B_3 the ratio was positive all through the period and it showed some improvement during the last five years. Mill-B_4 enjoyed a good return of 30.11% in 1987-88. But downward trend began subsequently which took it to 6.16% in 1996-97 because of smaller operating profit and greater capital employed. The position was quite unsatisfactory all through the period in case of Mill-B_5. But there was impressive improvement in its negative return and it became only (0.88%) in 1994-95 but deteriorated sharply in the next year and negative ratio went up to (34.18%) which improved again significantly in the last year. For Mill-B_6 the ratio fluctuated between 2.93% and 14.52% and it was the highest in 1994-95. But in the case

Mill-B_7 the ratio increased continuously throughout the period except a slight decrease in 1993-94 and 1995-96 and its ratio reached at 17.15% in 1996-97 from 2.95% in 1987-88. Mill-B_8 was having impressive return on its capital employed ranging from 12.65% to 20.21% up to 1995-96 but showed some decrease in 1996-97 i.e., 9.90%. Mill-B_9 improved its positive ratio up to 1994-95 but the ratio fell down at 10.00% in 1995-96 which again went up to 13.83% in 1996-97. In case of Mill-B_{10} there was impressive improvement in 1993-94 to the extent of 22.22%; but after then a downward trend began, which took it to 5.38% in 1996-97.

The above analysis makes it clear that return on capital employed was low and unstable in case of all the mills under public sector except two or three and was negative also in some years during the first half. But during the last half of the period all the mills were showing negative return, except Mill-A_1 in 1992-93. In case of some mills, there was no consistency in the ratio because of negative profit and negative capital employed in some years of the period. This was the condition without considering interest and taxes, if we would consider the same, the ratio of public sector mills would show more serious condition. In case of private sector mills the condition of Mills-B_1, B_2, B_3 and B_5 was not so better than that of public sector mills during the first half; but Mills-B_4, B_6, B_7 and B_8 were showing good ratios and better position. During the last half, all the private sector mills were enjoying positive return and they were showing better condition than that of public sector mills except Mills-B_1 and B_5. The average return on capital employed of all the public sector mills taken together was the maximum i.e., 36.77% in 1988-89 and the minimum i.e., negative (107.47%) in 1996-97 while in private sector the respective figures were 45.30% in 1987-88 and 2.71% in 1995-96.

5.2.5 Return on Shareholders' Equity :

The foregoing analysis reflects the profitability position of cotton textile industry in Bangladesh based on earning before interest and taxes. But the owners of the enterprises are interested in the net profit after tax and therefore, the

profitability should be indicated by relating the net profit after tax to the net worth and equity share capital. The Table-5.6 and 5.7 present the data about these variables.

As is clear from Table-5.6, the net surplus as a percentage of net worth or shareholders' equity improved from 1987-88 to 1988-89, and thereafter the ratio declined year by year in case of Mill-A_1. It was witnessed a negative return of (10.29%) in 1993-94 and (4.53%) in 1994-95 and the negative ratio increased to (33.49%) in 1996-97. In case of Mill-A_2, the return on net worth improved considerably from 15.40% during 1987-88 to 26.02% during 1988-89. The declining trend of its net profit as a percentage of net worth during the following years was steepened because of reducing net surplus and the ratio became negative from 1992-93. For Mill-A_3, the return was highly negative due to huge net deficit during 1987-88. The ratio improved sharply and turned to be positive to the extent of 57.97% in 1989-90, but drastically fell down to 9.44% during 1990-91. After showing a significant improvement in 1991-92 it declined sharply in 1992-93 and the year that followed witnessed a negative return on net worth to a great extent due to large amount of net deficit. In case of Mill-A_4, the rate of return was negative during the year 1987-88, 1989-90, 1990-91 and 1991-92 and it was inconsistent during the second half of the period. For Mill-A_5, the return showed no consistency during the year except 1988-89 due to negative net profit and negative net worth, and this was true in case of Mill-A_6, during all over the period. The return on net worth was negative up to 1990-91 for Mill-A_8 and up to 1989-90 for Mill-A_7 except in 1988-89 where Mill-A_7 improved its ratio to 10.39% positive from (38.54%) negative. During the remaining years Mills-A_7 and A_8 showed no consistency in their ratios. Mills-A_9 and A_{10} witnessed negative return on net worth during 1987-88 but showed no consistency over the remaining years.

In the private sector, the return of Mill-B_1 was positive up to 1990-91 but they were very low, ranging from 0.15% to 0.44%; it turned to be negative thereafter to the extent of (35.60%) in 1995-96. For Mill-B_2, the return declined sharply

Table-5.6: Return on Shareholders Equity of the Selected Cotton Textile Mills

(in percentage)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	11.34	17.66	10.06	6.47	5.54	0.13	(10.29)	(4.53)	(19.02)	(33.49)
	A_2	15.40	26.02	16.31	10.79	4.08	(7.14)	(4.74)	(4.87)	(25.46)	(88.78)
	A_3	(123.38)	35.45	57.97	9.49	41.86	29.68	(222.08)	[116.69]	[62.53]	[56.63]
	A_4	(2.12)	41.29	(12.86)	(117.20)	(95.59)	[154.80]	[59.12]	[24.26]	[34.40]	[34.65]
	A_5	[119.49]	157.18	[14.27]	[20.92]	[11.62]	[31.44]	[29.91]	[16.30]	[19.98]	[24.02]
	A_6	[25.46]	[35.54]	[29.89]	[98.98]	[37.69]	[37.06]	[31.38]	[17.97]	[22.88]	[22.41]
	A_7	(38.54)	10.39	(4.36)	[201.90]	[105.53]	[62.63]	[47.06]	[24.26]	[25.15]	[23.49]
	A_8	(4.78)	(6.41)	(26.05)	(141.08)	[1503.72]	[93.93]	[41.44]	[29.62]	[22.49]	[31.44]
	A_9	(542.45)	[150.73]	[191.73]	[66.48]	[47.56]	[40.30]	[25.51]	[20.75]	[18.61]	[19.71]
	A_{10}	(196.01)	[702.00]	[79.36]	[21.94]	[36.66]	[32.66]	[25.58]	[15.66]	[20.67]	[18.20]
PRIVATE SECTOR	B_1	0.35	0.44	0.43	0.15	(4.70)	(6.60)	(2.66)	(0.29)	(35.60)	(12.50)
	B_2	56.37	2.47	2.80	(7.06)	(6.17)	1.46	(0.58)	9.35	6.57	1.87
	B_3	7.90	9.20	8.21	(9.14)	(21.87)	(9.83)	(12.54)	9.86	(3.54)	(0.42)
	B_4	30.43	17.95	18.99	12.40	10.61	10.56	9.90	8.91	4.69	3.60
	B_5	-	-	NA	[105.06]	[34.19]	[43.00]	[11.47]	[1.24]	[13.84]	[60.65]
	B_6	-	-	0.68	8.85	9.17	3.47	6.23	10.92	(4.18)	(145.33)
	B_7	-	-	12.06	6.23	13.92	13.34	10.67	13.02	12.08	15.13
	B_8	-	-	8.14	10.06	4.49	7.23	10.67	14.56	8.04	5.09
	B_9	-	-	-	-	NA	5.04	11.27	13.58	8.50	9.54
	B_{10}	-	-	-	-	NA	14.98	27.45	5.38	3.49	2.33

Sources : i) Appendix-8 ii) Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production.

ii) NA= Not Available. iii) '( )' Indicates negative return.

iv) '[ ]' Indicates the ratio of negative return on negative net worth.

from 56.37% during 1987-88 to 2.80% during 1989-90. It was negative during 1990-91, 1991-92 and 1993-94 and improved marginally in 1994-95 but declined again thereafter. Mill-B_3 started with 7.90% return during 1987-88, it increased in 1988-89 with slight decline in 1989-90 and became negative over the remaining years except in 1994-95 where a marginal improvement i.e., 9.86% positive return was visible. Mill-B_4 enjoyed 30.43% positive return during 1987-88 but thereafter, the trend of decline was visible except in 1989-90 where a slight improvement was shown. B_5, the only mill under private sector, the return of which showed no consistency over the period. For Mill-B_6, the years preceding to the year 1995-96 showed positive returns although it was very low during 1989-90 and 1992-93; the ratio became negative during 1995-96 and reached at the top i.e., (145.33%) negative finally. In case of Mill-B_7, the return was positive and comparatively stable all through the period varying from 6.23% to 15.13%. The return on net worth of Mill-B_8 was also positive over the period ranging from 4.49% to 14.56%. The return of Mill-B_9 improved from 5.04% in 1992-93 to 11.27% during 1993-94 and 13.58% during 1994-95. It declined in the year that followed and improved slightly finally. In case of Mill-B_{10}, the return on net worth was impressive during 1992-93 and 1993-94, it declined sharply in the next year and fell down to only 2.33% in 1996-97.

The above analysis leads to the conclusion that the profitability position of public sector textile mills in relation to net worth was very unsatisfactory except Mills-A_1, A_2 and A_3 which made a good return in some years and Mills-A_4 and A_5 made so in only one year during the first half, but during the last half, the condition was more serious. No mill became able to make any return on net worth except only Mill-A_3 made a good return and Mill-A_1 made a slight in 1992-93. Moreover, the return of Mills-A_4 to A_{10} showed no consistency during the last half of the period. This situation was also visible in some years of first half. On the other hand, profitability position in relation to the net worth of Mills-B_1, B_3 and B_6 were very unsatisfactory and required concrete effort on the part of management.

Table-5.7: Return on Paid up Share Capital of the Selected Cotton Textile Mills

(in percentage)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	=	=	=	=	=	=	=	=	(53055.00)	(69951.00)
	A_2	=	=	=	=	=	=	=	=	=	(2995.47)
	A_3	=	=	=	=	=	=	=	=	=	(3145.27)
	A_4	(8.55)	445.05	(92.95)	(465.75)	(204.85)	(806.20)	(1263.05)	(617.40)	(761.65)	(1453.95)
	A_5	(261.93)	119.57	(170.57)	(297.43)	(194.57)	(927.64)	(1144.14)	(784.43)	(1009.71)	(1544.64)
	A_6	(222.35)	178.25	31.95	(1288.70)	(948.20)	(1543.45)	(2201.00)	(1609.60)	(2214.10)	(2947.55)
	A_7	(355.50)	152.55	(22.95)	(1312.05)	(1467.10)	(3024.35)	(4580.75)	(3165.00)	(3823.60)	(4953.80)
	A_8	=	=	=	=	=	=	=	=	=	=
	A_9	=	=	=	=	=	=	=	=	=	=
	A_{10}	=	=	=	=	=	=	(66299.00)	(45911.00)	(70442.00)	(74135.00)
	Ave.	(212.08)	223.86	(63.63)	(840.98)	(703.68)	(1575.41)	(15097.59)	(10417.49)	(4199.34)	(2653.09)
PRIVATE SECTOR	B_1	15.00	19.19	18.69	6.13	(263.69)	(479.69)	(194.31)	(21.38)	(2883.75)	(2026.88)
	B_2	70.26	35.12	39.70	(99.90)	(87.33)	20.65	(7.55)	122.07	92.92	15.64
	B_3	96.41	63.33	58.84	(74.36)	(78.19)	(32.23)	(36.51)	30.77	(10.66)	(0.88)
	B_4	96.14	55.98	55.41	39.57	36.40	39.52	39.93	30.98	14.23	10.85
	B_5	-	-	NA	(2077.27)	(1027.24)	(2267.37)	(293.76)	(32.25)	(416.56)	(428.20)
	B_6	-	-	0.68	9.53	10.12	3.49	6.40	11.99	(3.94)	(55.83)
	B_7	-	-	13.57	8.71	17.02	16.32	27.17	28.02	29.91	34.71
	B_8	-	-	9.02	11.25	5.06	8.22	12.58	18.92	9.24	5.85
	B_9	-	-	-	-	NA	5.30	13.23	16.86	10.78	13.04
	B_{10}	-	-	-	-	NA	17.94	57.29	26.39	11.05	7.50
	Ave.	69.45	43.41	27.99	(272.04)	(173.48)	(266.79)	(37.55)	23.24	(314.68)	(242.48)

Sources : i) Appendix-7 ii) Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production.

ii) NA= Not Available. iii) '( )' Indicates negative ratio. iv) '=' Indicates the period of no paid up capital.

The position of Mill-B_7 was good and impressive. The return of the rest mills was not worth mentionable but they enjoyed a good return in some years of the study period. The overall position of private sector was better than that of public sector.

5.2.6 Return on Paid up Share Capital :

The historical data presented in Table-5.7 showed that the profitability as judged from the criterion of return on share capital of the selected public sector textile mills was not only unsatisfactory but also a matter of great concern. Mill-A_1 had no share capital up to 1994-95 and Mills-A_2 and A_3 had no share capital up to 1995-96 and thus they were no return on share capital. In the remaining year/ years, their ratios were very high due to very low share capital on the one hand and heavy losses on the other hand. The ratio of net surplus/ deficit to share capital was highly negative during the period under study except in 1988-89 in case of Mills-A_4 to A_7 and in 1989-90 in case of Mill-A_6. The reason for sharp deterioration in their return can be found out as the sharp increase of net deficit and low share capital. Mills- A_8 and A_9 had no share capital during the period under study but Mill-A_{10} had the same during 1993-94 to 1996-97 and its return was also very high in these years due to low share capital and heavy losses.

On the other hand, Mill-B_1 of private sector had a positive return up to 1990-91 which turned to be negative subsequently. Its negative return reached at (2883.75%), the highest among the ten mills. The return of Mill-B_2 were negative during 1990-91, 1991-92 and 1993-94. In between the years, its returns were good and impressive except in 1992-93 and 1996-97, where the returns decreased somewhat. Mill-B_3 earned the highest return up to 1989-90 but thereafter its return became negative because of continuous net deficit after tax. The sudden jump in the ratio during 1994-95 was seen on account of the sharp increase in the net surplus on the one hand and a constant position in share capital. The ratio again fell down and became negative in 1995-96, a slight improvement was seen in 1996-97. In case of Mill-B_4, the ratio of the net surplus/ deficit to share capital

was positive throughout the study period, but after 1993-94, the trend of decline was visible because of the dual effect of reducing of net surplus on the one hand and the increase of share capital on the other hand. The ratio was negative all over the period in case of Mill-B_5, the unit of the worst performance judged from this angle because of continuous losses during the period. Mill-B_6 showed a positive return but much lower up to 1994-95 followed by a decline to (3.94%) negative in 1995-96 and (55.83%) in 1996-97. Mill-B_7 had also a good and impressive return during all through the period and a trend of increasing was seen during the last half of the period. The ratio of net surplus/deficit to share capital was positive all over the period in case of Mills-B_8, B_9 and B_{10} also. But a gradual decrease was observed during the last two years in case of Mills-B_8 and B_{10}. Thus the above ratio clearly depicts the better profitability position of cotton textile mills under private sector than that of the mills under public sector, because all the mills except Mills-B_1 and B_5 had been earning better returns. Moreover, we also could find from annual reports of the private sector mills that a dividend of ranging 15% to 30% was declared on share capital during all the years in case of Mills-B_4; Mill-B_6 declared 7% to 10% dividend during 1990-91 to 1994-95; Mill-B_7 declared 10% to 25% dividend during 1992 to 97; Mill-B_8 declared 10% to 12.50% dividend during 1989-90 to 1995-96; Mill-B_9, declared 6% to 12.50% during 1993-94 to 1996-97, and Mill-B_{10} declared 5% to 20% dividend during 1995-96 to 1996-97. Mill-B_2 also declared 40% to 10% dividend during 1987-88 to 1989-90 and 1995-96 to 1996-97; and Mill-B_3 declared 30% dividend on share capital during 1988-89 and 1989-90 and 10% in 1994-95.

5.3 GRAPHICAL HIGHLIGHTS

Fig. 5.1 : Gross Profit Margin of the Cotton Textile Industry

(Source : Table-5.1)

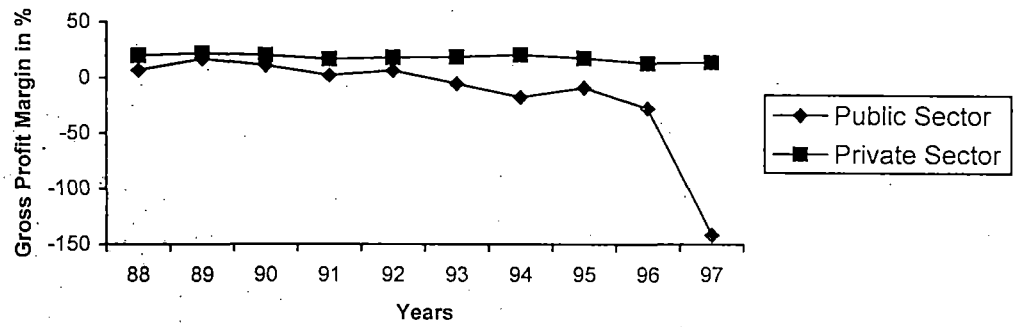

Fig. 5.2 : Net profit Margin

(Source : Table-5.2)

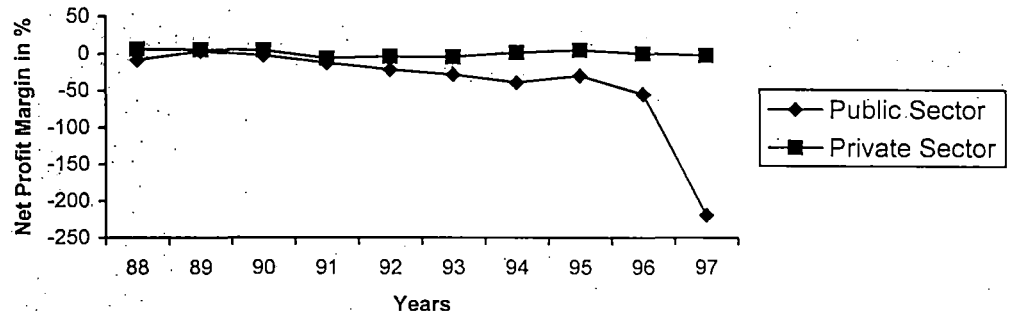

Fig. 5.3 : Operating Expense Ratio

(Source : Table-5.3)

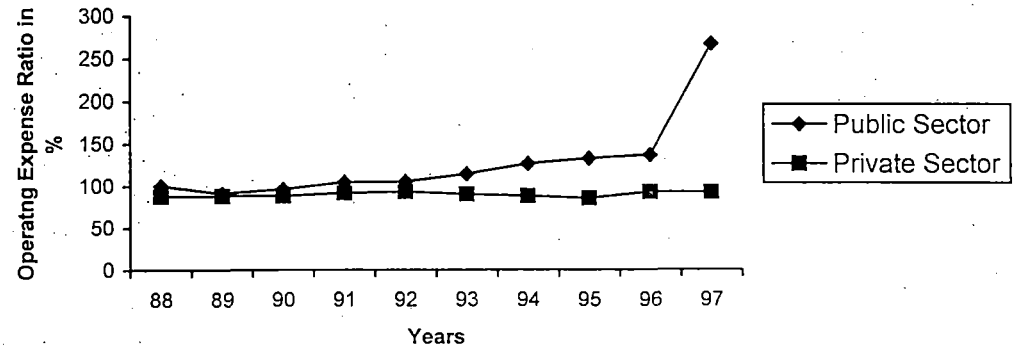

Fig. 5.4 : Return on Investment
(Source : Table-5.4)

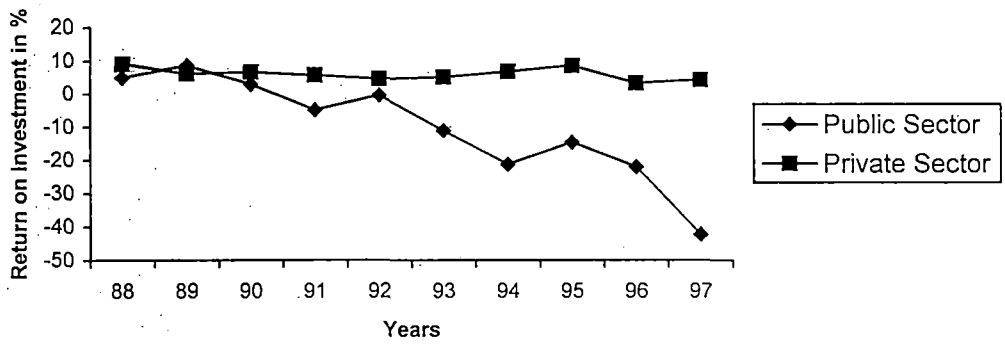

Fig. 5.5 : Return on Capital Employed
(Source : Table-5.5)

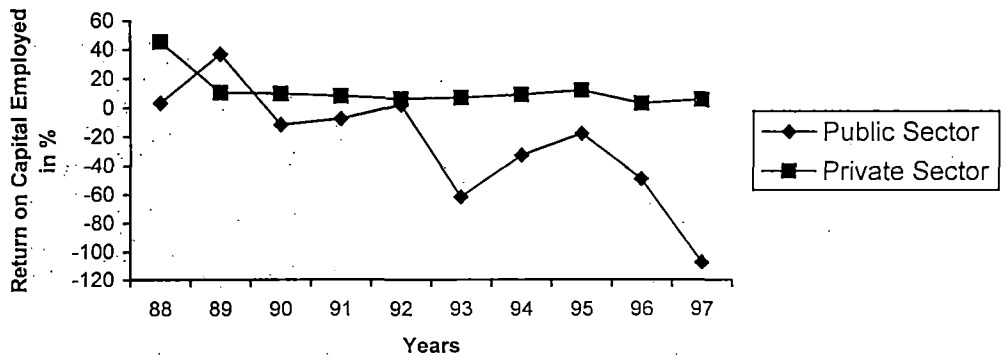

Fig. 5.6 : Net Profit After Tax
(Source : Appendix-8)

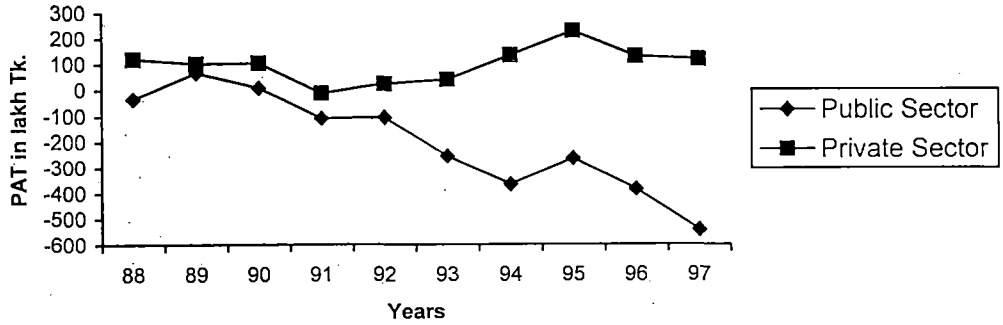

Table-5.8: Mean and t-Values of the Performance Indicators for Public and Private Sector : 1987-88 to 1996-97.

	Table No / Years & Parameters	P_1 5.1	P_2 5.2	P_3 5.3	P_4 5.4	P_5 5.5	P_6 5.6	P_7 5.7
PUBLIC SECTOR	1987- 88	6.77	(8.22)	100.51	4.99	3.34	(88.05)	(212.08)
	1988-89	16.91	3.64	91.15	8.66	36.77	28.16	223.86
	1989-90	10.98	(2.26)	96.34	2.95	(11.74)	4.11	(63.63)
	1990-91	2.05	(12.77)	105.10	(4.90)	(7.84)	(23.15)	(840.98)
	1991-92	6.51	(21.34)	105.81	(0.41)	1.67	(4.41)	(703.68)
	1992-93	(5.24)	(28.18)	114.95	(11.14)	(61.69)	2.27	(1575.41)
	1993-94	(17.31)	(38.88)	126.76	(21.34)	(32.91)	(23.71)	(15097.59)
	1994-95	(8.71)	(29.54)	133.06	(14.67)	(17.93)	(0.94)	(10417.49)
	1995-96	(27.19)	(54.44)	137.09	(22.09)	(49.27)	(4.45)	(4199.34)
	1996-97	(141.29)	(219.24)	267.70	(42.25)	(107.47)	(12.23)	(2653.09)
	X_1	(15.652)	(41.123)	127.847	(10.02)	(24.707)	(12.24)	(3553.934)
	SD_1	46.133	64.980	51.563	15.622	40.344	30.473	5149.021
	V_1	2128.243	4222.406	2658.746	244.056	1627.606	928.606	26512421.150
PRIVATE SECTOR	1987-88	19.96	6.52	88.00	9.08	45.30	23.76	69.45
	1988-89	21.80	5.41	88.54	6.09	10.21	7.52	43.41
	1989-90	20.28	4.91	88.45	6.62	9.44	7.33	27.99
	1990-91	16.80	(6.25)	91.67	5.65	7.75	2.66	(272.04)
	1991-92	18.07	(3.57)	93.29	4.49	5.84	0.68	(173.48)
	1992-93	18.87	(4.09)	90.41	5.04	6.64	0.68	(266.79)
	1993-94	20.84	1.61	88.34	6.66	8.53	6.04	(37.55)
	1994-95	17.99	5.05	85.87	8.55	11.71	8.53	23.24
	1995-96	13.23	0.41	93.29	3.22	2.71	0.01	(314.68)
	1996-97	14.10	(2.18)	93.12	4.14	5.30	(12.07)	(242.48)
	X_2	18.194	0.782	90.098	5.954	11.343	4.843	(114.293)
	SD_2	2.815	4.611	2.637	1.865	12.213	8.935	153.446
	V_2	7.926	21.258	6.954	3.479	149.154	79.833	23545.600
t-values		2.316*	2.106*	2.312*	3.211*	2.705*	1.701	2.112*

Notes: i) P = Performance Indicator; ii) * denotes significant at 0.05 level of significance.

5.4 MEAN AND 't' VALUES OF THE PERFORMANCE INDICATORS AND SIGNIFICANCE OF MEAN DIFFERENCES

The actual values, mean and t-values of the indicators used for evaluating profitability of public and private sector textile mills are provided in Table-5.8. The Table reveals that mean differences of six indicators are significant at 0.05 level of significance. These indicators are as under:

P_1 = Gross Profit Margin

P_2 = Net Profit Margin

P_3 = Operating Expenses Ratio

P_4 = Return on Investment

P_5 = Return on Capital Employed

P_7 = Return on Paid up Share Capital

The t-values of the above indicators are greater than the table value of t (2.101) at 0.05 level of significance. But the mean difference of shareholders' equity (P_6) is not significant at 0.05 level of significance.

5.5 SUMMING UP

From the analysis of profitability of cotton textile industry in Bangladesh during the study period from 1987-88 to 1996-97 through various ratios, it can be concluded that the profitability position of cotton textile mills under public sector is highly dissatisfactory, they are not running efficiently and they are financially sick. The situation is more serious during the second half of the study period. This is born out by the fact that all the public sector mills could not earn profit during this period with only a few exceptions. The other profitability ratios like net profit margin, return on investment, return on capital employed, return on shareholders

equity, and return on paid up capital were negative in all the public sector mills owing to heavy operating losses sustained by the mills during the second half of the study period. It is alarming that there was an overall increasing trend in negative profitability ratios in most of the cases. The higher average operating expenses ratio of all the public sector mills taken together showed their lower operating efficiency throughout the period as compared to their counterparts in private sector. The position of the Mills-A_1, A_2 and A_3 was somewhat better than the others. The management of the BTMC mills expressed opinion that the main causes of chronic losses of the mills is difficulty in reducing costs and attaining the estimated profits due to the absence of strict compliance with the estimated cost and revenue at various levels. They mentioned that idle capacity, increasing salary and wages determined by the government etc. increased the fixed costs per unit of the output.

The profitability performance of private sector mills was comparatively better and in some cases it was encouraging. Only in the case of Mill-B_1, negative profitability ratios was observed in some years and it was observed during all the years in case of Mill-B_5.

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6

WORKING CAPITAL MANAGEMENT

6.0 INTRODUCTION

Working capital management is a significant part of business decisions and is of major concern to a finance manager. Working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the inter-relationships that exist between them. Needless to say that the inefficient management of working capital not only reduces profitability, but ultimately may also lead a concern to a financial crisis. It is also known that while excessive working capital is undesirable as it causes adverse impact on profitability and makes management complacent, which degenerates, into managerial inefficiency. Inadequate working capital is equally unwarranted as it carries potential threat of holding production or sales operations of otherwise well managed business firms. Excessive working capital means unnecessary piling up of current assets. It leads to unremunerative use of scarce funds. Inadequate working capital refers to a situation, where the investment in current assets is less than the requirements. It is desirable that an organisation is expected to maintain an optimum level of current assets for maximum returns on investment[1]. In determining the optimum level of current assets, a firm has to consider the behaviouristic pattern of both profitability and solvency, as there is an inverse relationship between profitability and solvency. It is expected to make an attempt to balance the profitability-solvency tangle by minimising the total costs, i.e., the cost of liquidity and illiquidity. The firm is to maintain its current assets at that level where the sum total of these costs would be minimum.

Almost all the textile mills under the public sector have been incurring heavy losses year after year. Side by side, almost all the private mills have been making profit during the years under study as we found in the previous chapter. In order to find the actual reasons for such performance of the two sectors, it is necessary to analyse the efficiency or inefficiency in working capital management of the sample mills under study. This chapter deals with the analysis of overall

working capital position and the different components of working capital (viz., inventory, receivables and cash) of cotton textile mills under public and private sector in Bangladesh.

6.1 ANALYSIS OF GROSS WORKING CAPITAL OF THE COTTON TEXTILE INDUSTRY IN BANGLADESH

6.1.1 Size of Gross Working Capital :

The analysis of quantitative aspect referred to also as gross working capital, concerns with its size and its share in total assets. The size of gross working capital of cotton textile mills under public and private sector is given in Table-6.1.

It is quite evident from the Table that the gross working capital in all the public sector mills showed a fluctuating trend during the period of study. The average gross working capital of public sector mills increased from Tk 565.08 lakh in 1987-88 to Tk 603.25 lakh in 1996-97 registering a growth of 6.75%. The highest average gross working capital during the study period was Tk 2372.53 lakh in Mill-A_1, followed by Tk 1002.71 lakh in Mill-A_7, Tk 997.61 lakh in Mill-A_2, Tk 532.65 lakh in Mill-A_{10} and Tk 478.26 lakh in Mill-A_6. In the case of Mill-A_5, the average amount of gross working capital was lower i. e., Tk 154.87 lakh as compared to Tk 223.15 lakh, Tk 244.74 lakh, Tk 319.38 lakh and Tk 369.39 lakh in Mills-A_9, A_4, A_8 and A_3 respectively. The annual average growth rate was positive in nine mills while it was negative in one mill. Mill-A_3 had the highest AAGR i.e., 14.91% followed by Mill-A_4 having 12%.

In the private sector, the gross working capital showed a clear increasing trend in case of Mills-B_1, B_7 and B_{10} while in case of other mills an occasional fluctuation was observed during the period of study. The average gross working

Table 6.1 : Size of Gross Working Capital of Selected Cotton Textile Mills

[Figures in Lakh Taka]

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	AAGR
PUBLIC SECTOR	A_1	2618.00	3087.58	2490.07	1518.94	2315.24	1786.15	1934.65	2073.71	3133.16	2767.75	2372.53	4.898
	A_2	557.19	850.82	1003.46	1150.00	1251.19	1162.58	979.26	1119.43	1039.69	862.52	997.61	6.815
	A_3	208.98	322.32	331.77	297.96	366.97	420.53	330.58	798.69	327.16	288.97	369.39	14.914
	A_4	190.23	277.79	257.15	246.56	243.89	389.79	159.04	149.49	319.16	214.27	244.74	12.072
	A_5	187.88	155.58	150.42	151.21	186,97	205.02	121.70	124.14	143.57	122.25	154.87	-2.723
	A_6	379.86	481.69	462.30	450.32	492.41	656.75	501.37	491.82	541.79	324.30	478.26	0.818
	A_7	715.76	686.34	942.05	911.85	1270.24	1828.22	1132.92	902.01	781.62	856.11	1002.71	5.660
	A_8	172.72	264.01	328.53	323.88	442.72	490.35	418.20	224.92	321.37	207.10	319.38	7.746
	A_9	191.68	199.65	304.08	195.47	517.25	299.66	145.56	136.22	142.91	99.02	223.15	6.628
	A_{10}	428.46	517.65	586.34	466.77	980.48	894.63	485.62	346.29	330.11	290.17	532.65	2.645
	Ave	565.08	684.34	685.62	571.30	806.74	812.67	620.89	636.67	708.05	603.25	669.46	2.435
PRIVATE SECTOR	B_1	788.84	758.41	765.55	913.10	1210.04	1351.14	2023.86	2432.77	2524.17	2971.53	1573.94	16.890
	B_2	1066.57	1072.37	1227.09	853.88	1052.86	1011.00	1021.02	1056.20	1006.07	1400.22	1076.73	4.750
	B_3	721.49	954.41	1340.54	1047.53	1041.50	1363.99	1476.18	1544.58	1273.03	1947.89	1271.11	14.395
	B_4	1764.93	2539.92	1994.69	2260.59	1814.68	2075.76	2179.01	2591.06	3188.94	2433.76	2284.33	5.968
	B_5	-	-	NA	30.06	69.33	152.97	193.80	151.41	131.94	355.63	155.02	68.796
	B_6	-	-	356.65	523.08	516.83	731.41	1004.48	1166.84	1094.18	1000.15	799.20	17.952
	B_7	-	-	760.79	914.78	1348.62	2282.89	4405.56	6556.93	8738.14	12915.47	4740.40	51.404
	B_8	-	-	421.89	522.77	615.26	749.06	938.07	660.51	1262.59	983.48	769.20	18.291
	B_9	-	-	-	-	N A	274.31	490.39	571.14	676.17	534.34	509.27	23.163
	B_{10}	-	-	-	-	N A	2001.13	3104.52	5637.11	5862.30	7010.75	4723.16	40.075
	Ave	1085.46	1331.28	981.03	883.22	958.64	1199.37	1683,69	2236.86	2575.75	3155.32	1609.06	14.545

Source : Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production,
ii) NA= Not Available;
iii) Minus = Negative growth rate.
iv) AAGR = Annual Average Growth Rate.

capital of all the private mills taken together showed a continuous increasing trend since 1991-92. The same increased from Tk. 1085.46 lakh in 1987-88 to Tk. 3155.32 lakh in 1996-97 registering a growth of 190.69%. Considering individually, the highest average amount of gross working capital was Tk. 4740.40 lakh in Mill-B_7, followed by Tk. 4723.16 lakh in Mill-B_{10}, Tk. 2284.33 lakh in Mill-B_4, Tk. 1573.94 lakh in Mill-B_1, Tk. 1271.11 lakh in Mill-B_3 and Tk. 1076.73 lakh in Mill-B_2 while the lowest average gross working capital was Tk. 155.02 lakh in Mill-B_5 followed by Tk. 509.27 lakh, Tk. 769.20 lakh and Tk. 799.20 lakh in Mills-B_9, B_8 and B_6 respectively. The annual average growth rate was positive in case of all the private mills. Mill-B_5 had the highest AAGR i.e., 68.80% followed by Mill-B_7 having 51%.

6.1.2 Gross Working Capital to Total Assets :

Table-6.2 depicts that the average percentage of gross working capital to total assets in public sector mills varied from 33.43 to 48.65 during the period. It indicates a lower rate of investment in gross working capital as compared to total assets in the public sector mills and in some years it was very low. The average percentage of gross working capital to total assets during the period was in the range 50 to 70 in Mills-A_1, A_2 and A_5. Mills-A_3, A_4, A_6, A_7 and A_8 were having average gross working capital in the range 30 to 50 percent of total assets while it was disappointing i. e. only 13 and 21 percent in case of Mills-A_9 and A_{10} respectively. The annual average rate of growth was positive in seven mills but it was negative in three mills. Mill-A_3 had the maximum growth rate of 9.92%.

But in the private sector the average percentage of gross working capital to total assets in all the mills taken together was lower as compared of public sector mills during the period under study except 1987-88 and 1988-89. The rate varied

Table 6.2 : Percentage of Gross Working Capital to Total Assets.

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	AAGR
PUBLIC SECTOR	A_1	56.00	60.16	51.28	31.11	50.87	38.76	47.28	52.35	59.10	58.78	50.57	4.233
	A_2	37.63	49.89	55.80	60.74	63.89	63.33	60.69	65.54	65.50	62.69	58.57	6.340
	A_3	23.44	33.65	35.38	34.80	41.36	46.07	41.39	64.79	44.77	43.20	40.89	9.918
	A_4	67.40	43.91	34.21	33.01	29.31	39.46	22.01	22.14	39.76	31.99	36.32	-2.290
	A_5	71.15	67.88	64.11	66.12	73.08	77.67	68.96	71.04	75.19	73.52	70.87	0.579
	A_6	80.96	39.79	24.01	23.48	23.90	32.54	27.63	30.33	32.71	24.23	33.96	-8.685
	A_7	85.56	48.63	19.86	20.59	26.83	36.61	28.02	25.44	24.19	27.61	34.33	-6.148
	A_8	36.53	28.78	59.95	35.24	41.97	46.41	55.28	31.54	41.43	32.84	41.00	6.926
	A_9	11.70	12.86	15.89	10.84	25.77	16.35	9.21	10.11	11.40	8.56	13.27	6.313
	A_{10}	16.08	20.05	21.65	18.36	33.52	31.40	21.20	17.44	17.72	17.10	21.45	4.622
	Ave	48.65	40.56	38.21	33.43	41.05	42.86	38.17	39.07	41.18	38.05	40.12	-2.057
PRIVATE SECTOR	B_1	47.10	46.23	46.83	52.11	23.08	23.75	31.70	38.13	41.58	40.98	39.15	2.142
	B_2	86.05	33.99	37.32	28.18	34.18	33.18	35.25	34.46	23.31	26.85	37.28	-7.777
	B_3	33.21	33.86	40.45	31.29	31.59	36.77	39.08	40.62	36.37	46.95	37.02	4.997
	B_4	75.40	72.97	58.04	61.21	46.60	38.61	41.02	46.64	53.33	37.35	53.12	-6.101
	B_5	-	-	NA	2.36	5.57	12.56	17.63	16.37	15.29	17.11	12.41	50.005
	B_6	-	-	16.84	23.42	22.08	22.69	29.71	32.74	30.36	29.68	25.94	9.677
	B_7	-	-	13.88	15.30	14.55	22.60	29.18	35.02	28.36	35.37	24.28	16.497
	B_8	-	-	18.49	21.79	26.02	29.17	36.16	28.83	40.27	29.58	28.79	9.456
	B_9	-	-	-	-	N A	10.32	16.43	13.55	15.99	13.80	14.02	8.072
	B_{10}	-	-	-	-	N A	26.63	35.26	37.31	27.13	29.04	31.07	9.229
	Ave	60.44	46.76	33.12	29.46	25.46	25.63	31.14	32.37	31.20	30.67	34.63	-6.181

Source : Computed from Table-6.1 and Appendix-10.

Notes : i) '—' indicates the period before establishment and commencement of production,
ii) N A= Not Available; iii) Minus = Negative growth rate; iv) AAGR = Annual Average Growth Rate.

from 25% in 1991-92, being the lowest to 60% in 1987-88, being the highest. Individually, Mill-A_8 had the highest percentage of average gross working capital to total assets i. e. 53%; Mills-B_1, B_2, B_3 and B_{10} had the same in the range 30% to 40%. However, the same was very low ranging from 10% to 30% in case of Mills-B_5, B_6, B_7, B_8 and B_9. The annual average growth rate was negative in two private mills while eight mills had positive growth rate. Mill-B_5 had the maximum growth rate i.e. 50%.

Thus, the above analysis leads us to infer that public sector mills had higher rate of investment in gross working capital as compared of private sector mills. This is because of the fact that a large amount of capital work in progress was included in total assets of the private sector mills. But the actual picture would be clear when we go through the net working capital position of the textile mills under study.

6.2 ANALYSIS OF NET WORKING CAPITAL OF COTTON TEXTILE INDUSTRY IN BANGLADESH

According to the net working capital concept, current assets must exceed current liabilities and then only there can be working capital. On the other hand, if the current liabilities exceed the current assets, there is no working capital but there is a working capital deficit. This situation is also known as negative working capital. The net working capital should be increased if it is too small. In the words of Foulke, "If net working capital is too small, there are three solutions: (i) increase the net working capital by retained earnings in current assets, (ii) raise additional capital by the sale of stock or, in the case of proprietorships and firms, by the investment of additional cash funds, to be retained as current assets, and (iii) reduce the volume of business. Which solution or combination of solutions should be followed depends upon the circumstances and upon the ability of the

management to grasp the significance of a particular situation"[2]. For the purpose of working capital analysis of cotton textile industry in Bangladesh in this chapter, the net approach has been taken use of.

6.2.1 Size of Net Working Capital :

The size of net working capital of the selected cotton textile mills under public and private sector in Bangladesh has been presented in Table-6.3. This table portrays that the net working capital position in the public Mill-A_1 was good during the whole period of study except in the year 1996-97 when the amount of net working capital declined to as low as Tk. 892.89 lakh from Tk. 1365.51 lakh in the previous year. In Mill-A_2, the net working capital showed an increasing trend up to the year 1991-92, but thereafter it showed a decline in 1992-93, 1995-96 and 1996-97. But in Mills-A_3, A_4, A_7 and A_{10} there had been negative balances in the net working capital in most of the years under study. Mills-A_5, A_6, A_8 and A_9 also recorded a highly unsatisfactory position of net working capital during the whole period of study as they had no net working capital or rather had working capital deficits during the period. In Mill-A_5, the working capital deficit showed an increasing trend during the period 1989-90 to 1994-95 and in Mill-A_6 it showed the same during 1989-90 to 1995-96 while in the other cases the working capital deficit registered a fluctuating trend. The public sector average of net working capital was negative during all the years, except 1987- 88 and 1988-89. The yearly average net working capital during the period of study was negative in all the public sector mills except Mills-A_1 and A_2.

In contrast, the net working capital position was found to be better in private sector. The net working capital was negative up to 1991-92 in Mill-B_1 but it turned to be positive and showed an impressive increase up to 1995-96 followed by a decrease in 1996-97. Mills-B_2 and B_6 had working capital deficit in more

Table 6.3 : Size of Net Working Capital of Selected Cotton Textile Mills

[Figure in Lakh Taka]

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	AAGR
PUBLIC SECTOR	A_1	1866.00	1977.56	2129.12	1348.67	2124.21	1363.35	1811.29	1990.61	1365.51	892.89	1686.92	-2.731
	A_2	320.61	661.80	781.53	867.21	929.79	838.47	862.77	970.39	752.13	480.31	746.50	9.956
	A_3	(364.67)	(311.48)	(205.38)	(149.54)	(1.18)	86.01	(92.68)	650.34	(28.04)	(322.62)	(73.92)	-847.376
	A_4	(11.39)	(139.24)	107.23	83.04	40.31	(114.03)	(49.59)	(37.13)	3.40	(73.82)	(19.12)	-219.267
	A_5	(106.89)	(62.97)	(70.61)	(95.87)	(120.02)	(243.49)	(487.86)	(623.35)	(558.61)	(738.09)	(310.78)	31.640
	A_6	(264.01)	(191.21)	(268.56)	(332.81)	(391.28)	(594.66)	(918.64)	(1205.27)	(1244.78)	(743.06)	(627.03)	13.755
	A_7	63.66	45.80	(1267.77)	(1386.72)	(1174.09)	(2395.42)	(1507.48)	(1703.87)	(3166.85)	(2405.36)	(1489.81)	-306.695
	A_8	(140.66)	(156.50)	(145.83)	(209.18)	(341.57)	(499.25)	(271.92)	(165.85)	(512.24)	(783.61)	(322.66)	37.18
	A_9	(45.82)	4.88	(117.79)	(480.46)	(752.34)	(1384.64)	(371.91)	(461.46)	(429.43)	(638.34)	(317.26)	-242.578
	A_{10}	(697.58)	(1023.48)	(1138.84)	(1624.16)	(2016.09)	(2926.08)	(1002.16)	1100.04	1403.46	(1818.45)	(974.33)	-34.181
	Ave	61.93	80.52	(19.69)	(197.98)	(19.76)	(586.97)	(202.82)	(51.45)	(241.55)	(615.02)	(179.28)	441.788
PRIVATE SECTOR	B_1	(139.41)	(132.24)	(149.73)	(125.95)	(310.69)	17.49	287.18	829.16	1351.22	871.45	249.86	199.044
	B_2	(50.28)	14.97	33.63	(314.11)	(353.67)	(398.60)	(151.25)	(104.80)	(140.45)	(149.11)	(161.37)	-118.491
	B_3	174.31	424.08	458.44	374.71	383.42	474.12	497.11	732.59	819.07	1086.47	542.43	28.419
	B_4	653.88	986.45	677.94	805.16	255.62	69.41	293.67	407.03	1012.16	649.56	581.09	41.310
	B_5	-	-	NA	(386.43)	(418.75)	(382.30)	(300.37)	(179.59)	(286.04)	(491.62)	(349.30)	11.527
	B_6	-	-	23.47	69.55	(58.01)	(3.26)	(48.92)	(51.16)	(2.84)	(511.32)	(72.81)	2733.359
	B_7	-	-	288.27	(461.75)	(180.89)	(705.68)	897.37	1292.30	1724.13	7.41	357.66	-40.028
	B_8	-	-	231.77	234.59	326.49	393.38	538.03	154.89	735.43	499.62	389.29	52.740
	B_9	-	-	-	-	N A	158.07	247.89	243.26	154.25	132.28	187.15	1.030
	B_{10}	-	-	-	-	N A	(329.70)	633.34	3619.71	4003.40	2742.15	2133.78	39.631
	Ave	154.63	323.33	223.40	24.47	(44.56)	(70.38)	289.41	694.34	937.03	483.69	302.03	-69.583

Source : Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production,
ii) NA = Not Available; iii) '( )' indicates working capital deficit
iv) Minus = Negative growth rate; v) AAGR = Annual Average Growth Rate.

than half of the years while Mill-B_5 had the same all through the period. In the case of Mill-B_3, the working capital showed an increasing trend during the period except 1990-91, while it showed a declining trend since 1994-95 in Mill-B_9. In case of other mills no clear trend could be said to have been established during the period. The average size of net working capital taking all the private mills together went on decreasing in 1989-90 and there became a working capital deficit in 1992-93; but thereafter it turned to be positive and increased up to 1995-96 followed by a decrease in 1996-97. Mill-B_{10} had the highest average net working capital of Tk. 2133.78 lakh, followed by Mill-B_4 of Tk. 581.09 lakh and Mill-B_3 of Tk. 542.43 lakh. The annual average growth rate was negative in two private mills as against six public sector mills.

6.2.2 Net Working Capital to Total Assets :

It is a measure of the net liquid assets of the firm relative to the total capitalisation. A higher ratio is preferred. The percentage of net working capital to total assets of the selected cotton textile mills is given in Table-6.4.

A look into the above Table-6.4 shows that in public sector, year wise percentage of average net working capital to total assets was highly adverse during 1987-88 to 1996-97. The percentage of working capital deficit to total assets increased to (86.89%) in 1996-97 from (11.76%) in 1987-88 generating 638.86% increase over the period. The percentage of yearly average net working capital to total assets was 36.54% and 43.55% in Mills-A_1 and A_2 respectively. But the same had been highly negative in case of remaining all public sector mills due to their excessive current obligations.

In private sector, the average percentage of net working capital to total assets in all the mills taken together went up to 8.36% in 1996-97 from 4.88 % in 1987-88 registering 71.31% increase. Mills-B_3, B_4, B_8 and B_{10} had yearly average of 15.45%, 14.13%, 14.38% and 11.33% net working capital to total assets

Table 6.4: Percentage of Net Working Capital to Total Assets.

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	AAGR
PUBLIC SECTOR	A_1	39.91	38.53	43.85	27.63	46.67	29.59	44.27	50.25	25.76	18.96	36.54	-0.704
	A_2	21.65	38.81	43.46	45.80	47.48	45.67	53.47	56.82	47.38	34.91	43.55	8.543
	A_3	(40.90)	(32.52)	(21.97)	(17.46)	(0.13)	9.42	(11.60)	52.76	(3.84)	(48.23)	(11.45)	-805.347
	A_4	(4.04)	(22.01)	14.27	11.12	4.84	(11.55)	(6.86)	(5.50)	0.42	(11.02)	(3.03)	-336.566
	A_5	(40.48)	(27.47)	(30.10)	(41.92)	(46.91)	(92.25)	(276.42)	(356.73)	(292.56)	(443.88)	(164.87)	43.076
	A_6	(56.27)	(15.79)	(13.95)	(17.35)	(18.97)	(29.47)	(50.63)	(74.32)	(75.17)	(55.51)	(40.74)	11.005
	A_7	7.61	3.25	(26.73)	(31.31)	(24.80)	(47.96)	(37.29)	(48.06)	(98.01)	(77.57)	(38.09)	-88.923
	A_8	(16.11)	(17.06)	(15.23)	(22.76)	(32.38)	(47.25)	(28.82)	(23.25)	(66.04)	(124.27)	(39.32)	40.646
	A_9	(2.80)	0.31	(6.16)	(26.64)	(37.49)	(77.37)	(23.52)	(33.34)	(34.26)	(55.16)	(22.15)	-162.282
	A_{10}	(26.18)	(39.65)	(42.06)	(63.87)	(68.93)	(102.70)	(43.74)	55.39	75.33	(107.15)	(36.36)	-9.352
	Ave	(11.76)	(7.36)	(5.46)	(13.68)	(5.56)	(32.38)	(37.27)	(32.60)	(42.10)	(86.89)	(27.51)	72.003
PRIVATE SECTOR	B_1	(8.32)	(8.06)	(9.16)	(7.19)	(5.93)	0.31	4.50	13.00	22.26	12.02	1.34	159.110
	B_2	(4.06)	0.47	1.02	(10.37)	(11.48)	(13.08)	(5.22)	(3.42)	(3.25)	(2.86)	(5.23)	-133.125
	B_3	8.02	15.04	13.83	11.19	11.63	12.78	13.16	19.27	23.40	26.19	15.45	17.44
	B_4	23.86	28.34	19.73	21.80	6.56	1.29	5.53	7.33	16.93	9.97	14.13	33.303
	B_5	-	-	NA	(30.31)	(33.67)	(31.38)	(27.32)	(19.42)	(33.15)	23.65	(21.66)	-23.035
	B_6	-	-	1.11	3.11	(2.48)	(0.10)	(1.45)	(1.44)	(0.08)	(15.17)	(2.06)	2860.262
	B_7	-	-	5.26	(7.73)	(1.95)	(6.98)	5.94	6.90	5.60	(0.02)	0.88	-50.274
	B_8	-	-	10.16	9.78	13.81	15.32	20.74	6.76	23.45	15.03	14.38	32.480
	B_9	-	-	-	-	NA	5.95	8.31	5.77	3.65	3.42	5.42	-8.486
	B_{10}	-	-	-	-	NA	(4.39)	7.19	23.95	18.53	11.36	11.33	-23.001
	Ave	4.88	8.95	5.99	(1.22)	(2.94)	(2.03)	3.14	5.87	7.73	8.36	3.87	-9.641

Source : Computed from Table-6.3 and Appendix-10.

Notes : i) '—' indicates the period before establishment and commencement of production.
ii) NA= Not Available; iii) '( )' indicates working capital deficit
iv) Minus = Negative growth rate; v) AAGR = Annual Average Growth Rate.

respectively, while a very low percentage of the same was in Mills-B_1, B_7 and B_9. However, it was negative in case of Mills-B_2, B_5 and B_6. Annual average growth rate was found to be negative in five mills as against six in public sector.

6.3 LIQUIDITY ANALYSIS

Through the liquidity ratios, it may be ascertained whether the enterprise has adequate current assets to meet its current obligations. In fact, maintenance of adequate liquidity without impairing profitability is two foremost requirements of sound and efficient working capital. Usually liquidity is measured in terms of (a) current ratio, (b) quick ratio, and (c) ratio of cash to current assets. These ratios have also been used by Verma[3] in his work on State Electricity Boards.

6.3.1 Current Ratio :

Current Ratio (CR) is a measure of the enterprise's short-term solvency. It gives a crude measure of liquidity[4]. In the words of Schall and Haley, "The simplest measure of the firm's ability to raise funds to meet short term obligations is the current ratio. It is the ratio of current assets to current liabilities[5]. A strong current ratio is a matter of financial strength. A ratio of greater than one means that the enterprise has more current assets than current claims against them. A current ratio of 2:1 has come to be recognised as a standard of liquidity for a business enterprise. Ratio of current assets to current liabilities in the cotton textile mills under study for the period 1987-88 to 1996-97 is furnished in Table-6.5.

An analysis of the figures presented in the above Table-6.5 reflects that in the face of ideal ratio of current assets to current liabilities of 2:1, the position of public sector Mills-A_1 and A_2 with 8.84 and 4.47 average current ratio respectively is abnormally liquid indicating inefficient tie-up of funds. In case of

Table 6.5. Current Assets to Current Liabilities

(In Times)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	AAGR
PUBLIC SECTOR	A_1	3.48	2.78	6.90	8.92	12.12	4.22	15.68	24.95	7.89	1.48	8.84	34.346
	A_2	2.36	4.50	4.52	4.07	3.89	3.59	8.41	7.51	3.62	2.26	4.47	11.469
	A_3	0.36	0.51	0.62	0.67	1.00	1.26	0.78	5.38	0.92	0.47	1.10	62.932
	A_4	0.94	0.67	1.72	1.51	1.20	0.77	0.76	0.80	1.01	0.74	1.01	6.989
	A_5	0.64	0.71	0.68	0.61	0.61	0.46	0.20	0.17	0.20	0.14	0.44	-12.449
	A_6	0.59	0.72	0.63	0.58	0.56	0.52	0.35	0.29	0.30	0.30	0.48	-6.153
	A_7	1.10	1.07	0.43	0.40	0.33	0.43	0.43	0.35	0.18	0.26	0.50	-8.827
	A_8	0.55	0.63	0.69	0.61	0.56	0.50	0.61	0.58	0.39	0.21	0.53	-7.585
	A_9	0.81	1.03	0.72	0.29	0.41	0.18	0.28	0.23	0.25	0.13	0.43	-8.775
	A_{10}	0.38	0.34	0.40	0.22	0.33	0.23	0.33	0.24	0.19	0.14	0.28	-5.458
PRIVATE SECTOR	B_1	0.85	0.85	0.84	0.88	0.80	1.01	1.17	1.52	2.32	1.45	1.17	9.070
	B_2	0.95	1.01	1.03	0.73	0.75	0.72	0.87	0.91	0.88	0.90	0.88	0.257
	B_3	1.32	1.80	1.52	1.56	1.58	1.53	1.51	1.90	2.80	2.26	1.78	8.240
	B_4	1.59	1.63	1.51	1.55	1.16	1.03	1.16	1.19	1.46	1.36	1.36	-0.835
	B_5	-	-	NA	0.07	0.14	0.29	0.39	0.46	0.32	0.42	0.30	43.398
	B_6	-	-	1.07	1.15	0.90	1.00	0.95	0.96	1.00	0.66	0.96	-5.276
	B_7	-	-	1.61	0.66	0.88	0.76	1.26	1.25	1.25	1.00	1.08	0.812
	B_8	-	-	2.22	1.81	2.13	2.11	2.34	1.31	2.40	2.03	2.04	4.706
	B_9	-	-	-	-	NA	2.36	2.02	1.74	1.30	1.33	1.75	-12.811
	B_{10}	-	-	-	-	NA	0.86	1.26	2.79	3.15	1.64	1.94	33.226

Source : Computed from Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production.
ii) N A= Not Available; iii) Minus = Negative growth rate; iv) AAGR = Annual Average Growth Rate.

Mills-A_3 and A_4, the low average current ratio indicates the risk of liquidity apparently. But the position of Mills-A_5, A_6, A_7, A_8, A_9 and A_{10} with less than one average current ratio was the worst from the liquidity point of view and immediate efforts are necessary to improve the situation. The annual average growth rate was positive in four public sector mills while six mills had negative growth rates.

But in private sector, the position was relatively better. In case of Mill-B_8 the ideal current ratio of 2:1 could have been achieved which indicates the efficient utilisation of current assets, while the position of Mills-B_3, B_9 and B_{10} with current ratio of 1.78, 1.75 and 1.94 respectively may also be termed as quite good as these were quite near to the ideal norm of 2:1. However, the same was low in case of Mills-B_1, B_4 and B_7 indicating the risk of liquidity while the positions of Mills-B_2, B_5 and B_6 were very bad from the liquidity point of view and it needs immediate efforts to improve the situation. The annual average growth rate was positive in 7 mills while 3 mills had negative growth rates.

The following Table-6.6 shows the average amount of current assets, current liabilities and current ratio of both public and private sector taking all the sample mills together from 1987-88 to 1996-97. The mean, standard deviation, coefficient of variation (CV) and the co efficient of correlation(r) are also presented for further analysis.

Table-6.6 reveals that in public sector, average current assets of the ten mills rose to Tk. 603.25 lakh in 1996-97 from Tk. 56.08 lakh in 1987-88 generating 6.75 percent increase while their average current liabilities went up to Tk. 1218.26 lakh in 1996-97 from Tk. 503.15 lakh in 1987-88 registering a growth rate of 142.13%. The mean of current assets and current liabilities were Tk. 669.50 lakh and Tk. 906.50 lakh with a standard deviation of Tk. 83.47 lakh and Tk. 276.16 lakh respectively. The coefficient of variation in case of current liabilities was also higher with 30.45 percent as compared to current assets with 12.47% indicating greater variability in current liabilities.

Table-6.6: Average Current Assets, Current Liabilities and Current Ratio of Selected Cotton Textile Mills : 1987-88 to 1996-97

Sectors / Years & Statistical Parameters	Public Sector			Private Sector		
	Current Assets (Lakh Taka)	Current Liabilities (Lakh Taka)	Current Ratio (Times)	Current Assets (Lakh Taka)	Current Liabilities (Lakh Taka)	Current Ratio (Times)
1987-88	565.08	503.15	1.12	1085.46	925.83	1.17
1988-89	684.34	603.83	1.13	1331.28	1007.96	1.32
1989-90	685.62	705.31	0.97	981.03	757.63	1.29
1990-91	571.30	769.28	0.74	883.22	858.75	1.03
1991-92	806.74	1119.96	0.72	958.64	1003.20	0.96
1992-93	812.67	1399.64	0.58	1199.37	1270.07	0.94
1993-94	620.89	823.71	0.75	1683.69	1394.29	1.21
1994-95	636.67	805.24	0.79	2236.86	1542.52	1.45
1995-96	708.05	1120.89	0.63	2575.75	1630.36	1.58
1996-97	603.25	1218.26	0.50	3155.32	2667.59	1.18
Average (X)	669.46	906.93	0.79	1609.06	1305.82	1.21
SD	83.47	276.16	0.22	747.57	533.85	0.21
CV	12.47%	30.45%	27.34%	46.46%	40.88%	17.02%
Co-efficient of Correlation (r)	0.62			0.94		

Source: Computed from Annual Reports of BTMC and Member Mills of BTMA.

In private sector, average current assets of the ten mills went up to Tk. 3155.32 lakh in 1996-97 from Tk. 1085.46 lakh in 1987-88 registering a growth rate of 190.69% while their average current liabilities went up to Tk. 2667.59 lakh in 1996-97 from Tk. 925.23 lakh in 1987-88 generating a growth rate of 188.13%. The mean of current assets and current liabilities for the entire period were Tk. 1609.00 lakh and Tk. 1305.90 lakh with a standard deviation of Tk. 747.57 lakh and Tk. 533.85 lakh respectively. The coefficient of variation in case of current assets was higher of 46.46% than that of current liabilities of 40.88% indicating greater variability in current assets. The co-efficient of correlation between current assets and current liabilities was to +0.936 while it was +0.619 in public sector. The average current ratio in public sector came down to 0.50 times in 1996-97 registering 55.36% decrease over 1987-88 while the same in the private sector went up to 1.18 times in 1996-97 generating 0.85% increase over 1987-88. The overall trend of current ratio in public sector was towards decrease while it was towards increase in case of private sector. However, the ideal standard of current ratio 2:1 could not have been achieved during the period in case of both public and private sector. The average current ratio for the entire period was 0.79 times in public sector while it was 1.21 times in private sector.

6.3.2 Quick Ratio or Acid Test Ratio :

The quick ratio (QR) also known as Acid test ratio measures the firm's ability to meet short-term obligations from its most liquid assets. In the words of Van Horne, "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[6]". The term 'quick assets' refers to current assets which can be converted into cash immediately or with in reasonable time without a loss of value. In this case, inventory is not included with other current assets because it is generally far less liquid than the other current assets. According to Schall and Haley, "The quick

Table 6.7. Quick Assets to Current Liabilities of the Selected Cotton Textile Mills

(In Times)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	AAGR
PUBLIC SECTOR	A_1	2.47	2.02	4.63	3.67	3.49	1.70	12.20	22.21	5.30	1.03	5.87	64.117
	A_2	1.49	3.19	2.51	2.73	1.77	0.82	6.13	6.67	1.11	0.96	2.74	63.578
	A_3	0.13	0.20	0.13	0.15	0.49	0.51	0.12	4.61	0.23	0.19	0.68	424.196
	A_4	0.33	0.13	0.51	0.66	0.44	0.15	0.37	0.42	0.26	0.34	0.36	34.969
	A_5	0.15	0.22	0.18	0.17	0.14	0.09	0.08	0.06	0.06	0.05	0.12	-9.245
	A_6	0.41	0.48	0.42	0.43	0.37	0.28	0.24	0.23	0.20	0.24	0.33	-4.757
	A_7	0.91	0.93	0.26	0.22	0.01	0.16	0.20	0.31	0.11	0.16	0.33	153.361
	A_8	0.13	0.20	0.23	0.23	0.10	0.07	0.12	0.31	0.08	0.06	0.15	12.543
	A_9	0.34	0.40	0.17	0.06	0.03	0.02	0.05	0.08	0.07	0.07	0.13	1.067
	A_{10}	0.09	0.07	0.10	0.08	0.06	0.05	0.10	0.15	0.07	0.06	0.08	4.594
PRIVATE SECTOR	B_1	0.43	0.52	0.49	0.54	0.35	0.29	0.48	0.74	0.94	0.85	0.56	12.241
	B_2	0.30	0.34	0.47	0.23	0.50	0.45	0.43	0.57	0.50	0.29	0.41	9.081
	B_3	0.40	0.44	0.43	0.41	0.43	0.32	0.51	0.48	0.95	0.78	0.52	12.876
	B_4	0.88	0.92	0.78	0.95	0.44	0.48	0.48	0.47	0.66	0.78	0.68	2.561
	B_5	-	-	NA	0.05	0.05	0.07	0.11	0.39	0.30	0.39	0.19	59.768
	B_6	-	-	0.18	0.10	0.03	0.16	0.24	0.30	0.40	0.22	0.20	4.305
	B_7	-	-	0.72	0.30	0.42	0.30	0.74	0.67	0.69	0.55	0.55	10.428
	B_8	-	-	0.64	0.44	0.72	0.45	0.70	0.18	1.04	0.50	0.58	57.430
	B_9	-	-	-	-	NA	0.89	1.24	1.13	0.45	0.87	0.92	15.902
	B_{10}	-	-	-	-	NA	0.37	0.57	1.67	1.64	0.77	1.00	48.047

Source : Computed from Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production.
ii) NA= Not Available; iii) Minus = Negative growth rate; iv) AAGR = Annual Average Growth Rate.

ratio equals current assets, excluding inventory, divided by current liabilities[7]". Thus, the quick ratio is the ratio between quick assets and current liabilities. As a rule of thumb quick ratio of 1:1 is considered satisfactory.

Table-6.7 presents the quick ratio in the selected cotton textile mills under public and private sector during the period from 1987-88 to 1996-97. Table-6.7 portrays that in public sector mills, the ideal quick assets to current liabilities of 1:1 could not have been achieved during the period under study in case of all the mills except Mills-A_1, and A_2. The yearly average quick ratio of Mills-A_1 and A_2 had been abnormally higher than the standard norm due to their very low current obligations. The position of all other mills with very low quick ratio had been the worst from the liquidity point of view and the claims of their current creditors were not well protected throughout the period of study. It also indicates that they had almost no quick assets, to carryout their operation.

In the private sector, quick assets to current liabilities in terms of the standard were not satisfactory during the period. On average the ideal quick ratio could have been achieved in only Mill-B_{10} while the position of Mill-B_9 with quick ratio of 0.92 may be termed as quite good as it was quite near to the standard norm. Mills-B_1, B_3, B_4, B_7 and B_8 had quick ratio in the range 0.50 to 0.70. The position was very bad in Mills-B_2, B_5 and B_6, which had almost no quick assets to carryout their operations. The annual average growth rate was positive in all the private mills as against the eight public mills. Table-6.8 presents the average quick assets, current liabilities and quick ratios of selected cotton textile mills under public and private sector during 1987-88 to 1996-97. The table indicates that the average quick assets of ten textile mills in public sector increased by 2.83% in 1996-97 over 1987-88, but the average current liabilities of those mills increased by 142.13% in 1996-97 over 1987-88. The mean of quick assets and current liabilities were Tk. 347.70 lakh and Tk. 906.90 lakh with the standard Deviation of Tk. 80.94 lakh and Tk. 276.16 lakh respectively. The co-efficient of variation in case of current liabilities was higher with 30.45% compared of 23.28% in case of quick assets indicating greater

Table-6.8: Average Quick Assets, Current Liabilities and Quick Ratio of Selected Cotton Textile Mills : 1987-88 to 1996-97

Sectors / Years & Statistical Parameters	Public Sector			Private Sector		
	Quick Assets (Lakh Taka)	Current Liabilities (Lakh Taka)	Quick Ratio (Times)	Quick Assets (Lakh Taka)	Current Liabilities (Lakh Taka)	Quick Ratio (Times)
1987-88	347.07	503.15	0.69	482.20	925.83	0.52
1988-89	426.46	603.83	0.71	621.99	1007.98	0.62
1989-90	365.31	705.31	0.52	419.69	757.63	0.55
1990-91	277.17	769.28	0.36	387.23	858.75	0.45
1991-92	223.92	1119.96	0.20	387.65	1003.20	0.39
1992-93	259.51	1399.64	0.16	445.37	1270.07	0.35
1993-94	350.66	823.71	0.43	763.52	1394.29	0.55
1994-95	523.31	805.24	0.65	1112.50	1542.52	0.72
1995-96	347.02	1120.89	0.31	1273.63	1630.36	0.78
1996-97	356.88	1218.26	0.29	1592.54	2667.59	0.60
Average (X)	347.73	906.93	0.43	748.63	1305.82	0.55
SD	80.94	276.16	0.20	408.48	533.85	0.14
CV	23.28%	30.45%	46.98%	54.56%	40.88%	24.73%
Co-efficient of Correlation (r)	0.57			0.92		

Source: Computed from Annual Reports of BTMC and Member Mills of BTMA.

variability in current liabilities. The co-efficient of correlation 0.574 indicates positive relationship between current assets and current liabilities.

In private sector, the average quick assets increased by 230.27% in 1996-97 over 1987-88 while the average current liabilities increased by 188.13% in 1996-97 over 1987-88. The mean of quick assets and current liabilities were Tk. 748.63 lakh and Tk. 1305.82 lakh with standard deviation of Tk. 408.48 lakh and Tk. 533.85 lakh respectively. The higher co-efficient of variation of 54.56% indicates greater variability in quick assets compared to current liabilities. The co-efficient of correlation between quick assets and current liabilities was + 0.922 while it was + 0.574 in case of public sector. The quick ratio in public sector came down to 0.29 times in 1996-97 from 0.69 times in 1987-88 registering a decrease of 57.97% while the same went up to 0.60 times in 1996-97 from 0.52 times in 1987-88 generating an increase of 15.38%. However, the ideal quick assets to current liabilities could not have been achieved during the period in case of private sector as well as in public sector mills. The average quick ratio for the entire period was 0.55 times in private sector while it was 0.43 times in public sector.

6.3.3 Ratio of Cash to Current Assets :

Cash and bank balances is the most commonly used mode of making payments in the ordinary course of business, as eventually all major current assets get converted into cash. Hence, management of 'cash and bank balances', is a matter of crucial significance in working capital management.

Ratio of cash and bank to current assets expresses the relationship between cash and bank and current assets. If most of the current assets are made up of cash alone, the profitability of an enterprise decreases, because as non-earning asset

cash by itself does not yield any profit. Therefore, "corporate firms should carry cash and bank balance which is adequate to make all routine payments in time, but does not remain idle for long as cash is a non-earning asset" [8]. The role cash plays in the working capital management depend on the nature of business. There is then, no standard ratio of cash to current assets. The ratio of cash to total current assets should be kept as low as possible, considering the problems which may arise if cash balance is too low.

The ratio of cash and bank balance[9] to total current assets in the selected cotton textile mills under study from 1987-88 to 1996-97 is given in Table-6.9. This table reveals that in the public sector, the average ratio of cash and bank balance to current assets of all the mills taken together ranged between 19.34% in 1987-88 being the highest and 3.70% in 1996-97, being the lowest, indicating an erratic position in cash management. The public sector average ratio for the entire period was 11.63%. The yearly average ratio of individual mill was the highest in Mill-A_2 (36.82%) followed by Mill-A_1 (18.04%) varying in a range of 54.77 and 57.43 respectively. The yearly average ratio of cash and bank balance to current assets in Mills-A_1, A_2, A_3 and A_6 was higher as compared to the public sector average as a whole indicating inefficient management of cash in these mills than the other mills. The yearly average ratio of Mills-A_4, A_5, A_7, A_8, A_9 and A_{10} was lower than the public sector average as a whole. The lower ratio indicates their better efficiency in cash management.

In contrast, the average ratio of cash and bank balance to current assets in case of private sector mills was lower than that of public sector mills in all the years except 1995-96. The average ratio in this sector varied in a small range of 6.04 between 9.22% in 1987-88 to 3.18% in 1996-97. However, the average ratio of all the private sector textile mills for the entire period was 5.82% which was much lower than that of public sector. The yearly average ratio of cash and bank balance to current assets was the highest in Mill-B_4 (13.50%) followed by Mill-B_5

Table 6.9: Ratio of Cash and Bank Balance to Current Assets.

(In Percentage)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	Range
PUBLIC SECTOR	A_1	50.11	57.48	49.52	0.66	1.30	0.05	14.63	6.11	0.05	0.45	18.04	57.43
	A_2	49.53	50.42	44.52	50.42	27.30	2.45	51.74	54.87	=	0.10	36.82	54.77
	A_3	12.17	21.45	8.24	6.66	31.85	27.13	5.22	3.86	5.17	3.57	12.53	28.28
	A_4	10.90	2.52	10.37	0.38	5.13	0.27	10.73	9.18	0.22	2.74	5.24	10.68
	A_5	5.57	9.60	6.41	4.81	3.95	4.20	11.82	21.52	13.51	17.28	9.87	17.57
	A_6	16.19	16.21	12.29	14.18	10.86	9.38	13.48	20.47	13.65	0.15	12.69	20.32
	A_7	0.29	0.28	3.53	0.98	9.21	0.26	1.25	29.54	2.76	0.81	4.89	29.26
	A_8	12.69	13.93	0.86	0.57	2.47	0.50	4.79	7.02	1.56	0.94	4.53	13.43
	A_9	34.61	20.05	12.95	3.39	0.12	12.39	0.30	12.80	1.92	10.28	10.88	34.49
	A_{10}	1.32	0.23	2.38	0.15	1.29	2.43	3.26	27.47	0.81	0.70	4.00	27.32
	Ave	19.34	19.22	15.11	8.22	9.35	5.91	11.72	19.28	4.41	3.70	11.63	15.64
PRIVATE SECTOR	B_1	0.35	0.21	0.77	10.13	8.36	7.88	6.75	5.65	5.40	5.28	5.08	9.92
	B_2	0.17	1.78	2.22	2.61	10.80	3.93	0.81	15.22	8.38	0.16	4.61	15.06
	B_3	18.82	13.40	14.12	0.93	0.37	0.49	0.30	0.28	0.25	1.94	5.09	18.57
	B_4	17.55	6.84	15.90	14.83	11.99	20.03	10.80	11.27	10.36	15.40	13.50	13.19
	B_5	-	-	NA	19.69	12.16	4.97	9.69	5.71	13.95	1.41	9.65	18.28
	B_6	-	-	1.39	0.58	0.73	0.49	0.33	0.26	0.30	0.22	0.54	1.17
	B_7	-	-	13.24	4.45	1.99	0.39	15.46	0.17	0.75	1.39	4.73	13.07
	B_8	-	-	9.75	2.08	0.62	0.27	0.69	3.04	2.28	3.92	2.83	9.48
	B_9	-	-	-	-	NA	0.69	0.98	2.88	0.29	0.41	1.05	2.59
	B_{10}	-	-	-	-	NA	4.68	2.75	11.83	2.22	1.64	4.62	10.19
	Ave	9.22	5.56	8.20	6.91	5.88	4.38	4.86	5.63	4.42	3.18	5.82	6.04

Source : Computed from Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production,
ii) NA= Not Available; iii) '=' indicates no cash and bank balance.

(9.65%) and their range of variation were 13.19 and 18.28 respectively. The ratio in these mills was higher than the private sector average, while it was lower in the remaining private sector mills. But the ratio was very low in Mills-B_6 and B_9 i.e., only 0.54% and 1.05% varying in a range of only 1.17 and 2.59 respectively which might be of cash crisis in making all routine payment. We may now conclude that the lower private sector average ratio during all the years indicate better cash management as well as better profitability of private mills as compared to their counter parts in public sector.

6.4 ANALYSIS OF OPERATIONAL EFFICIENCY

Numerous ratios can be calculated and used for analysing the efficiency of working capital but generally the following three important ratios are used:-

i) working capital turnover ratio,

ii) Inventory turnover ratio, and

iii) Debtors turnover ratio.

For lack of information as to total debtors of all the private sector mills, our analysis has been kept limited to working capital turnover and inventory turnover only.

6.4.1 Working Capital Turnover Ratio :

The relationship between sales and working capital tests the efficiency with which the working capital is used. It is calculated by dividing sales by average working capital or closing working capital. The ratio reflects the extent to

which a business is operating on a small or a large amount of working capital in relation to sales. The faster the turnover, the lower is the investment and the greater is the profit. However, a very high ratio may be the result of over trading which is indicated by an increase in the amount of sales without corresponding increase in the amount of working capital. A very low ratio may be the result of under trading which indicates more working capital funds are invested in the business than needed.

Table-6.10 presents the working capital turnover ratio of selected cotton textile mills in Bangladesh during 1987-88 to 1996-97. It can be seen from the table that there was a negative turnover of working capital in three public sector mills viz., Mills-A_5, A_6 and A_8 throughout the period under study due to their working capital deficit during the period while in case of Mills-A_3, A_4, A_7, A_9 and A_{10}, negative turnover of working capital was present in almost all the years under review due to working capital deficit. The yearly average negative turnover was the lowest in Mill-A_{10} (0.40 times) while it was the highest (123.24) times in case of Mill-A_3. The range of variation was also the lowest in Mill-A_{10} and it was the highest in Mill-A_3. The turnover of working capital was very low and almost nil throughout the period in Mills-A_1 and A_2 which indicates more working capital funds had been invested in business than they needed. The public sector average turnover of working capital ranged between 0.57 to 117.43 times in negative sense during the study period except in 1992-93 and 1995-96 when the ratio was positive i.e., 0.67 and 14.83 times respectively.

On the other hand, a study of the said ratio in private sector found a negative position due to working capital deficit throughout the period in Mill-B_5 while it was also found in more than half of the years in case of Mills-B_5 and B_6. After suffering from working capital deficit up to 1991-92 a small amount of working capital was built-up during 1992-93 in Mill-B_1 and its turnover of working capital was 83.18 times during this year which indicates insufficient

Table 6.10: Working Capital Turnover Ratio.

(In Times)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	Range
PUBLIC SECTOR	A_1	1.05	0.84	0.89	1.39	0.39	1.40	1.17	0.39	0.99	0.87	0.94	1.01
	A_2	3.54	2.13	1.54	1.40	0.76	1.19	2.08	1.18	0.92	1.07	1.59	2.78
	A_3	(2.30)	(3.33)	(5.74)	(7.94)	(1184.60)	14.66	(9.81)	1.65	(34.06)	(0.96)	(123.24)	1199.26
	A_4	(52.77)	(4.90)	6.42	9.32	20.68	(4.07)	(12.52)	(15.84)	184.39	(5.06)	12.57	237.16
	A_5	(4.90)	(8.95)	(7.66)	(6.15)	(4.84)	(1.72)	(0.60)	(0.52)	(0.62)	(0.16)	(3.61)	8.79
	A_6	(2.51)	(3.88)	(2.95)	(3.16)	(3.00)	(1.36)	(0.95)	(0.73)	(0.41)	(0.33)	(1.93)	3.55
	A_7	10.11	16.70	(1.73)	(1.77)	(1.66)	(1.07)	(1.21)	(1.35)	(0.68)	(0.54)	1.68	18.47
	A_8	(5.54)	(4.99)	(6.05)	(4.11)	(1.99)	(1.46)	(2.52)	(6.42)	(1.51)	(0.29)	(3.49)	6.13
	A_9	(14.05)	147.78	(5.19)	(1.54)	0.46	(0.53)	(1.63)	(1.10)	(1.06)	(0.26)	12.20	161.83
	A_{10}	(1.08)	(0.91)	(0.95)	(0.53)	(0.21)	(0.39)	(1.34)	1.09	0.36	(0.05)	(0.40)	2.43
	Ave	(6.85)	(0.73)	(2.14)	(1.31)	(117.43)	0.67	(2.73)	(2.17)	14.83	(0.57)	(11.84)	132.26
PRIVATE SECTOR	B_1	(5.65)	(8.21)	(8.46)	(7.64)	(3.89)	83.18	9.33	4.92	2.36	4.28	7.02	91.64
	B_2	(19.91)	55.63	29.24	(2.66)	(3.60)	(3.54)	(8.86)	(18.44)	(12.29)	(7.58)	0.80	75.54
	B_3	6.71	3.89	4.06	5.24	6.03	5.09	4.45	3.81	4.26	2.79	4.63	3.92
	B_4	3.94	2.70	4.89	4.42	15.02	70.49	18.02	15.73	6.24	7.98	14.94	67.79
	B_5	-	-	NA	(1.81)	(1.44)	(1.64)	(2.75)	(7.28)	(3.90)	(1.70)	(2.93)	5.84
	B_6	-	-	16.48	12.93	(18.15)	(375.39)	(35.68)	(42.38)	(814.24)	(3.85)	(157.54)	830.72
	B_7	-	-	8.22	(8.42)	(30.25)	(10.08)	10.32	8.73	8.60	2366.29	294.18	2396.54
	B_8	-	-	4.80	5.32	4.43	3.81	3.88	17.95	3.92	6.14	6.28	14.14
	B_9	-	-	-	-	NA	7.19	5.83	8.08	15.10	23.28	11.90	17.45
	B_{10}	-	-	-	-	NA	(8.06)	5.86	1.29	1.30	1.61	0.40	13.92
	Ave	(3.73)	13.50	8.46	0.92	(3.98)	(22.90)	1.04	(0.76)	(78.87)	239.92	15.36	318.79

Source : Computed from Table-6.3 and Appendix-7.

Note : i) '—' indicates the period before establishment and commencement of production.
ii) NA= Not Available; iii) '( )' Indicates Negative Ratio.

working capital was invested during this particular period. It declined gradually and went down to 4.28 times in 1996-97 showing improvement in working capital position during the second half of the study period. Mills-B_3 and B_8 had a better turnover all through the period of study and their yearly average ratio was 4.63 and 6.28 times varying in a range of 3.92 and 14.14 respectively. The position of Mills-B_4 and B_9 with the average ratio of 14.94 times and 11.90 times respectively might be termed as good as these were neither very high nor very low. Mill-B_7 had a satisfactory ratio of 8.22, 10.32, 8.73 and 8.60 during 1989-90, 1993-94, 1994-95 and 1995-96 respectively but it had abnormally high in 1996-97 i.e., 2366.29 due to very small working capital making the highest yearly average ratio of 294.18 among all. Mill-B_{10} had a deficiency of working capital in 1992-93 but it formed a good ratio of 5.86 times in 1993-94. The ratio declined to 1.29 times in 1994-95 and again increased to 1.61 times in the last year. However, the yearly average ratio in this mill was very low i.e. only 0.40 times which indicates a more working capital fund was invested in this particular mill. The private sector average was positive in five years while it was negative in the other five years.

The above analysis depicts a better efficiency of private sector mills in managing working capital as compared to the public sector mills.

6.4.2 Inventory Turnover Ratio :

"The inventory turnover ratio measures corporate efficiency in employing inventory. It is computed by dividing cost of goods sold by average inventory"[10]. This ratio gives the rate at which inventories are converted into cash. Thus the inventory turnover ratio measures the speed of movement of stock. A high ratio indicates that the stock is fast moving and investment in it is minimum. A lower ratio denotes that the stock is not consumed in more quantity, it is going out of demand and has led to over stocking. Generally the higher the inventory turnover,

Table 6.11:Turnover of Inventory of Finished Goods of the Selected Cotton Textile Mills

(In Times)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	Range
PUBLIC SECTOR	A_1	97.00	73.07	36.10	15.58	1.05	1.96	4.54	6.80	11.55	2.82	25.05	95.95
	A_2	26.44	42.83	17.11	10.67	1.73	1.56	4.20	10.38	2.70	2.01	11.96	41.27
	A_3	38.79	65.57	262.57	77.02	75.15	107.74	9.49	10.15	8.69	4.30	65.95	258.27
	A_4	125.36	96.70	30.73	41.16	24.09	2.96	5.29	38.00	10.54	5.94	38.08	122.40
	A_5	74.69	56.21	39.66	68.06	14.28	5.04	6.63	45.43	19.03	7.94	33.70	69.65
	A_6	42.94	54.14	60.48	90.08	27.36	5.51	6.70	20.52	13.27	9.45	33.05	84.57
	A_7	25.02	34.40	126.29	32.13	2.71	2.55	3.02	9.19	47.65	10.21	29.32	123.58
	A_8	23.80	40.46	171.75	62.12	4.26	2.50	2.72	7.71	10.26	4.29	32.99	169.25
	A_9	58.96	72.90	12.00	15.47	1.74	3.22	9.51	24.18	13.88	14.45	22.63	71.16
	A_{10}	31.89	43.89	36.81	12.34	1.39	2.30	5.67	13.97	15.10	6.09	16.95	42.50
	Ave	54.49	58.01	79.35	42.46	15.38	13.53	5.78	18.63	15.27	6.75	30.97	73.57
PRIVATE SECTOR	B_1	14.87	22.81	19.44	9.70	10.82	7.74	8.48	16.79	11.98	12.86	13.55	15.07
	B_2	NA	2.91	4.33	5.70	7.45	9.34	7.85	12.59	11.38	2.35	7.10	10.24
	B_3	46.98	61.61	23.22	14.90	19.83	15.47	10.95	11.19	11.27	8.73	22.42	52.88
	B_4	36.54	36.14	47.08	55.66	94.82	29.24	13.01	13.83	12.53	12.29	35.11	82.53
	B_5	-	-	NA	1780.92	52.68	11.61	14.71	86.43	254.29	91.89	327.50	1769.31
	B_6	-	-	46.44	90.16	85.72	23.48	15.97	17.92	19.20	19.56	39.81	74.19
	B_7	-	-	23.50	26.21	20.62	12.92	16.88	12.74	7.96	5.68	15.81	20.53
	B_8	-	-	-	10.94	17.03	7.72	8.68	18.89	24.29	22.25	15.69	16.57
	B_9	-	-	-	-	NA	17.56	22.24	36.80	13.65	20.55	22.16	23.15
	B_{10}	-	-	-	-	NA	7.89	9.95	21.98	28.02	15.96	16.76	20.13
	Ave	32.80	30.87	27.34	249.27	38.62	14.30	12.87	24.92	39.46	21.21	49.17	236.40

Source : Computed from Appendix-10 and Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production,
ii) NA= Not Available.

the more efficient the inventory management of a firm[11]. Thus, the higher inventory turnover indicates the better efficiency of management in operating the enterprise with a relatively small average locking up of funds. In our analysis turnover of inventory of finished goods has been calculated by dividing the amount of cost of goods sold by the amount of average inventory of finished goods. Table-6.11 provides the turnover of inventory of finished goods in the selected cotton textile mill under public and private sector individually along with the average position during the period under study.

A look at Table-6.11 shows no clear trend either upward or downward could be said to have been established in inventory turnover ratio both in public and private sector. The average turnover of inventory of finished goods in all the public mills taken together was 54.49 times in 1987-88 which increased to 79.35 times in 1989-90 but thereafter, it showed a declining trend and came down to 5.78 times in 1993-94. The turnover again improved to 18.63 times in 1994-95 but could not maintain the level during the later years and it declined to 6.75 times in 1996-97. The yearly average turnover of inventory of finished goods was higher than the public sector combined average in Mills-A_3, A_4, A_5, A_6 and A_8 while it was lower than the combined average in Mills-A_1, A_2, A_7, A_9 and A_{10}. The yearly average turnover of inventory of finished goods was the highest in Mill-A_3 with 65.95 times followed by Mill-A_4 with 38.08 times, Mill-A_5 with 33.70 times, Mill-A_6 with 33.05 times and Mill-A_8 with 32.99 times which indicate more consumption of inventory of finished goods and thus minimum investment in inventory in these particular public sector mills while in the other cases the lower turnover denotes comparatively slow movement of inventory of finished goods and maximum investment in it.

In the private sector, the average turnover of inventory of finished goods was 32.80 times in 1987-88. It became abnormally high i.e., 249.27 times in 1990-91 due to very high ratio in Mill-B_5 resulting from a very low stock of finished

goods during the year. The average turnover ratio declined thereafter and came down to 12.87 times in 1993-94. Again it improved in 1994-95 and 1995-96 but further declined to 21.21 times in 1996-97. The yearly average turnover ratio in private sector was the highest in Mill-B_5 with 327.50 times, abnormally high due to very low inventory in 1990-91 and 1995-96 followed by Mill-B_6 with 39.81 times and Mill-B_4 with 35.11 times indicates the stock was consumed in more quantity than the other mills. However, the private sector average ratio of inventory turnover was lower than that of public sector during 1987-88 to 1989-90 but it was higher than public sector during the remaining years. Thus, it can be infer that inventory of finished goods was utilised more efficiency in the selected private sector mills during 1990-91 to 1996-97 and thus better performance of the mills for being operated with a smaller average locking up of funds in inventory of finished goods during the years.

6.5 INVENTORY AS PERCENTAGE OF GROSS WORKING CAPITAL

It is an indication of the amount of gross working capital invested in total inventory. Inventories are important to the management of an enterprise primarily because of the direct impact, which they have upon the firm's profits. Too much or too little inventories affect the firm's return on investment.

A glance at Table-6.12 indicates that the inventories occupied a major proportion of the gross working capital in most of the public sector mills in many of the years under study. It is found that in case of three public sector mills viz., A_5, A_8 and A_9 the inventories comprised more than 70% of the gross working capital, while three mills viz., A_3, A_4 and A_{10} had 60% to 70% of the same and four mills viz., A_1, A_2, A_6 and A_7 had 30% to 45%. Mill-A_9 had the highest percentage of inventories to gross working capital of 72.52% varying in a range of

Table 6.12: Inventory as Percentage of Gross Working Capital.

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Average	Range
PUBLIC SECTOR	A_1	29.11	27.38	32.85	58.82	71.24	59.66	22.23	10.99	32.85	30.29	37.54	60.25
	A_2	36.60	29.08	44.43	32.97	54.47	77.03	27.04	11.14	29.30	57.39	43.95	65.89
	A_3	65.39	61.56	78.19	77.14	51.10	59.43	84.99	14.37	75.45	58.73	62.64	70.62
	A_4	64.77	80.07	70.49	56.35	63.09	80.97	51.10	48.08	74.54	53.83	64.33	32.89
	A_5	76.56	69.71	74.19	72.52	76.58	79.48	60.16	64.51	72.35	61.88	70.79	19.32
	A_6	31.03	33.00	34.19	24.69	33.77	46.85	32.32	19.79	33.92	19.66	30.92	27.19
	A_7	17.42	12.87	38.87	45.64	97.77	63.15	53.80	10.93	38.92	40.05	41.88	86.84
	A_8	76.97	68.18	66.81	62.68	82.33	85.70	80.91	46.67	78.67	71.05	72.10	39.03
	A_9	58.06	60.54	75.88	80.87	93.45	87.88	82.17	65.25	73.53	47.52	72.52	45.93
	A_{10}	75.52	78.93	70.38	64.64	82.12	78.53	70.54	35.96	61.99	58.15	67.68	46.16
	Ave	53.14	52.13	58.63	57.63	70.59	71.87	56.53	32.77	61.15	49.86	56.43	39.10
PRIVATE SECTOR	B_1	49.72	39.15	41.61	39.12	55.42	71.62	58.53	51.33	59.39	41.47	50.74	32.50
	B_2	68.86	66.08	54.13	67.93	33.29	36.98	50.70	37.18	42.51	67.41	52.51	35.57
	B_3	69.90	75.37	71.93	73.70	73.11	78.88	65.96	74.72	66.04	65.52	71.51	13.36
	B_4	44.31	43.79	48.43	38.83	62.43	53.78	58.77	60.47	54.76	42.70	50.83	23.60
	B_5	-	-	NA	31.67	65.25	77.12	71.89	15.82	5.45	7.97	39.31	71.67
	B_6	-	-	82.78	91.25	96.39	83.65	75.23	68.75	60.14	66.88	78.13	36.25
	B_7	-	-	55.38	54.60	52.07	60.74	41.14	46.18	44.41	44.99	49.94	19.60
	B_8	-	-	71.05	75.51	66.12	78.54	70.17	84.99	56.55	75.31	72.28	28.44
	B_9	-	-	-	-	NA	62.19	38.83	35.22	65.02	34.56	47.16	30.46
	B_{10}	-	-	-	-	NA	56.51	54.41	40.18	47.90	52.82	50.36	16.33
	Ave	58.20	56.10	60.76	59.08	63.01	66.00	58.56	51.48	50.22	49.96	57.34	15.78

Source : Computed from Table-6.1 and Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production.
ii) NA = Not Available.

45.93 from 47.52% to 93.45%. The average percentage in all the public sector mills taken together varied in a range of 39.10 from 32.77%, being the lowest in 1994-95 to 71.87% in 1992-93, the highest.

In the private sector, three mills (viz.,Mills-B_3, B_6 and B_8) had the average inventories comprising more than 70% of gross working capital, while four mills (viz., Mills-B_1, B_2, B_4 and B_{10}) had 50% to 60% and three mills (viz., Mills-B_5, B_7 and B_9) had 30% to 50% of the same. Mill-B_6 had the highest percentage of inventory to gross working capital of 78.13% varying in a range of 36.25 from 60.14% to 96.39%. The combined position of all the private sector mills taken together varied in a range of 16.04 from 49.96% in 1996-97 to 60.00% in 1992-93. Thus, the above analysis indicates that there was no significant difference in total inventory management among the mills under both public and private sector, which means that the other components of inventory i.e., raw materials, work-in-process and store and spares were not utilised efficiently in both public and private sector mills.

6.6 GRAPHICAL HIGHLIGHTS

Fig. 6.1 : Average Current Assets and Current Liabilities of the Cotton Textile Industry

(Source : Table-6.6)

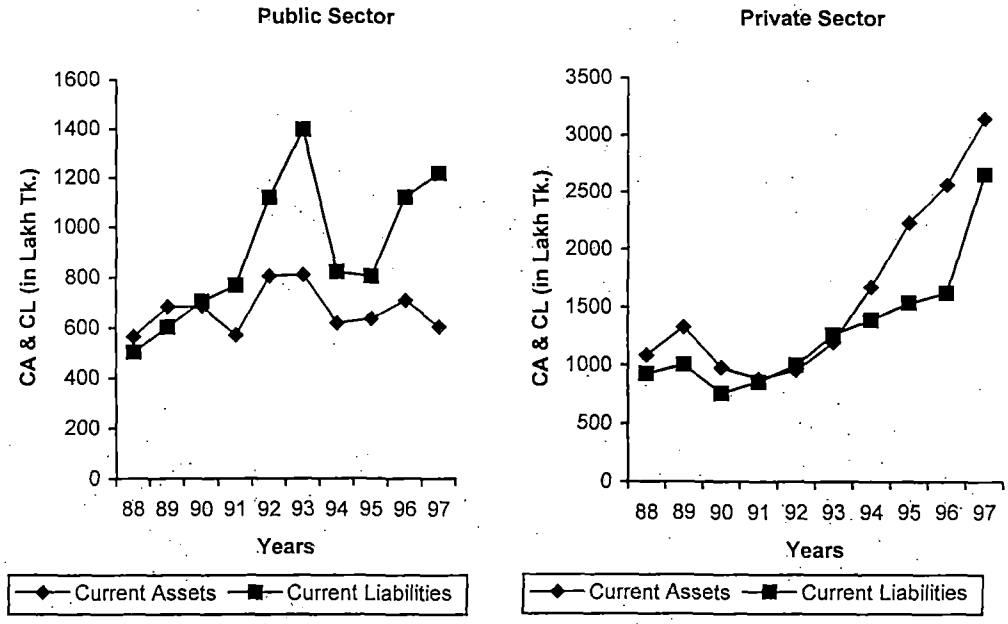

Fig. 6.2 : Average Liquidity of the Cotton Textile Industry

(Source : Table-6.6 & 6.8)

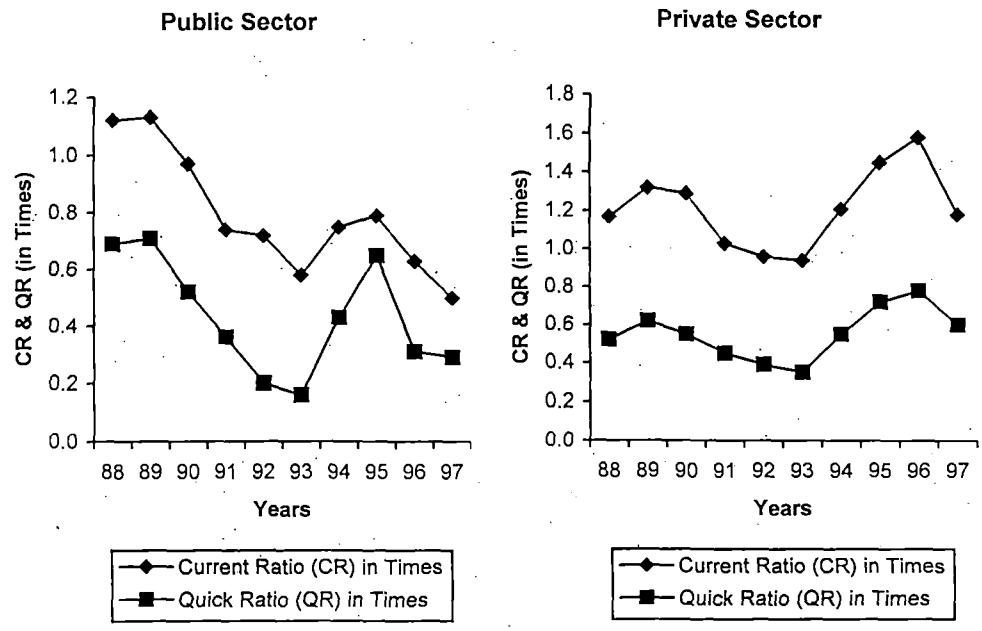

Table 6.13: Mean and 't'-values of the Performance indicators for Public and Private Sector : 1987-88 to 1996-97.

	Table Nos. / Year & Statistical Parameters	P_1 6.1	P_2 6.2	P_3 6.3	P_4 6.4	P_5 6.6	P_6 6.8	P_7 6.9	P_8 6.10	P_9 6.11	P_{10} 6.12
PUBLIC SECTOR	1987-88	565.08	48.65	61.92	(11.76)	1.12	0.69	19.34	(6.84)	54.49	53.14
	1988-89	684.34	40.56	80.52	(7.36)	1.13	0.71	19.22	(0.73)	58.01	52.13
	1989-90	685.62	38.21	(19.69)	(5.46)	0.97	0.52	15.11	(2.14)	79.35	58.63
	1990-91	571.30	33.43	(197.98)	(13.68)	0.74	0.36	8.22	(1.31)	42.46	57.63
	1991-92	806.74	41.05	(19.76)	(5.56)	0.72	0.20	9.35	(117.43)	15.38	70.59
	1992-93	812.67	42.86	(586.97)	(32.39)	0.58	0.16	5.91	0.66	13.53	71.87
	1993-94	620.89	38.17	(202.82)	(37.27)	0.75	0.43	11.72	(2.73)	5.78	56.53
	1994-95	636.67	39.07	(51.44)	(32.60)	0.79	0.65	19.28	(2.16)	18.63	32.77
	1995-96	708.05	41.18	(241.54)	(42.10)	0.63	0.31	4.41	14.83	15.27	61.15
	1996-97	603.25	38.05	(615.01)	(86.89)	0.50	0.29	3.70	(0.57)	6.75	49.86
	X_1	669.46	40.12	(179.28)	(27.51)	0.79	0.43	11.63	(11.84)	30.97	56.43
	SD_1	87.99	3.95	248.06	25.16	0.22	0.20	6.26	37.53	25.66	11.05
	V_1	7741.69	15.56	61531.56	633.02	0.05	0.04	39.14	1408.21	658.23	122.19
PRIVATE SECTOR	1987-88	1085.46	60.44	159.62	4.87	1.17	0.52	9.22	(3.73)	32.80	58.20
	1988-89	1331.28	46.76	323.31	8.95	1.32	0.62	5.56	13.50	30.87	56.10
	1989-90	981.03	33.12	223.40	5.99	1.29	0.55	8.20	8.46	27.34	60.76
	1990-91	883.22	29.46	24.47	(1.21)	1.03	0.45	6.91	0.92	249.27	59.08
	1991-92	958.64	25.46	(44.56)	(2.94)	0.96	0.39	5.88	(3.98)	38.62	63.01
	1992-93	1199.37	25.63	(70.38)	(2.03)	0.94	0.35	4.38	(22.89)	14.30	66.00
	1993-94	1683.69	31.14	289.40	3.14	1.21	0.55	4.86	1.04	12.87	58.56
	1994-95	2236.86	32.37	694.34	5.87	1.45	0.72	5.63	(0.76)	24.92	51.48
	1995-96	2575.75	31.20	937.03	7.73	1.58	0.78	4.42	(78.86)	39.46	50.22
	1996-97	3155.32	30.67	483.69	8.36	1.18	0.60	3.18	239.92	21.21	49.96
	X_2	1609.06	34.63	302.03	3.87	1.21	0.55	5.82	15.36	49.17	52.04
	SD_2	788.01	10.81	325.42	4.45	0.21	0.14	1.84	83.15	70.89	17.33
	V_2	620954.24	116.90	105895.73	19.77	0.04	0.02	3.38	6914.51	5025.38	300.20
t-values		3.747*	1.511	3.720*	3.884*	4.452*	1.576	2.814*	0.943	0.763	0.676

Note : i) P = Performance Indicator; ii) * denotes significant at 0.05 level of significance.

6.7 MEAN AND 't' VALUES OF THE PERFORMANCE INDICATORS AND SIGNIFICANCE OF MEAN DIFFERENCES

The actual values, mean and 't' values of the indicators used for comparing working capital position and efficiency of management of the public and private sector textile mills are provided in Table-6.13. It is evident from Table-6.13 that the differences between the mean values of five indicators are significant at 0.05 level of significance, which are as under:

P_1 = Average gross working capital

P_3 = Average net working capital

P_4 = Percentage of net working capital to total assets

P_5 = Current assets to current liabilities

P_7 = Percentage of cash to current assets

The 't' values of the above ratios or indicators are greater than the table value of t (2.101) at 0.05 level of significance. The table further reveals that the mean differences of the quick ratio (P_6) and the ratios (P_8, P_9 and P_{10}) relating to efficiency of working capital are not significant at 0.05 level of significance.

6.8 SUMMING UP

Our investigation into working capital management of the selected cotton textile mills in Bangladesh during the period of 1987-88 to 1996-97 highlights the fact that the working capital position in the public sector mills was poor as compared to private sector textile mills. The average gross working capital in all the private sector mills was much higher than that of public sector mills during all the years under study. It is surprising that there was a large amount of net working capital deficit in eight public mills as their current liabilities exceeded the current

assets during all the years except one or two in a very few cases which constantly affected the liquidity and solvency of the particular mills. The position was more serious in some mills in which their net working capital deficit registered an upward trend. On the other hand, only four private sector mills experienced working capital deficit during most of the years under study. But the liquidity position was unsatisfactory in almost all the mills under both public and private sector, as their current and quick ratios were below the standard norms in majority of the years. There was surplus cash lying with the four public sector mills (viz., Mills-A_1, A_2, A_3 and A_6) and with the two private sector mills (viz., Mills-B_4 and B_7) in more than half of the years which affected their profitability adversely. As regards efficiency of working capital, turnover of working capital was negative in eight public mills during all the years under study with a very few exceptions. Comparatively better efficiency was achieved in managing working capital in private sector mills. Only in four mills the turnover was negative in many of the years. Our investigation also finds that on average the inventory of finished goods utilised more efficiently or consumed in more quantity in public sector mills up to 1989-90 but private sector mills achieved more efficiency in managing inventory of finished goods during all the years these after. Thus the higher average turnover of private sector mills showed better performance of the mills which had been operated with a relatively smaller average locking up of funds as in inventory of finished goods. But it is evident from our further analysis of total inventory as percentage of gross working capital that almost all the textile mills in both public and private sector had a sizeable investment in total inventory during many of the years under study which adversely affected their operational efficiency and income and therefore, profitability.

As regards shortage of working capital, low sales, poor collection from debtors and excess inventory accumulation have been cited as the major reason for working capital deficiency by the concerned mill authorities of both public and private sector. The policy of increasing working capital should be adopted in the

particular mills under public and private sector. Some of the mill authorities of public sector mentioned that there was a lack of co-ordination between sales and production, which was the root of all inventory management problems. They also mentioned that administered pricing policy, high cost of production and availability of foreign yarn in the market at lower price were the main causes of poor sales performance and higher locking up of funds in inventory. Moreover, a proper inventory management techniques are not applied in both public and private sector mills. Measures should be taken to increase the turnover of inventory and to minimise the blockage of inventory in both public and private sector textile mills.

NOTES AND REFERENCES

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9. In balance sheet of BTMC and all the selected textile mills of BTMA, the cash and bank balances are shown in a combined head. Hossain, Jain & Kumar in their studies have also taken bank balances with cash. Hence we have treated cash and bank balances of cotton textile mills as cash.

   [Hossain, A. T. M. Toffazzal (1984), *Management of Working Capital in Cotton Textile Industries of Bangladesh*, unpublished Ph. D. Thesis, University of Kalyani, Nadia, West Bengal, India, pp. 72-74.

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11. Van Horne, J. C. (1975), op. cit., p. 661.

7

CONCLUDING OBSERVATIONS

7.0 INTRODUCTION

The textile industry is among the oldest and largest manufacturing industries in Bangladesh and occupies a dominant position in the country. The employment provided by it is a source of livelihood for millions of people in rural and remote areas. The country with its extensive trained manpower and cheap labour has great potential in textile manufacturing. There exists a huge market for textile products to meet one of the basic needs of 120 million people with a growth rate of about 3%. However, the Current status of the primary textile sector of the country is not competent to compete in the global textile market. Garment is the most successful textile sub-sector. To continue the growth of garments and to survive in a competitive environment, a strong base of the primary textile i.e., spinning, weaving and dyeing-finishing is necessary.

It is very unfortunate that the performance of running textile mills under BTMC is far from satisfactory and they failed to contribute positively to the national economy. Rather they became a burden on the economy with their continual huge amount of losses. The total loss incurred by the corporation during 1991-97 was Tk. 776.07 crore. The nationalised industries including textiles have been being criticised in the public media for mismanagement, inefficiency and corruption. Planning Commission in its Fifth Five-Year Plan document mentioned *low capacity utilisation, excess manpower, lack of management efficiency, high cost of production etc.* as the main causes of chronic losses of public sector textile mills. The situation in the private sector mills was also not good but seemed to be relatively better than the public sector mills. The Government formulated *the Textile Policy-1995* which identified some major problems pertaining to various sub-sectors of textile industry. Major problems of textile spinning sub-sector as identified in the policy were obsolete technology, frequent interruption of

electricity, scarcity of raw materials, high percentage of wastage, slow progress of privatisation of public sector textile mills.

As the textile industry is the most significant import substituting sector and it has ever present large domestic market, necessary measures must be taken for the development of this sector to save the drainage of country's hard earned foreign exchange and to meet the requirement of large Readymade Garment (RMG) industry and handloom sector as well as the domestic markets.

The present study aimed at evaluating the performance of cotton textile industry in Bangladesh during the period of 1987-88 to 1996-97 and also at comparing the same between the public and the private sector. The review of prior studies confirmed no in-depth study in this field which aroused interest in the researcher to select this topic. The sample of the study comprised ten cotton textile spinning mills from each of the public and private sector. Both primary and secondary data were used to evaluate and compare the performance of the selected textile mills under both sectors based on the main indicators of production and productivity, cost and sales, profitability and working capital management. A detailed discussion on the related terms was also made. Variation in operational performance and financial performance, poor management as the crucial factor hampering the performance of public sector and individual discriminating abilities of the performance indicators were the major hypotheses of the study.

7.1 FINDINGS OF THE STUDY

The major findings of this study can be summed up under the following heads :

7.1.1 Production Performance and Productivity :

Sobhan and Mahmood in their study found that the annual average yarn production during 1980-82 prior to denationalisation decreased by 8.7% in the 21 private sector mills during 1983-85 following denationalisation as against 4.2% increase in public sector mills. The per spindle per shift production were also seen to be lower in the denationalised mills relative to public sector mills. Saha, S. K. observed in his work that average production of six disinvested spinning mills decreased by 6.28% during 1984-89, after privatisation as compared to the average production for five years immediately before transfer to private sector; but the installed capacity and its utilisation rate in these mills increased 23.53% and 37.26% respectively. The present effort, however, observed the following :

i) The production performance of the textile mills under private sector was better than the public sector and it remarkably better in the second half of the study period. The average production of all the public mills registered a continuous decreasing trend since 1992-93 while in contrast, the trend of increasing production was continued in all the private mills throughout the period of study. During 1992-97 the average production decreased by 30% to 60% in as many as ten public mills while the same increased by 80% to 200% in four private mills and it was generally by 25% to 50% over 1987-92. The annual average production of all the public mills as a whole was 12.02 lakh kg and 8.46 lakh kg during 1987-92 and 1992-97 respectively as against the corresponding figures of 18.39 lakh kg and 31.09 lakh kg in private sector.

ii) Production efficiency in terms of per spindle per shift production was also better in private sector as compared to the public sector mills during 1992-97. The average per spindle per shift production of all the public sector textile mills generated a falling trend during 1992-97 as it was found in case of average production, while the same of all the private sector textile mills registered a rising trend during this period. But during 1987-92 there was no

significant difference in production efficiency between the two sectors. The private sector average per spindle per shift production was 75.90 grams and 96.11 grams during 1987-92 and 1992-97 respectively as against 75.54 grams and 74.79 grams in public sector.

iii) Overall a better utilisation of capacity was observed in private sector textile mills as compared of public sector's. The private sector average rate of capacity utilisation was much higher than that of public sector during all the years under study. The maximum average utilisation of capacity in public sector was 85% during 1990-91 while the private sector achieved the maximum rate of 92% during 1989-90 and 1993-94. In 1996-97, there was a massive decline in capacity utilisation in case of all the public sector mills and as a result, the average rate went down to only 23% from 53% in 1995-96. The private sector average rate of capacity utilisation fell down to 85% from 89% in 1995-96.

iv) Labour productivity per man-day in terms of production, value of production and value added in the public sector textile mills were much lower than that of private sector textile mills. The average labour productivity in all the terms in all the private sector mills taken together generated a rising trend throughout the period with only a few sudden break; while a reverse trend was generated in public sector during the second half of the study period. In terms of production, average labour productivity in private sector was 9.64 kg, more than double from the corresponding figure of public sector. The productivity in terms of value of output and value added in private sector was almost three times higher than the corresponding figures in public sector. The increasing labour productivity in terms of production, value of production and value added in private sector was encouraging during the study period.

v) Efficiency of capital utilisation i.e., capital productivity was not good in public sector textile mills. The capital productivity in terms of value of output

decreased in most of the public sector mills during 1996-97 from the year 1987-88. The average productivity of all the public sector mills taken together was negative in five years owing to negative capital employed while the same happened to be positive in case of private sector mills during those particular years. But the average productivity in public sector mills was higher than that of private sector's in four years of study period. The private sector average of capital productivity decreased by 76.05% over 1987-88.

Capital productivity in terms of value added also showed a notable decrease in 1996-97 in all the public sector mills except two. The public sector average productivity rose to Tk. 0.05 in 1996-97 from (0.08) negative in 1987-88. The private sector average productivity declined to Tk. 0.26 in 1996-97 from Tk. 1.27 in 1987-88. Thus, capital resources were not utilised efficiently in private sector mills too.

vi) Idle capacity or man hour loss and production hour loss due to power failure, absenteeism, shortage of spare parts, machinery breakdown or maintenance, electric defect, shortage of raw cotton, strike, religious affairs etc., and stock piling resulting from poor sales performance and availability of foreign yarn at comparatively lower price were traced as the factors which affected the production performance of public sector textile mills as well as some private sector mills. Productivity of these mills hence came down. Higher labour productivity in private sector was resulted mainly because of better training on a motivation, effective utilisation of spindles with comparatively fewer number of workers engaged in production. Power shortage affected the production performance and productivity to a great extent in both public and private sector. Labour absenteeism was higher in public sector mills due to poor supervisory control over workers resulting in higher production loss, lower spindle utilisation and more unnecessary stoppage of machines as compared of private sector's.

7.1.2 Cost of Production and Sales Performance :

The cost affects the price of output and profitability ratios of an enterprise. Therefore, the analysis of cost of the enterprise is of utmost importance. Saha, S. K. compared the cost of production per lb. of yarn in the selected textile mills between the year of prior (1981-82) and after privatisation (1986-87) and found that, in all the mills both materials cost and conversion cost increased in 1986-87 from 1981-82. The change in material cost varied between 3.03% to 105.57% and it was 151.38% in conversion cost. His study further showed that out of six, three mills showed an upward trend in sales performance making the total increase in average sales by 7.32% as against decrease in average production by 6.28%. The present study, however, had the following findings :

i) The accounting system followed by the cotton textile mills under both public and private sector is integrated accounting system under which financial accounting and cost accounting system are integrated into a single system. Cost accounting system has been developed and used in practice in industrial sectors mainly to control the resources used in production process; whereas the financial accounting system has been developed to determine the results of business activity as a whole and also to fulfil the legal requirements of the state. But in the textile sector in Bangladesh, there is absence of effective and efficient cost accounting system. The cost accounting system is used simply to prepare a cost of goods sold statement by the management as a part of the annual reports. The cost information available from the cost accounting department of BTMC as well as member mills of BTMA was very poor and inadequate for planning and control purposes and for analysing cost of production. The management information system (MIS) of BTMC mainly assimilate the information supplied by the mills under the corporation but do not verify and justify the reasons for incurring such costs and thus the reports and statements prepared by MIS of BTMC are also not dependable and

trustworthy. Most of the member mills of BTMA do not maintain proper costing records. The informations available from the cost accounting department of these private sector mills were not dependable and reliable. So it can be said that the cost accounting system which is in practice in the mills under BTMC and BTMA does not ensure effective management control of cost of production.

ii) The material cost occupies the highest place in the cost structure of the textile mills. The public sector average relative share of material cost to the total cost of production changed in the same direction as their total material cost changed during the study period. But the private sector average relative share of material cost to the total cost of production decreased in 1988-89 and 1993-94 with the corresponding increase in their total material cost. The public sector average share of material cost to the total cost of production, as a whole was 51.74% while the respective figure was 62.57% in private sector. Use of interior quality raw material resulted in lower share of material cost in some public mills and production of low quality yarns, lower productivity, higher wastage and higher loss of value resulting in higher cost of production.

iii) Percentage of increase/decrease in average material cost in public sector mills was not in line with the corresponding changes in their average volume of production. But the average material cost increased/ decreased in the same line with the corresponding increase/decrease in average production of the private sector mills in almost all the years under study.

iv) The public sector average material cost per kg registered an increasing trend and the cost of all the public sector mills for the entire period was Tk. 52.62 per kg of yarn while the respective figure in private sector was Tk. 63.86. The overall trend of material cost per kg in private sector was towards increase but its range of variation was lower, indicating a steady trend as compared to that of public sector.

v) The wages and salary cost increased in the public sector mills in absolute amount and also in relative sense during all the years under study. But in private sector, although a minor fluctuation was observed in the relative sense during the period, the overall trend was towards decrease in as many as mills. The public sector average percentage of wages and salary cost to total cost of production for the entire period was 26.61% as against 13.83% of private sector.

vi) In public sector, the rate of increase in wages and salary cost was much higher than the rate of increase in production. Even in more than half of the years, the cost increased at a higher rate against the decrease of production. But in private sector, the situation was far better. The rate of decrease in cost was much higher than the rate of decrease in production; again the cost decreased as against increase in production, and in some years the rate of increase in wages and salary cost was much lower than the rate of increase in production.

vii) The wages and salary cost per kg of yarn was continuously rising in all the public sector mills during all the years under study. The public sector average cost per kg went upto Tk. 155.40 in 1996-97 from Tk. 16.63 in 1987-88. But the private sector average wages and salary cost per kg of yarn registered a downward trend and came down to Tk. 9.67 in 1996-97 from Tk. 16.39 in 1987-88. Thus the above findings leads one to conclude that private sector mills achieved better efficiency in labour management as compared to the mills under public sector.

viii) The average share of power and fuel cost to total cost of production in all the public sector mills as a whole was Tk. 9.13 during the period varied between Tk. 5.55 to Tk. 11.19; while in private sector, the share was Tk. 7.83 varied between Tk. 6.59 to Tk. 9.39. The average power and fuel cost per kg of yarn was also higher in public sector compared to private sector. The average per unit cost in all the public sector mills taken together was Tk. 14.81 in 1996-

97 registering 91.59% increase over 1987-88, while in private sector it was Tk. 7.29 in 1996-97 generating around 10% increase over 1987-88.

ix) The average percentage of conversion cost to total cost of production in all the public sector mills as a whole was Tk. 48.19 during the period, much higher than the respective figure of Tk. 37.45 in private sector. The average conversion cost per kg of yarn in all the public sector mills taken together increased to Tk. 224.35 in 1996-97 from Tk. 34.49 in 1987-88 and the same decreased to Tk. 32.01 in 1996-97 from Tk. 33.96 in 1987-88 in private sector.

x) The cost of yarn per kg in all the selected cotton textile mills under public sector registered an upward trend throughout the period of study with a very few sudden breaks. The average cost of yarn per kg in all the public sector mills taken together went up to Tk. 304.84 in 1996-97 registering 312.27% increase over 1987-88. The overall trend of per unit cost of yarn was increasing in private sector also but the same went up to 104.44 in 1996-97 registering only 36.13% increase over 1987-88.

xi) The reasons for higher cost of production in public sector compared of private sector were mainly increase in price of raw materials, higher wastage percentage, over staffing, labour disturbance, increase in wages and salaries due to implementation of Wages and Pay Commission Awards, low labour productivity, excess store consumption in some mills, low utilisation of capacity and under recovery of fixed overhead due to decrease in production. Moreover, power disturbance affected the production and thus cost of production to a great extent in both public and private sector mills.

xii) Sales achievement of the mills under private sector was also superior as compared to their counterparts in public sector. The average sales declined during the second half of the study period in all the public sector mills. In contrast, all the private sector mills could be able to increase their sales

remarkably during the second half of the period over the first half; and the average sales taking all the private sector mills as a whole showed a continuous increasing trend throughout the period. The average sales of the public mills fell down to Tk. 412.55 lakh in 1996-97 from Tk. 854.93 lakh in 1987-88 showing a decline of 51.74%. But the average sales of private sector went up to Tk. 4397.33 lakh in 1996-97 from Tk. 1383.40 lakh in 1987-88 registering an increase of 217.86%.

xiii) Our investigation through sales per employee also indicates a better efficiency of manpower in terms of sales in private sector mills as compared to public sector's. The average sales per employee taking all the private sector mills together went up to Tk. 335.73 in 1996-97 from Tk. 92.28 in 1987-88 registering an increase of 263.82%; but the same of all the public mills taken together went down to Tk. 49.19 in 1996-97 from Tk. 93.88 in 1987-88 showing a decline of 47.60%.

xiv) The factors resulting in the poor sales performance of the public sector mills are low productivity and poor quality yarn due to old and irretrievably outdated machinery, conventional technologies and methods in many of the public sector mills and poor quality of raw cotton, high price of yarn, administered pricing system, smuggled yarn at lower price, poor marketing capability etc. Per employee sales was lower in public sector than in private sector mainly due to higher rate of employee and decreasing sales quantum.

7.1.3 Profitability :

Sobhan and Mahmood observed in their study that financial performance was also seen to have declined in the textile mills in 1983-84, the year following as compared to 1981-82, the year before denationalisation. Saha, S. K. found a

better situation in his study. The average rate of return on total assets employed was 6.12% in 1986-87 as compared to average rate of loss of 18.37% in 1981-82 in the selected six disinvested mills.

But our evaluation of profitability of performance of the public and private sector textile mills during 1987-88 to 1996-97 witnessed the following :

i) The various measures of profitability reveals that the profitability position of cotton textile mills under public sector was extremely poor throughout the period of study; they were not running efficiently and they became financially sick. The situation was more serious during the second half of the study period. This is born out by the fact that despite the best-possible efforts, all the public sector mills could not earn even any gross profit during this period with only a very few exceptions. In the public sector as a whole average gross profit margin ranged between negative (5.24%) and (141.29%) during the second half of the period while it was between 2.05% and 16.91% during the first half; but the respective ratio ranged between positive 13.23% and 21.81% in private sector during throughout the period. Net profit margin ratio was negative during all the years except 1988-89 in public sector and it varied between negative (2.26%) and (219.24%) during the years other than 1988-89. The ratio was positive in six years and was negative in four years varied between negative (6.25%) and positive 6.52% in private sector.

ii) As regards operating expenses, the average ratio in public sector was much higher than in private sector during all the years under study. In public sector the operating expenses ratio varied between Tk. 91.15% and 267.70% during the period and in private sector the respective figures were 85.87% and 93.29%.

iii) Similarly, average return on investment and return on capital employed in the public sector textile mills were also negative in most of the years under study.

As against this, the private sector textile mills as a whole earned positive return on investment and capital employed during all the years under study. Return on their total investment ranged between 3.22% and 9.08% and on capital employed ranged between 2.71% and 45.30%.

iv) Return on shareholders equity and paid up capital also indicates better performance of private sector mills compared to public sector mills. The prior was inconsistent in almost all the public mills and in many of the years due to negative return and negative net worth while the same situation was observed in case of only one private mill. The average return on paid up share capital in public sector as a whole was highly negative in all the years except 1988-89 ranged between negative (63.63%) and (150.97%) while private sector mills showed positive return in four years ranging 23.24% to 69.45% and negative return in six years ranging (37.55%) to (314.68%).

v) The factors which adversely affected the poor profitability performance in public sector textile mills were: poor production performance and low productivity resulting from idle capacity mainly due to power failure, absenteeism, shortage of spare parts, shortage of back process and shortage of raw cotton; poor sales performance, increasing cost of production, shortage of working capital, increasing bank loan due to excessive idle fund in increasing stock piling and heavy interest burden there on, etc. As a whole, inefficiency at all levels due to absence of effective and purposeful management resulted in the poor profitability of public sector textile mills compared to private sector.

7.1.4 Management of Working Capital :

Hossain's study on BTMC textile mills concluded that the percentage of gross working capital to total assets is very high but turnover of gross working capital is very low and the use of working capital appears to be highly

unprofitable in the selected units. The inefficient handling of the different components of working capital of the individual units has resulted in losses in most of the selected units.

However, our study reveals that the working capital position and its management in the public sector textile mills were poor and inefficient as compared to private sector mills. This was reflected by the following facts:

i) The average size of gross working capital in all the public sector mills increased to Tk. 603.25 lakh in 1996-97 from Tk. 565.08 lakh in 1987-88 registering a growth of 6.75%, while the private sector average went upto Tk. 355.32 lakh in 1996-97 from Tk. 1085.46 lakh in 1987-88 generating a growth of 190.69%.

ii) It is surprising that almost all the public sector mills had an acute shortage of working capital during the study period. The position was more serious in some cases in which their net working capital deficit registered an upward trend. The public sector average of net working capital was negative during all the years except 1987-88 and 1988-89 ranging from negative Tk. (19.69) lakh to Tk. (615.02) lakh. On the other hand, only four mills of private sector experienced net working capital deficit during more than half of the years under study. The average size of net working capital taking all the private mills together was negative Tk. (70.38) lakh only in 1992-93 but thereafter it turned to be positive and increased to Tk. 937.03 lakh in 1995-96 and further decreased to Tk. 483.69 lakh in 1996-97.

iii) In the public sector, the year wise percentage of working capital to total assets was highly adverse during 1987-88 to 1996-97. The percentage of working capital deficit to total assets reached at 86.89% in 1996-97 generating 638.86% increase over 1987-88. But the private sector average

percentage of net working capital to total assets went upto 8.36% in 1996-97 registering 71.31% increase over 1987-88.

iv) As regards liquidity, the position was unsatisfactory in almost all the mills under both public and private sectors as their current and quick ratios were below the standard norms of 2:1 and 1:1 respectively in almost all the years under study. But the position was better in private sector. The overall trend of current ratio in public sector was towards decrease while it was towards increase in private sector. The average current ratio in all the public mills as a whole was 0.79 times during the period of study while the respective figure was 1.21 times in private sector.

v) There existed positive correlation between current assets and current liabilities in both the sectors but the degree of correlation was higher in case of private sector (r = 0.936) compared to public sector (r = 0.619).

vi) The average quick ratio in public sector came down to 0.29 times in 1996-97 and registered 57.97% decrease over 1987-88 while the same in private sector went up to 0.60 times in 1996-97 generating 15.38% increase over 1987-88. The private sector average ratio for the entire period was 0.55 times as against 0.43 times of public sector.

vii) A positive correlation was existed between quick assets and current liabilities in both sectors but the degree of correlation was higher in case of private sector (r = 0.922) as compared to that of public sector (r = 0.574).

viii) Private sector textile mills achieved better efficiency in cash management compared to public sector. Public sector average ratio of cash and bank balance to current assets ranged between 3.70% and 19.34% indicating an erratic position in cash management while the ratio varied in a smaller range from 3.18% to 9.22% in private sector. However, the

average ratio during the period as a whole was 5.82% in private sector as against 11.63% in public sector.

ix) Working capital turnover ratio showed an overall better efficiency of private sector mills in managing the working capital as compared to public sector's as there was a large amount of net working capital deficit in more than half of the public sector mills in many of the years. The public sector average working capital turnover ratio ranged between 0.57 to 117.43 times in negative sense except in 1992-93 and 1995-96 when the ratio was positive i.e., 0.67 and 14.83 times respectively. The private sector average ratio ranged between positive 0.92 times to 239.92 times except in 1987-88, 1991-92 and 1992-93.

x) Inventory turnover helps in determining the efficiency of the management in an enterprise and gives the rate at which inventories are converted into sales and then into cash. The greater the number of times per year that inventory turns over, more the efficiently it is being used. The average turnover of inventory of finished goods in all the public sector mills as whole was 30.97 times during the period ranging from 5.78 times to 79.35 times whereas it was 49.17 times in private sector ranging from 12.87 times to 38.62 times except 1990-91 when it was abnormally high. The higher turnover on an average indicates better use of inventory of finished goods in private sector.

xi) Continuous heavy operating losses, low and decreasing sales, shortages of working capital, inefficient handling of the different components of the working capital etc. made adverse impact on working capital management in public sector textile mills, whereas initial years of operation, inadequate working capital and inefficient handling of the working capital components affected working capital management in the private sector textile mills.

7.2 TESTING OF HYPOTHESES

Hypothesis-1 : *Private sector textile mills are far better in operational performance compared to public sector textile mills.*

To test the above hypothesis the following indicators relating to operational performance in respect to public and private sectors are compiled below :

The table depicts that the average production efficiency in terms of per spindle per shift production capacity utilisation rate, labour productivity in terms of production, value of production and also value added were much higher in private sector. The average cost of production recorded Tk. 95.21 per kg of yarn in private sector as against Tk. 117.63 in public sector. The sales per employee were also much greater in private sector. Thus the above hypothesis can be said to be valid.

Sl. No.	Operational performance indicators	Public sector	Private sector	't' value
1	Per Spindle Per Shift Production (in grams)	75.21 gm	86.85 gm	3.290*
2	Capacity Utilisation Rate	69%	89%	3.324*
3	Labour Productivity (production)	4.14 kg	8.16 kg	4.091*
4	Labour Productivity (value of production)	Tk. 388.32	Tk. 942.80	4.113*
5	Labour Productivity (value added)	Tk. 127.43	Tk. 327.31	4.979*
6	Cost of Production (per kg of yarn)	Tk. 117.63	Tk. 95.21	0.988
7	Sales Per Employee	Tk. 101.29	Tk. 239.49	3.955*

Notes : i)* denotes significant at 0.05 level of significance.

ii) Figures in brackets indicate negative values.

Hypothesis-2 : *Financial performance in terms of profitability of public sector textile mills is extremely poor than private sector textile mills.*

The following information relating to profitability of the public and private sector textile mills are grouped under in order to test the above hypothesis :

Sl. No.	Profitability Ratios	Public sector Mean Values	Private sector Mean Values	't' value
1	Gross Profit Margin (%)	(15.65)	18.19	2.316*
2	Net Profit Margin (%)	(41.12)	2.23	2.106*
3	Operating Expense Ratio (%)	127.85	90.10	2.312*
4	Return on Investment (%)	(10.02)	5.95	3.211*
5	Return on Capital Employed (%)	(24.71)	11.34	2.705*
6	Return on Shareholders Equity (%)	(12.24)	4.84	1.70
7	Return on Paid up Capital (%)	(3553.93)	(114.29)	2.112*

Notes : i) * denotes significant at 0.05 level of significance.
ii) Figures in brackets indicate negative values.

It is witnessed from the above table that the profitability ratios were highly negative in case of public sector as against the positive ratios in private sector. The negative return on paid up capital also showed a large variation between the two sectors. The operating expense ratio was much higher in public sector than that of private sector. Thus the hypothesis is worthy of support.

Hypothesis 3 : *The crucial factor hampering the performance of public sector textile mills is the poor management.*

In order to test the above hypothesis the following information relating to cost and working capital management are used :

Sl. No.	Indicators	Public sector Mean Values	Private sector Mean Values	't' value
1	Conversion Cost as % of Total Cost	48.19	37.45	3.674*
2	Wages and Salaries as % of Total Cost	26.61	13.83	4.856*
3	Power and Fuel Cost as % Total Cost	9.13	7.740	2.132*
4	Stores and Spares as % of Total Cost	2.74	2.63	0.266
5	Net Working Capital as % Total Assets	(27.51)	3.87	3.884*
6	Ratio of CA to CL (in Times)	0.793	1.213	4.452*
7	Ratio of QA to CL (in Times)	0.432	0.553	1.576
8	Cash as % of Total Current Assets	11.63	5.82	2.814*
9	Turnover of Working Capital	(11.84)	15.36	0.943
10	Turnover of Inventory of Finished Goods	30.97	49.17	0.763

Notes : i) * denotes significant at 0.05 level of significance.

ii) Figures in brackets indicate negative values.

The above information provide substantial support in favour of the third hypothesis as it is found that public sector textile mills faced higher conversion cost. Particularly power & fuel cost, wages & salary and stores & spares costs were higher in public sector. The ratios relating to liquidity and efficiency of working capital were relatively better in private sector. Hence the hypothesis holds good.

Hypothesis 4 : *Individual performance indicator has the ability to discriminate the performance between public and private sector.*

To determine the discriminating power of individual indicator, the sectoral mean value of the indicators were calculated in individual chapter and 't' test was also applied to measure the significance of the mean differences of the indicators

between public and private sector at 0.05 level of significance. The 't' values of the indicators used in the hypotheses testing reveals that out of 24, the 't' values of the 18 indicators are greater than the tabulated value of 't' (2.101) at 0.05 level of significance which means 18 indicators have the power to discriminate the performance of public sector textile mills from private sectors, and thus, this hypothesis can also be accepted

7.3 CONCLUSION

The above findings lead us to conclude that the overall performance of private sector textile mills is better than that of public sector textile mills in terms of better efficiency in production, higher labour productivity, lower cost of production, greater sales income, better profitability and better efficiency in cost and working capital management.

The profitability of public sector textile mills was extremely poor, as all the ratios were highly adverse during the last five years of the study period. The difference between the performance of two sectors was statistically significant. High cost of production, low capacity utilisation, low labour productivity, working capital shortage, poor sales performance etc. resulted in heavy losses in almost all the public sector textile mills. Operating expenses in these mills were so high that they could not earn even any gross margin during the later years. The privatisation of these mills are recommended to be faster.

The wind of the free market competitive economy is blowing all over the world. In view of the signing of GATT and WTO agreement, textile sector would have to face new challenge and strong competition. In order to survive in such competitive environment necessary measures must be taken to improve the overall performance of cotton textile industries in both public and private sector in a

variety of areas, e.g., modernising the present status of the textile industries, using appropriate technology, following acceptable pricing strategy, cost effectiveness, maintain quality standard, and privatisation of heavy loosing textile mills of public sector. However, it is expected that the 'Textile Policy-1995' would help the existing textile mills emerge from the crisis to perform better.

Our specific suggestions to improve the performance of cotton textile industries in public and private sector in different areas are provided in the next section.

7.4 SUGGESTIONS

In view of the major findings of the study, the following suggestive steps in various areas of operation are mentioned below for remedial action and rapid improvement of performance of both public and private sector textile mills in Bangladesh :

7.4.1 To Raise Production Efficiency and Productivity :

1) All the selected textile mills under public sector became uneconomical and sick. They have been using old and irretrievably outdated machinery in production. Replacement and modernisation of this machinery is essential in order to turn out quality yarn and to increase machine productivity. Though the government has taken up the programmes of balancing, modernisation, replacement and expansion (BMRE) but the progress in this regard has been rather slow. It thus requires revamping with greater efforts on the part of the government, financial institutions and other concerned agencies.

2) Planning should be introduced in each department of each individual mill for carrying out their operations. The functional areas like production, finance and personnel need to be thoroughly investigated at the mill level and corrective measures to be taken accordingly.

3) Effective production planning should be fixed timely in the light of demand, buyers preferences and needs.

4) On the basis of knowledge about the installed, planned and actual capacity to produce, measures should be adopted to optimise production capacities in the textile mills under both sectors. To increase the utilisation of capacity the following measures may be taken :

   i) Power failure is probably the most serious impediment to optimum utilisation of capacity and thus productivity improvement. Installation of power generators would only encounter the problem of power shortage and power cuts.

   ii) Adequate supply of spare parts and raw cotton should be assured at the mills particularly in public sector. Since scarcity of raw cotton is a plain truth in Bangladesh, the mills should search the probable substitute for cotton. viscose, rayon, polinosic, jute, various chemicals etc. should be blended with cotton in such a way that the requirement of cotton is lessened.

   iii) Preventive maintenance system should be developed in order to prevent the mechanical and electrical trouble.

   iv) It is necessary to look at the public sector textile mills as business ventures rather than as meant for creating employment for

workers. Concerted attempts should be made to pull down the labour force to the optimum level.

v) Absenteeism of workers may be removed by way of providing incentives or awards and increased salary to best performers to improve labour productivity.

vi) Labour disturbance emerges from the low living conditions, price hike, political motivation etc. which affects productivity should be solved through national policy planning.

vii) Workers participation scheme at different levels of management, revision of wages agreement, formulation of grievance committee and provision of welfare amenities are the steps which should be taken to harmonise industrial relations.

5) Productivity being the key factor, influencing the profit level, efforts must be taken towards improving the same. Maximum utilisation of the existing machines should be given top priority as against increasing the work load of the workers as it is relatively easier to achieve the former than the later.

7.4.2 To Reduce Cost of Production :

1) It is needed for the public sector textile mills to show better cost management efficiency by reducing the operating cost. Cost consciousness is lacking in the management of public mills in Bangladesh. For controlling the mounting cost, standard costing system should by introduced in all the public sector textile mills so that

a regular reporting on actual performance as compared to standard or budgeted costs can be possible.

2) To reduce the cost of production, maximum emphasis should be given on raw material and labour cost, which constitute a major part of the total cost of production. Material, human and monetary resources should be used in the production process more efficiently and effectively. Efforts should be taken to minimise wastage of materials and idle time. Strict supervision is necessary in the production process and excess manpower should be removed.

3) Inter-firm comparison should be made in case of both the sectors. The expenditure incurred by the various mills under each sector on this account should be compared and a free and fair discussion amongst the top officials should be made so that they could improve their performance. Through introduction of a good costing system with the objective of cost control, inter-firm comparison can be assured in both sectors.

7.4.3 For Larger Sales Realisation :

The better the management of the assets, the larger will be the amount of sales and brighter the profit possibilities. To obtain more sales realisation per employee it is suggested that :

1) Particularly public sector textile mills must pay due attention towards channels of distribution, market surveys, quality control system and sales promotion efforts to improve their sales performance.

2) Mills should produce fine varieties and high quality of yarn at minimum cost. A separate research and development wing must be established in all the textile mills.

3) Selling price should be competitive in the market and the cost of production and the market demand should be taken into account while fixing the prices of the textile products. The prices of the products in case of public sector are fixed by the BTMC. The individual mills should be of soul authorities to fix up the prices of their products.

4) A new kind of marketing strategy will have to be adopted to meet the new needs of growing RMG industries and there will be a need to intensify marketing efforts. Exploration of new markets and strengthening of old markets in the country as well as exploration of export markets will help considerably.

5) Textile being highly competitive industry and price being a sensitive factor, to maintain high profit mills must prefer lower margins and higher sales volume rather than the other way out.

6) Modern technology should be implemented to upgrade the quality of yarn produced in public sector mills so that market of the product may be expanded. Engineers should be sent to foreign countries for availing latest technology and developments in various areas.

7) All sorts of efforts must be made to prevent smuggling of yarn from the neighbouring countries and strict government policy is necessary in this regard.

8) The management of the public sector textile mills as well as of some private textile mills should raise funds to build up adequate working capital and they should also reduce the level of inventories in current assets, which will assist them in raising their turnover of inventories.

7.4.4 For Better Management of Working Capital :

1) Public sector textile mills have been facing acute shortage of working capital. Working capital should be increased by retained earnings in current assets or raise additional capital by sale of stock.

2) For better control of inventories, modern inventory control techniques like ABC analysis, economic order quantity, minimum and maximum level of inventory should be followed.

3) There should be proper co-ordination in planning of production and sales, and inventories should be estimated on the basis of production and sales requirement.

4) Turnover of inventory of finished goods may be increased by expanding net sales and/or reducing the inventory level.

5) The huge cash balances carried by the respective textile mills under both the sectors should be properly utilised.

6) Maintenance of reasonable current assets may increase the efficiency of working capital management on both public and private sectors. The frequent analysis of current ratio and liquid ratio may help in controlling of the volume of current assets.

7.4.5 To Improve Profitability :

1) The worst profitability position of public sector textile industry became a matter of serious concern both to the industry, BTMC and the government. With the view of improving profitability, it requires vigorous efforts to be made not only by the textile units and BTMC but also by the government.

2) Efforts should be made to reduce net deficit and to increase profit margin and efficiency in using capital employed in all public textile mills as well as some private textile mills, so that they can increase their overall profitability.

3) The performance and operational efficiency of public sector textile mills should be improved by closely monitoring the performance and analysing cost of each individual mill through a monitoring cell. The individual mill, BTMC as well as the government should take necessary preventive and curative measures to prevent and cure the sickness in the textile mills under public sector.

4) In the end it may be concluded that by implementing a cost reduction programme, improving production efficiency, increasing sales, inducting efficiency in the management of working capital, the profitability and overall performance of the cotton textile industry in both public and private sectors of Bangladesh can be improved and all this is sure to give fillip to national economy.

APPENDICES

Appendix-1 : Gross Output (Yarn) of the Cotton Textile Mills Under Study.

(Figure in lakh kg; 32s average counts)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	18.15	19.62	18.00	18.51	16.48	16.30	13.82	12.80	13.23	10.81
	A_2	14.59	16.20	14.80	13.92	13.57	13.29	13.80	10.49	9.89	3.28
	A_3	9.80	12.59	14.39	14.52	14.46	14.68	12.70	8.76	9.24	2.40
	A_4	7.70	8.04	8.13	8.41	8.93	7.60	4.35	5.57	5.93	3.32
	A_5	6.19	5.99	5.79	6.28	6.11	4.66	2.04	2.91	2.88	1.03
	A_6	8.07	8.30	9.04	12.22	12.79	11.01	8.04	7.56	4.81	1.84
	A_7	8.12	10.24	25.05	29.07	30.04	19.95	17.42	16.89	17.96	12.79
	A_8	10.43	10.77	11.44	11.29	11.53	10.02	7.99	8.65	8.14	1.75
	A_9	7.79	7.82	6.81	6.55	7.11	5.84	6.00	5.05	4.04	1.16
	A_{10}	9.38	11.25	13.59	10.69	10.33	12.04	12.58	9.81	5.27	0.57
	Ave	10.02	11.08	12.70	13.15	13.14	11.54	9.87	8.85	8.14	3.90
PRIVATE SECTOR	B_1	6.78	8.97	10.02	7.29	6.50	5.65	18.04	31.75	25.17	32.98
	B_2	14.83	14.67	15.80	13.86	16.03	18.08	18.39	21.01	19.91	17.59
	B_3	14.51	18.99	19.66	18.60	19.82	22.91	20.22	21.78	23.56	20.13
	B_4	34.00	31.00	40.19	44.65	47.64	65.48	64.39	54.87	52.18	46.00
	B_5	-	-	-	6.98	6.06	7.34	8.49	11.36	9.39	7.26
	B_6	-	-	4.44	9.27	11.47	14.56	20.19	21.30	20.36	16.99
	B_7	-	-	25.08	28.83	50.31	70.47	80.49	83.80	101.94	118.96
	B_8	-	-	8.15	9.16	10.55	11.04	15.38	19.24	18.87	22.28
	B_9	-	-	-	-	-	8.37	14.47	15.23	24.43	61.44
	B_{10}	-	-	-	-	-	29.09	31.97	32.15	27.84	29.52
	Ave	17.53	18.41	17.62	17.33	21.05	25.30	29.20	31.25	32.37	37.32

Source : Annual Reports and Accounts of BTMC and Member Mills of BTMA.

Note : '—' indicates the period before establishment and commencement of production .

Appendix-2 : Material Costs Consumed of the Cotton Textile Mills Under Study.

(Figure in lakh Taka)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	777.00	399.23	807.92	905.19	804.33	793.41	785.85	778.76	1039.77	889.03
	A_2	485.45	569.73	576.96	563.98	633.30	615.45	691.19	601.40	829.34	295.41
	A_3	389.64	462.14	551.84	660.61	721.55	628.99	553.28	565.53	714.71	168.57
	A_4	342.96	314.42	365.08	434.51	483.89	362.98	209.72	351.26	491.76	254.19
	A_5	211.71	264.19	285.00	331.24	373.48	246.64	120.42	209.36	278.22	83.48
	A_6	376.18	362.26	411.48	580.21	625.82	493.56	413.65	471.51	396.45	133.30
	A_7	361.89	375.41	1036.00	1350.38	1509.94	1359.23	788.13	1078.48	1557.01	1061.76
	A_8	287.22	334.37	420.86	467.67	479.31	391.70	327.08	489.47	602.38	129.86
	A_9	340.23	343.69	359.39	388.33	403.98	262.52	258.59	310.51	312.75	110.96
	A_{10}	420.45	436.43	572.34	570.44	589.91	597.03	653.37	572.22	433.66	62.34
	Ave	399.27	386.19	538.69	625.26	662.55	575.15	480.13	542.85	665.61	318.93
PRIVATE SECTOR	B_1	425.90	552.80	742.47	516.48	807.90	1064.92	1802.72	2689.28	2500.05	2745.22
	B_2	449.53	472.32	528.57	527.26	753.37	877.36	759.79	1036.14	1093.11	978.07
	B_3	597.13	774.15	993.59	1112.89	1428.58	1390.99	1119.25	1626.20	2412.91	1951.24
	B_4	1250.54	1180.91	723.23	1630.34	1836.88	2707.68	3109.47	4008.03	4399.80	2089.13
	B_5	-	-	-	545.54	470.53	509.24	526.64	954.90	935.83	718.89
	B_6	-	-	204.02	399.16	457.59	651.58	860.79	1043.75	1435.86	1223.96
	B_7	-	-	1218.96	2029.93	2607.45	4039.30	4932.34	7144.09	8063.23	9771.44
	B_8	-	-	439.41	475.76	605.20	757.99	947.00	1464.07	1635.06	1861.58
	B_9	-	-	-	-	-	568.31	619.57	1019.84	1452.55	1563.15
	B_{10}	-	-	-	-	-	1279.17	1356.00	2245.03	3095.45	2389.03
	Ave	680.78	745.05	692.89	904.67	1120.94	1384.65	1603.36	2323.13	2702.39	2529.17

Source : Annual Reports of BTMC and Member Mills of BTMA.

Note : '—' indicates the period before establishment and commencement of production .

Appendix-3 : Conversion Cost of Yarn of the Cotton Textile Mills Under Study.

(Figure in lakh Taka)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	660.00	676.86	726.97	765.49	700.83	853.03	887.77	670.99	823.80	807.58
	A_2	363.31	407.19	421.80	442.08	443.87	493.73	513.63	454.20	439.02	367.62
	A_3	311.96	365.30	417.85	432.43	426.30	475.21	500.49	442.84	445.65	369.39
	A_4	209.33	220.52	263.00	302.61	314.05	331.93	283.78	249.42	258.58	248.61
	A_5	288.95	225.96	238.35	244.61	248.93	259.11	165.87	161.35	168.54	160.43
	A_6	261.52	266.35	334.89	531.10	552.32	536.81	483.87	431.89	413.03	407.53
	A_7	259.85	272.62	822.45	1039.75	1066.45	1061.15	958.89	836.28	860.07	831.92
	A_8	326.79	334.53	381.99	416.82	415.29	431.60	410.33	406.86	403.61	359.50
	A_9	251.21	270.87	318.54	319.63	345.90	366.78	351.91	349.30	330.05	316.36
	A_{10}	468.27	506.73	583.22	577.31	545.03	602.95	723.70	648.26	628.47	517.15
	Ave	340.12	354.69	450.91	507.18	505.90	541.23	531.02	465.14	477.08	438.66
PRIVATE SECTOR	B_1	316.26	430.03	453.05	379.13	394.99	379.38	567.56	984.86	970.15	953.95
	B_2	476.74	500.91	560.56	675.45	416.07	481.32	502.53	510.00	461.05	427.41
	B_3	498.89	754.90	814.45	936.19	1047.29	1211.19	1182.93	1191.04	1259.79	1117.22
	B_4	769.67	902.76	1843.84	1230.84	1340.76	1794.77	1770.54	1657.80	1500.03	2310.67
	B_5	-	-	-	95.95	68.42	94.40	135.33	163.62	170.79	122.66
	B_6	-	-	87.20	271.19	354.33	408.57	567.39	705.54	758.19	410.16
	B_7	-	-	891.99	1062.29	1533.14	1829.83	1993.57	2393.34	3778.53	4339.45
	B_8	-	-	33.49	361.07	459.31	511.49	634.21	787.22	854.39	815.21
	B_9	-	-	-	-	-	447.10	409.30	392.19	592.47	723.18
	B_{10}	-	-	-	-	-	659.29	809.71	943.94	1003.61	1039.32
	Ave	515.39	646.95	673.51	626.51	701.79	781.81	857.31	972.88	1134.90	1225.92

Source : Annual Reports of BTMC and Member Mills of BTMA.

Note : '—' indicates the period before establishment and commencement of production .

Appendix-4 : Wages and Salary Cost of the Cotton Textile Mills Under Study.

(Figure in lakh Taka)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	274.00	283.36	324.01	344.82	359.73	447.63	467.89	384.48	362.75	471.96
	A_2	153.34	183.47	206.64	217.69	234.59	281.36	277.43	263.82	270.24	267.05
	A_3	165.63	177.80	215.90	228.98	239.13	283.51	298.90	283.82	303.59	302.61
	A_4	130.21	139.30	162.19	180.40	189.08	205.29	195.85	158.75	170.76	160.48
	A_5	148.63	134.51	163.08	167.64	174.88	185.21	138.19	122.21	131.74	134.83
	A_6	172.29	172.96	213.05	237.45	256.35	269.32	249.25	230.98	243.30	243.49
	A_7	171.78	177.42	350.57	405.17	423.76	459.12	468.98	402.50	436.71	444.15
	A_8	157.95	164.37	202.50	221.72	234.13	263.12	263.82	269.32	277.05	284.75
	A_9	74.26	85.70	109.33	115.84	129.14	146.22	174.79	171.12	175.38	185.43
	A_{10}	146.84	160.15	199.62	202.15	218.65	243.83	357.24	345.61	365.78	361.36
	Ave	159.49	167.90	214.69	232.19	245.94	278.46	289.23	263.26	273.73	285.61
PRIVATE SECTOR	B_1	158.26	172.72	218.15	213.74	226.75	165.80	215.53	203.78	192.51	187.53
	B_2	217.82	228.87	256.12	282.83	275.01	313.92	340.97	303.34	265.06	251.72
	B_3	190.64	229.14	295.66	291.45	325.66	404.81	350.59	342.49	383.57	324.25
	B_4	488.75	557.61	672.55	685.03	731.81	873.06	1890.70	885.51	725.54	837.03
	B_5	-	-	-	270.75	32.57	42.98	33.75	38.21	39.35	36.49
	B_6	-	-	38.20	85.35	101.10	117.73	169.71	167.42	193.64	205.30
	B_7	-	-	144.01	110.71	163.70	366.02	439.08	570.88	724.64	887.53
	B_8	-	-	55.23	80.11	95.32	107.13	133.54	157.21	184.51	198.36
	B_9	-	-	-	-	-	63.06	94.15	109.99	147.34	171.60
	B_{10}	-	-	-	-	-	98.13	117.27	126.34	146.38	180.61
	Ave	263.87	297.09	239.99	252.50	243.99	255.26	378.53	290.51	300.25	328.04

Source : Annual Reports of BTMC and Member Mills of BTMA.

Note : '—' indicates the period before establishment and commencement of production .

Appendix-5 : Power and Fuel Cost of the Cotton Textile Mills Under Study.

(Figure in lakh Taka)

	Mills \ Years	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	169.00	163.07	133.95	142.41	128.89	135.72	128.90	100.07	105.13	100.26
	A_2	120.77	120.28	121.72	122.89	123.81	128.85	137.16	101.48	95.81	46.72
	A_3	84.01	104.69	117.11	128.42	128.47	124.35	117.04	85.34	80.54	30.01
	A_4	41.50	42.96	46.53	51.24	52.53	44.14	26.99	29.00	31.52	22.91
	A_5	36.97	40.11	41.89	50.09	49.30	40.29	19.35	24.76	23.27	15.10
	A_6	57.61	61.40	85.02	112.25	106.85	100.55	84.93	67.93	58.12	33.38
	A_7	62.94	65.80	196.51	236.73	240.77	233.14	147.14	146.68	163.68	118.60
	A_8	86.63	91.69	111.60	116.49	102.16	101.88	89.92	85.45	83.89	31.98
	A_9	54.11	60.46	62.13	69.13	75.69	63.59	60.99	48.96	43.57	19.17
	A_{10}	90.54	114.63	137.17	130.82	116.17	131.79	142.89	118.66	95.10	16.16
	Ave	80.41	86.51	105.36	116.05	112.46	110.43	95.53	80.83	78.06	43.43
PRIVATE SECTOR	B_1	78.18	86.54	105.14	85.25	86.86	95.47	149.79	232.32	215.40	113.85
	B_2	87.20	91.52	94.36	99.86	98.21	103.41	105.13	110.61	105.28	113.53
	B_3	78.66	117.33	145.60	145.52	129.04	129.76	134.44	141.94	160.64	162.01
	B_4	124.63	136.94	141.65	254.10	300.71	412.36	386.06	391.51	380.32	361.77
	B_5	-	-	-	53.63	15.52	28.59	53.69	77.84	83.20	52.36
	B_6	-	-	26.98	75.95	92.09	117.80	155.27	193.17	187.88	94.39
	B_7	-	-	257.13	338.93	335.20	351.55	385.92	435.00	511.45	767.10
	B_8	-	-	79.35	88.97	116.00	137.26	162.54	179.23	183.79	226.53
	B_9	-	-	-	-	-	59.85	80.20	96.76	165.15	257.23
	B_{10}	-	-	-	-	-	128.73	145.21	190.21	255.24	282.12
	Ave	92.17	108.08	121.46	142.78	146.70	156.48	175.83	204.86	224.84	243.09

Source : Annual Reports of BTMC and Member Mills of BTMA.

Note : '—' indicates the period before establishment and commencement of production .

Appendix-6 : Depreciation Charged by the Cotton Textile Mills Under Study.

(Figure in lakh Taka)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	166.00	156.12	107.48	178.78	116.39	188.27	165.40	146.07	191.92	180.45
	A_2	73.26	66.79	61.06	56.67	51.89	47.31	43.74	42.92	29.52	35.86
	A_3	53.37	43.23	43.42	41.42	37.39	34.35	35.93	32.20	74.04	26.49
	A_4	4.06	6.42	26.02	44.66	45.43	48.04	47.81	44.86	40.44	37.83
	A_5	5.32	5.01	5.06	4.61	4.63	4.16	3.79	3.90	3.39	3.30
	A_6	4.83	5.51	15.58	157.21	167.16	141.12	127.29	114.39	111.24	109.93
	A_7	4.31	5.31	210.06	332.88	329.32	298.82	273.97	233.18	217.81	204.09
	A_8	48.55	44.46	42.16	38.98	39.44	36.37	33.11	30.64	24.41	23.60
	A_9	112.66	110.55	124.58	113.72	112.50	122.80	117.84	106.68	96.93	91.47
	A_{10}	210.52	191.05	198.74	193.11	180.20	182.24	166.56	149.89	139.48	126.93
	Ave	68.29	63.45	83.42	116.20	108.44	110.37	101.54	90.47	92.92	83.99
PRIVATE SECTOR	B_1	333.68	445.36	474.63	439.45	405.57	420.17	761.94	1193.75	1076.79	756.43
	B_2	8.59	8.85	9.12	9.56	9.33	8.40	8.95	11.02	7.71	11.87
	B_3	1.53	61.41	74.84	75.19	81.67	95.42	89.55	86.94	87.53	60.25
	B_4	97.34	91.50	113.75	135.22	132.63	290.75	246.65	226.13	206.28	185.33
	B_5	-	-	-	119.92	113.16	102.05	138.98	118.04	100.26	97.41
	B_6	-	-	22.44	85.45	135.72	142.40	164.78	193.55	185.98	163.14
	B_7	-	-	316.64	325.26	490.19	612.65	647.72	805.12	1028.97	1270.29
	B_8	-	-	123.51	170.71	183.98	188.77	212.58	252.53	222.10	188.44
	B_9	-	-	-	-	-	173.59	160.50	142.29	215.64	234.05
	B_{10}	-	-	-	-	-	341.16	387.05	384.34	358.58	335.82
	Ave	110.29	151.78	162.13	170.10	194.03	237.54	281.87	341.37	348.98	350.30

Source : Annual Reports of BTMC and Member Mills of BTMA.

Note : '—' indicates the period before establishment and commencement of production .

Appendix- 7: Net Sales of the Cotton Textile Mills Under Study.

(Figure in lakh Taka)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	1964.00	1651.36	1893.60	1880.11	824.09	1907.02	2102.67	778.76	1346.71	776.39
	A_2	1134.27	1407.31	1203.73	1217.50	708.11	999.84	1793.84	1142.12	691.14	513.10
	A_3	839.44	1037.71	1179.82	1187.06	1397.83	1260.63	909.48	1073.06	955.15	309.84
	A_4	601.09	681.81	688.01	773.78	833.69	464.52	620.79	588.06	626.91	373.37
	A_5	523.92	563.44	540.69	589.45	581.35	418.49	293.59	326.30	346.53	117.93
	A_6	663.90	742.26	791.74	1050.45	1173.08	808.51	875.32	874.00	509.07	247.91
	A_7	643.41	764.64	2199.11	2461.15	1944.95	2563.96	1827.64	2297.61	2138.85	1292.74
	A_8	779.40	781.09	881.99	859.54	680.30	726.99	685.05	1064.06	772.69	229.80
	A_9	643.89	721.18	611.24	738.23	344.38	733.76	606.48	505.95	453.23	168.69
	A_{10}	756.02	926.57	1084.27	868.45	427.85	1141.59	1344.05	1196.66	508.14	95.68
	Ave	854.93	927.74	1107.42	1162.57	891.56	1202.53	1105.89	984.66	834.84	412.55
PRIVATE SECTOR	B_1	787.91	1085.85	1265.99	961.76	1109.05	1454.79	2678.75	4081.99	3182.26	3733.78
	B_2	1001.19	832.76	983.32	836.78	1274.49	1412.42	1339.99	1932.02	1725.63	1130.76
	B_3	1169.63	1649.77	1859.55	1962.65	2310.94	2413.69	2213.24	2788.74	3492.57	3028.76
	B_4	2574.86	2667.61	3313.29	3558.94	3838.44	4892.68	5291.88	6403.15	6314.79	5183.42
	B_5	-	-	-	698.39	601.70	628.01	826.80	1308.28	1114.31	836.78
	B_6	-	-	386.87	899.39	1052.91	1223.77	1745.28	2168.14	2312.45	1967.77
	B_7	-	-	2370.21	3889.42	5472.10	7111.81	9261.30	11277.97	14835.44	17534..19
	B_8	-	-	1112.56	1248.69	1444.97	1498.38	2088.39	2779.51	2880.06	3065.91
	B_9	-	-	-	-	-	1136.67	1446.30	1965.51	2328.64	3079.50
	B_{10}	-	-	-	-	-	2657.29	3713.83	4685.40	5205.05	4412.47
	Ave	1383.40	1559.00	1613.11	1757.00	2150.58	2442.95	3060.58	3939.07	4339.12	4397.33

Source : Annual Reports of BTMC and Member Mills of BTMA.

Note : '—' indicates the period before establishment and commencement of production .

Appendix- 8: Net Profit After Tax of the Cotton Textile Mills Under Study.

(Figure in lakh Taka)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	287.00	532.13	329.84	228.74	208.41	04.68	(349.47)	(150.66)	(530.55)	(699.51)
	A_2	137.83	329.62	206.90	146.88	56.07	(90.73)	(57.93)	(56.24)	(211.83)	(449.32)
	A_3	(88.60)	62.25	90.98	16.49	125.31	64.67	(97.05)	(175.58)	(228.41)	(471.79)
	A_4	(1.71)	89.01	(18.59)	(93.15)	(40.97)	(161.24)	(252.61)	(123.48)	(152.33)	(290.79)
	A_5	(36.67)	16.74	(23.88)	(41.64)	(27.24)	(129.87)	(160.18)	(109.82)	(141.36)	(216.25)
	A_6	(44.47)	35.65	6.39	(257.74)	(189.64)	(308.69)	(440.20)	(321.92)	(442.82)	(589.51)
	A_7	(71.10)	30.51	(4.59)	(262.41)	(293.42)	(604.87)	(916.15)	(633.00)	(764.72)	(990.76)
	A_8	(15.21)	(31.87)	(49.87)	(116.80)	(92.93)	(282.92)	(331.78)	(212.46)	(255.78)	(446.49)
	A_9	(160.62)	(102.72)	(167.64)	(246.72)	(317.99)	(428.95)	(393.04)	(391.31)	(411.73)	(535.86)
	A_{10}	(351.17)	(294.49)	(274.21)	(451.42)	(464.93)	(607.16)	(662.99)	(459.11)	(704.42)	(741.35)
	Ave	(34.56)	66.68	8.89	(107.78)	(103.73)	(254.51)	(366.14)	(263.36)	(384.40)	(543.16)
PRIVATE SECTOR	B_1	2.40	3.07	2.99	0.98	(42.19)	(76.75)	(31.09)	(3.42)	(461.40)	(324.30)
	B_2	69.11	51.82	58.58	(147.39)	(128.85)	30.47	(11.14)	180.10	137.10	38.45
	B_3	63.63	83.59	77.67	(98.16)	(206.42)	(85.08)	(96.38)	81.23	(28.13)	(4.46)
	B_4	346.10	268.69	332.47	237.41	218.37	237.10	239.55	232.55	149.37	113.97
	B_5	-	-	-	(327.17)	(161.79)	(357.11)	(105.02)	(11.53)	(148.92)	(153.08)
	B_6	-	-	2.98	41.53	56.37	26.39	48.35	90.62	(29.76)	(421.89)
	B_7	-	-	217.11	139.30	442.46	424.24	706.52	983.42	1049.72	1462.07
	B_8	-	-	45.09	56.27	25.31	41.11	62.92	94.61	114.71	73.20
	B_9	-	-	-	-	-	15.71	65.64	167.25	106.98	129.40
	B_{10}	-	-	-	-	-	147.38	470.79	504.03	421.96	286.43
	Ave	120.31	101.79	105.27	(12.15)	25.41	40.35	135.01	231.87	131.16	119.98

Source : Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production .

ii) '( )' means net loss.

Appendix- 9: Net Capital Employed of the Cotton Textile Mills Under Study.

(Figure in lakh Taka)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	3923.00	4022.70	4494.68	4711.45	4360.16	4285.06	3968.28	3877.93	3534.20	2833.92
	A_2	1244.30	1516.42	1576.25	1610.61	1636.99	1511.65	1496.95	1558.89	1299.73	993.59
	A_3	318.04	324.05	397.55	408.75	519.01	578.35	375.48	1084.36	375.62	57.36
	A_4	80.60	215.59	601.67	583.31	628.56	483.88	514.05	488.66	487.03	381.69
	A_5	(30.69)	10.65	13.59	(18.39)	(51.13)	(184.56)	(433.07)	(572.75)	(511.24)	(694.06)
	A_6	(174.67)	537.75	1194.66	1134.93	1176.66	766.62	394.49	(75.42)	(130.52)	271.31
	A_7	184.49	770.77	2533.17	2129.91	1690.09	770.57	1402.53	939.55	(994.21)	(250.83)
	A_8	559.48	496.93	483.39	386.02	270.60	67.04	253.43	322.41	(57.77)	(360.15)
	A_9	1400.40	1357.95	1491.31	1127.37	737.32	112.33	1063.54	750.34	680.96	419.92
	A_{10}	1538.01	1040.44	982.50	451.88	(71.81)	(971.50)	803.23	539.57	129.62	(411.57)
	Ave	904.30	1029.33	1376.88	1252.58	1089.65	741.94	623.89	891.35	481.34	324.12
PRIVATE SECTOR	B_1	746.43	749.96	719.40	713.19	3705.37	4337.33	4630.93	4561.55	4008.16	5134.41
	B_2	122.59	2097.13	2094.20	1861.92	1674.08	1637.81	1724.03	1904.57	3168.20	3650.82
	B_3	1625.08	2288.64	2431.68	2674.95	2638.77	2819.82	2797.91	2990.34	3046.06	3287.42
	B_4	1626.76	1926.04	2118.20	2236.31	2333.95	3369.35	3426.97	3371.30	3802.44	4732.43
	B_5	-	-	-	846.00	743.02	670.36	592.72	581.19	432.27	1219.17
	B_6	-	-	1724.08	1717.57	1703.27	2414.60	2253.20	2283.33	2444.45	1796.05
	B_7	-	-	5002.56	4588.51	7688.58	7065.95	11539.76	13390.46	23738.56	23518.31
	B_8	-	-	2033.90	2110.15	2074.76	2211.62	2194.14	1756.27	2566.46	2790.88
	B_9	-	-	-	-	-	2539.81	2732.91	3733.69	3685.32	3455.07
	B_{10}	-	-	-	-	-	5183.48	6333.34	13092.14	19552.85	19693.49
	Ave	1030.22	1765.44	2303.43	2093.58	2820.23	3225.01	3822.29	4766.48	6644.48	6927.81

Source : Computed from Annual Reports of BTMC and Member Mills of BTMA.

Notes : i) '—' indicates the period before establishment and commencement of production .

ii) '( )' means negative capital employed.

Appendix- 10: Total Investment of the Cotton Textile Mills Under Study.

(Figure in lakh Taka)

	Mills \ Years	1987- 88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
PUBLIC SECTOR	A_1	4675.00	5132.58	4855.63	4881.72	4551.19	4607.86	4091.64	3961.03	5301.85	4708.77
	A_2	1480.88	1705.44	1798.18	1893.44	1958.39	1835.76	1613.44	1707.93	1587.29	1375.80
	A_3	891.69	957.85	934.70	856.25	887.16	912.85	798.74	1232.71	730.82	668.95
	A_4	282.22	632.62	751.59	746.83	832.14	987.70	722.68	675.28	802.79	669.78
	A_5	264.08	229.20	234.62	228.69	255.86	263.95	176.49	174.74	190.94	166.28
	A_6	169.20	1210.65	1925.52	1918.06	2060.35	2018.03	1814.50	1621.67	1656.03	1338.67
	A_7	836.59	1411.31	4742.99	4428.48	4734.42	4994.21	4042.92	3545.53	3231.06	3100.76
	A_8	872.86	917.44	957.75	919.08	1054.89	1056.64	943.55	713.18	775.70	630.56
	A_9	1637.90	1552.72	1913.18	1803.30	2006.91	1789.63	1581.01	1348.02	1253.30	1157.28
	A_{10}	2664.05	2581.57	2707.68	2542.81	2924.76	2849.21	2291.01	1985.90	1863.19	1697.05
	Ave	1407.45	1633.14	2082.18	2021.87	2126.61	2131.58	1807.60	1696.60	1739.30	1551.39
PRIVATE SECTOR	B_1	1674.68	1640.60	1634.68	1752.21	5243.14	5688.02	6384.64	6379.42	6070.53	7251.53
	B_2	1239.44	3154.79	3287.65	3029.92	3080.61	3047.41	2896.29	3065.12	4316.74	5214.09
	B_3	2172.26	2818.98	3313.78	3347.77	3296.84	3709.69	3776.98	3802.34	3500.02	4148.84
	B_4	2740.75	3480.96	3436.84	3693.25	3894.13	5376.45	5312.69	5555.33	5979.21	6516.62
	B_5	-	-	-	1275.04	1243.64	1218.18	1099.43	924.74	862.80	2078.96
	B_6	-	-	2117.85	2233.35	2340.36	3223.89	3381.20	3563.49	3603.62	3369.68
	B_7	-	-	5482.94	5977.20	9269.08	10103.15	15099.19	18722.17	30814.74	36511.01
	B_8	-	-	2282.30	2399.42	2364.27	2567.66	2594.18	2291.33	3135.65	3324.78
	B_9	-	-	-	-	-	2656.92	2984.35	4214.40	4227.53	3873.36
	B_{10}	-	-	-	-	-	7515.31	8805.53	15110.55	21608.07	24138.78
	Ave	782.71	1109.53	2155.60	2370.82	3073.21	4510.67	5233.45	6362.89	8411.89	9642.77

Source : Computed from Annual Reports of BTMC and Member Mills of BTMA.

Note : '—' indicates the period before establishment and commencement of production .

Appendix- 11: Trend Values of Production and Sales of the Cotton Textile Mills Under Study.

Sectors / Years	PUBLIC SECTOR				PRIVATE SECTOR			
	Average production (lakh kg)	Y_1 Trend Values	Average Sales (lakh Taka)	Y_2 Trend Values	Average production (lakh kg)	Y_3 Trend Values	Average Sales (lakh Taka)	Y_4 Trend Values
1987- 88	10	13.162	855	1080.495	18	14.403	1383	961.832
1988-89	11	12.526	928	1048.985	18	16.669	1559	1340.136
1989-90	13	11.890	1107	1017.475	18	18.950	1613	1718.440
1990-91	13	11.254	1163	985.965	17	21.201	1757	2096.744
1991-92	13	10.618	892	954.455	21	23.489	2151	2475.048
1992-93	12	09.982	1103	922.945	25	25.733	2443	2853.352
1993-94	10	09.346	1106	891.435	29	27.999	3061	3231.656
1994-95	09	08.710	985	859.925	31	30.265	3939	3609.960
1995-96	08	08.074	835	828.415	32	32.531	4339	3988.264
1996-97	04	07.438	413	796.905	37	34.797	4397	4366.568

Note : Trend Values have been calculated by the Method Least Squares (Y=a+bX).

$Y_1 = 10.3 - 0.318X$, $Y_2 = 938.7 - 15.755X$; $Y_3 = 24.6 + 1.13X$, $Y_4 = 2664.2 + 189.152X$

ANNEXURE

Interview Schedule

Performance of Cotton Textile Industry in Bangladesh: An Inter-Sectoral Survey

INTERVIEW SCHEDULE

[The data will be used for Academic Research only. Strict secrecy will be maintained]

A. GENERAL INFORMATION

1. Name of the Enterprise / Mill:
2. Registered office:
3. Year of Establishment / Incorporation:
4. Year of Nationalisation / Disinvestment (if converted):
5. Investment size:
6. Date of commencement of production:
7. Number of installed spindles:
8. Total number of employees on payroll:

   i) Officers ..... ii) Employees..... iii) Workers — Permanent / Casual

9. Is this a sick Enterprise? Yes / No
10. If yes, causes of sickness:

    i) .....

    ii) .....

    iii) .....

11. What measures are being taken for its revival or rehabilitation?
12. What major problems are being faced to run the mill successfully?

    i) Labour unrest, ii) Financial, iii) Shortage of raw cotton, iv) Marketing, v) Inefficient management, vi) Others (Please specify).

13. What modernisation programmes have been undertaken during the last ten years from1987-88 to 1996-97, (Please specify) :

    i) ....., ii) ....., iii) .....,

    iv)....., v) .....

14. Your contribution to national exchequer during the last ten years (1987-88 to 1996-97):

Year	Contribution to national exchequer	Year	Contribution to national exchequer
1987-88		1992-93	
1988-89		1993-94	
1989-90		1994-95	
1990-91		1995-96	
1991-92		1996-97	

B. PRODUCTION ASPECT

1. Installed capacity of production: .....

2. Your budgeted production and actual production during 1987-88 to 1996-97:

Year	Budgeted Production	Actual Production	Year	Budgeted Production	Actual Production
1987-88			1992-93		
1988-89			1993-94		
1989-90			1994-95		
1990-91			1995-96		
1991-92			1996-97		

3. What were the main causes of shortfall in production, if any. (please specify)

   i) ..... iv) .....

   ii) ..... v) .....

   iii) ..... vi) .....

4. What was the average rate of wastage of raw materials during the last ten years?

Year	Wastage of Raw Materials	Year	Wastage of Raw Materials
1987-88		1992-93	
1988-89		1993-94	
1989-90		1994-95	
1990-91		1995-96	
1991-92		1996-97	

5. Please provide the per spindle per shift production during 1987-88 to 1996-97:

Year	PSPS Production	Year	PSPS Production
1987-88		1992-93	
1988-89		1993-94	
1989-90		1994-95	
1990-91		1995-96	
1991-92		1996-97	

6. Are you facing the under utilisation of capacity? /Yes/ /No/
7. What are the main causes of under utilisation of capacity?

   i) Absenteeism, ii) Power failure, iii) Shortage of spare parts, iv) Shortage of raw cotton, v) Machinery break down, vi) Other factor, if any. (*Please rank the above the factors).*
8. Please provide your production loss due to above reasons during 1987-88 to 1996-97:

Year	Production Loss	Year	Production Loss
1987-88		1992-93	
1988-89		1993-94	
1989-90		1994-95	
1990-91		1995-96	
1991-92		1996-97	

9. Please provide the rate of Capacity Utilisation during 1987-88 to 1996-97:

Year	Capacity Utilisation	Year	Capacity Utilisation
1987-88		1992-93	
1988-89		1993-94	
1989-90		1994-95	
1990-91		1995-96	
1991-92		1996-97	

10. Measures / steps generally taken for improving productivity:

    i) ..... ii) ..... iii) .....

11. What other measures should be taken in this regard?

    i) ..... ii) ..... iii) .....

12. What are your suggestions to raise production efficiency and productivity?

C. COST ASPECT

1. Do you have a proper system of costing to ensure the cost control? Yes / No
2. If yes, is it i) Standard costing ,or ii) Budgetary control? i / ii
3. Please furnish the statement of costs during the last ten years (1987-88 to 1996-97).
4. What was the trend of cost of production-increasing / decreasing ?
5. If increasing, state the reasons. i)..... ii) ..... iii) .....
6. Please provide budgeted cost of production and actual cost of production during 1987-88 to 1996-97:

Year	Budgeted Cost	Actual Cost	Year	Budgeted Cost	Actual Cost
1987-88			1992-93		
1988-89			1993-94		
1989-90			1994-95		
1990-91			1995-96		
1991-92			1996-97		

7. Did you face the increasing material cost, wages and salaries, power and fuel cost or store and spare cost?
8. If yes, state the reasons.

    i) ..... ii) ..... iii).....

9. What are your suggestions to reduce cost?

    i) .....

    ii) .....

    iii) .....

D. FINANCIAL ASPECT

1. What are the sources of your working capital?
   i) Cash credit from Bank, ii) Internal resources, iii) Short term loan, iv) Money Market, v) Any other (please specify).
2. Please mention your yearly requirement of working capital.
3. What factors do you consider while estimating the requirement of working capital: i) Production cycle, ii) Cash requirements, iii) Terms of purchase, iv) Sales policy, v) Others.
4. Do you think that the size of working capital was adequate during the last ten years (1987-88 to 1996-97). /Yes/ /No/
5. If yes, how are you handling it? .....
6. If shortage of working capital is a chronic problem what are your suggestions to face it? i) ..... ii) ..... iii) .....
7. Do you review stock, credit and cash policies periodically to keep working capital at the optimum level? /Yes/ /No/
8. How do you control inventory? Is there a system of ABC Analysis so that control by exception in possible? /Yes/ /No/
9. Do you think idle investment in inventory is causing a financial loss to your mill? /Yes/ /No/
10. If yes, which component of inventory blocks the fund unreasonably?
    i) Raw materials, ii) Work-in-process, iii) Finished stock, iv) Stores and spares.
11. Do you keep constant watch on the solvency and liquidity of the mill? /Yes/ /No/
12. Do you have a credit and collection department? /Yes/ /No/
13. How many days are given to debtors as a normal practice to pay their dues?....
14. What factors do you generally consider in analysing credit worthiness and credit risk of the concern? .....
15. Do you allow discount for prompt payment? /Yes/ /No/
16. If yes, what are the terms of discount? .....

17. Is there any separate department or cell for cash management? /Yes/ /No/
18. How do you assess the adequacy of cash balance to be kept? .....
19. Do you have internal control system of cash? /Yes/ /No/
20. Do you invest excess cash in short-term securities? /Yes/ /No/
21. How would you evaluate the efficiency of working capital? .....
22. What are your suggestions to increase the efficiency of working capital management? .....
.....

E. MARKETING ASPECT

1. How do you fix-up the price of your products?
   i) Based on costs, ii) Govt. fixes the price, iii) BTMC/ Individual mill fixes the price.
2. Which factors do you consider in your pricing?
   i) ..... ii) ..... iii) ..... iv) .....
3. To what extent are prices set on sound cost, demand and competitive criteria?...
4. Price and quality should be competitive. Do you consider this? /Yes/ /No/
5. Are you selling your product only in national market or also in international market? .....
6. Do you think any problem of decrease in demand for your product? /Yes/ /No/
7. If yes, the reasons for: i) Low quality of product, ii) High pricing, iii) Smuggled yarn.
8. What are your suggestions to face it? .....
9. Do you have any Research and Development wing? /Yes/ /No/
10. Have you faced the problem of stock piling of yarn during the last ten years (1987-88 to 1996-97). /Yes/ /No/
11. Is there a proper control over stock of finished goods? /Yes/ /No/
12. How do you study your market potentiality? What is the basis of forecasting sales during the planning period? .....

13. What factors do you consider while making demand analysis? .....

14. Please state your budgeted sales and actual sales during 1987-88 to 1996-97:

Year	Budgeted Sales	Actual Sales	Year	Budgeted Sales	Actual Sales
1987-88			1992-93		
1988-89			1993-94		
1989-90			1994-95		
1990-91			1995-96		
1991-92			1996-97		

15. The reasons fall in sales (if any):

i) Bad quality of yarn, ii) Smuggled yarn, iii) High price of yarn, iv) Poor marketing capability, v) Any other (please specify).

16 How much competition do you face in local and international market?

i) Low, ii) Moderate, iii) High.

17. What major problems of marketing have you been facing during the last ten years (1987-88 to 1996-97).

i) ..... ii) ..... iii).....

iv) ..... v)..... vi) .....

18. How do you create new market for your products?

i) Through advertising, ii) Participation in International Trade Fair, iii) With Government assistance, iv) Any others (please specify).

19. Do you think that your enterprise is being effected by Free Market Economy?

/Yes/ /No/

20. If yes, what sorts of effect do you face? i) ..... ii) ..... iii).....

F. PERSONNEL ASPECT

1. How do the workers express their grievances mostly?

i) Agitation, ii) Strike, iii) Go-Slow, iv) Any other (please specify).

2. Do you have the provision of workers participation in management? /Yes/ /No/

3. Is your mill over staffed? Yes No
4. If yes, at what level and what extent? ....
5. State the causes of overstaffing in your mill. .....
6. How do you face the problem of absenteeism? .....
7. Did you have decline in productivity? Yes No
8. If yes, state its reasons? .....
9. Do you have any system to evaluate the performance of workers at different level? Yes No
10. What welfare measures for employee does your mill undertake?
    i) ..... ii) ..... iii) .....
    iv).....v) .....
11. Is there any provision for workers' training and education? Yes No
13. Have you any management training centre of your own? Yes No
14. Is there any arrangement for executive development programme? Yes No

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