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NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH

Assessing the Prospects for India's Textile and Clothing Sector

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Foreword

The Textiles and clothing industry is the second most important economic activity in the country in terms of employment generation (after agriculture). It is also one of the major sources of export earnings for the country. Its share in manufacturing value added is estimated currently at about 12 percent. The textile industry is presently in a state of flux due to the severe contraction in export and domestic demand in the wake of global economic and financial crisis. Major business restructuring is taking place across the industry. The government is also considering measures to support the industry on which livelihood of millions of people is dependent.

The industry is afflicted by slow and uneven modernisation across various segments. Insufficient modernisation is especially the case with dying and processing, weaving, garments, non-woven and technical textiles segments. Existing policies for modernization such as Technology Upgradation Fund Scheme (TUFS) and policy to attract FDI need to be properly designed to allow investments where they are most essential. This requires an understanding of the state of the textile and clothing industry so that relevant policy decisions are taken on the basis of facts and figures.

This study is an attempt to provide alternative estimates of basic parameters of the industry (number of units, output, value added, employment, number of machines/looms, etc.). The study provides a review of the government policies and programmes for the industry by analysing the relevant documents. It provides some insights into the corrections required in various policy measures and explores various measures to make the industry more efficient and competitive.

The study looks at a wide range of aspects such as stages of processing, sectors of production, their competitiveness, retail marketing, number of intermediaries involved from factory stage to final consumer stage and margins and value addition by them. It also looks into the state and potential of technical textiles in India.

We are grateful to Ministry of Textiles and Ministry of Commerce and Industry, Government of India, and the Confederation of Indian Textile Industry for entrusting this study to us. We acknowledge their support not only in terms of funding this study but also for their inputs through discussions at various stages of the study.

We hope that the study will be helpful in better understanding the constraints faced by textiles and clothing industry and help the decision makers in formulating policies which could help the industry to sharpen its competitive edge, especially in facing the current global economic slowdown.

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Director General
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Abbreviations and Acronyms

ACD	Additional Customs Duty
AEPC	Apparel Export Promotion Council
ASI	Annual Survey of Industries
ATDCs	Apparel Training and Design Centres
ATIRA	Ahmedabad Textile and Industry Research Association
BTRA	Bombay Textile Research Association
CAD	Computer Added Design
CAGR	Compound Annual Growth Rate
CAM	Computer Added Manufacturing
CMIE	Centre for Monitoring Indian Economy
CITI	Confederation of Indian Textile Industry
CPCB	Central Pollution Control Board
CPPs	Captive Power Plants
CSO	Central Statistical Organization
DGCIS	Directorate General of Commercial Intelligence & Statistics
DME	Directory Manufacturing Establishment
DMT	Dimethyl Terephthalate
ECTT	Expert Committee on Technical Textiles
FDI	Foreign Direct Investment
FITE	Federation of Indian Textile Engineering
GDP	Gross Domestic Product
GFA	Gross Fixed Asset
GFCF	Gross fixed capital formation
GST	Goods and Services Tax
GVA	Gross value added
IFPRI	International Food and Policy Research Institute
IIHTs	Indian Institutes Handloom Technology
ITIs	Industrial Training Institutes
ITMF	International Textiles Manufacturers Federation
MBOs	Multi Brand Outlets
MEG	Mono Ethylene Glycol
MFA	Multi-Fiber Agreement
MODVAT	Modified Value-Added Tax
NAS	National Accounts Statistics
NCR	National capital Region
NDME	Non-Directory Manufacturing Establishment
NHDC	National Handloom Development Corporation
NIC	National Industrial Classification
NIFT	National Institute Fashion Technology
NITRA	Northern India Textile Research Association
NSSO	National Sample Survey Organisation
NTBs	Non-Tariff Barriers
NTC	National Textile Corporation
NTP	National Textile Policy
OAME	Own Account Manufacturing Enterprises
OTC	Office of Textiles Commissioner
PTA	Purified Terephthalic Acid
R & D	Research and Development

SCM	Supply Chain Management
SIMA	South India Manufacturing Association
SITRA	South India Textile Research Association
SITRA	South Indian Textile Research Association
T&C	Textile & Clothing
TNCs	Trans National Corporations
TRAs	Textile Research Associations
TUFS	Technology Upgradation Fund Scheme
VAT	Value Added Tax
WPI	Wholesale Price Index
WTO	World Trade Organisation

Executive Summary

I. Main Findings of the Study

The textiles and clothing industry occupies a very important place in the Indian economy in terms of its share in employment, value added and export earnings. But the industry is dominated by small, fragmented and non-integrated units with the exception of spinning sector. The spinning segments production is dominated by large units and has been able to undergo significant modernization at a rapid rate. In recent years, a trend towards consolidation and integration with the value chain upstream along with modernization in segments like garments has been witnessed. The ginning, weaving and processing sectors, on the other hand, lags behind as regards modernisation. Within the weaving sector, increasing dominance of the powerloom sector is being witnessed over the years. The garments sector is undergoing significant expansion and modernization process in recent years and this opportunity has been created through de-reservation. De-reservation of garment sector, introduction of TUFS, lowering of customs duties and MFA phase out are the major policy changes responsible for bringing these changes in the environment. The recent global slowdown has however impacted the prospects of this sector also.

The main findings of the study are discussed in detail below.

I.i Indian Textiles and Clothing Industry in Mill Sector (Using CMIE Prowess data)

- The anaylsis of data available from prowess indicate that capacity utilisation of spinning sector vary in the range of 70% to 90% during 1990-91 to 2006-07 and average for seventeen year period is estimated at 79%. In weaving and kinitting, the capacity utilisation in the organized segment varies between 50% and 70% and average for the period 1992-93 to 2006-07 is estimated at 60%. The capacity utilization in the organized garments sector is estimated in the range of 63% to 70% during 1994-95 to 2006-07 and average for the period is estimated at 66%.
- The utilisation of working spindles improved mainly because of improvement in working among the modern units/spindles. The idle spindles share in installed increased from 16.6 percent in 1990 to 28.48 percent in 1996. The spinning data after 1996 include SSI units and the share of idle spindles increased from 30.55 percent in 1996 to 34.17 percent in 2005. However, this led to better utilization of working spindles, which improved from 80.71 percent in 1990 to 86.10 percent in 1996 (86 percent if SSI units are included) and further to 89 percent in 2005 as per Textile Commissioner data.
- Bedi & Cororation, IFPRI (DP), 2008 estimated that the excess use of spindles over the minimum required at 2005 technology declined from 24.37 per cent in 1990 to 14.74 per cent in 1996. Data after year 1996 include smaller size spinning units. Considering this, the excess use of spindles declined from 17.10 per cent in 1996 to 9.22 per cent in 2005. Bedi &

Cororation, IFPRI (DP), 2008 estimated the average productivity growth in spinning sector for the entire period at 2.06 percent per annum, though there are variations within the period. The growth in productivity for 1983 to 1990 is 0.23 percent. This growth improved to 2.37 percent during 1990–2005.

- Bedi & Cororation, IFPRI (DP), 2008, estimated that most of operational spindles are of age less than 30 years old during 2005-06. A few working spindles however were of much older age and were of very low productivity. Since modern spindles were utilised much more optimally compared to older ones, the productivity index was not affected much. Most of spindles older than 30 years are awaiting clearance for closures or installed in NTC units in which capacity utilisation is very low.

I. ii State of Overall Textiles and Clothing Industry in India

Estimates of Units Engaged in Various Activities

- There exist 8.97 lakh units belonging to weaving segment i.e units in which fabrics is the main production as per the NSSO, 62nd round data on unorganized manufacturing sector, out of which 3.55 lakh are running on power as per the definition laid down in this study. This means 60.5 per cent of units are running without the aid of power and can be identified as hanldomm and hand knitted units. The estimated value of output produced in weaving segment account for Rs 32134 crore during 2005-06 and is anticipated at 39950 crore during 2008-09. The value of outputs derived using unit-wise ASI and NSSO 62nd round unorganised manufacturing data are adjusted using values from NAS, CSO data.
- The number of units producing made up in the unorganized sector are estimated at 1.68 lakh. The share of handloom units is 83.7 of total units. However in case of certain made-up products such as manufacture of curtains, bed covers, crocheted made-ups etc, the most of units are running on power. The total value of output produced in made-ups units both in factory and non-factory sector is estimated at Rs. 2298 crore, which is anticipated to increase to Rs. 3229 crore during 2008-09.
- Processing is another important activity in which more than 80 thousand units are involved in the non-factory sector. Most of these units are OAME type. Large numbers of such units (58.8 %) are working without the aid of power. This shows the condition of processing units in India. The total value of output produced by processing units is estimated at 11494 crore during 2005-06, including both factory sector and non-factory sector units. The anticipated value of output for year 2008-09 is Rs 16148 crore.
- The number of units involved in knitting and crocheting activity is estimated at 23362, which include 13827 OAME units. A significant proportion i.e. 40.9 per cent of knitting and crocheting units are running without the aid of power. The estimated output in knitted and crocheted products is estimated at Rs 3273 crore.

- The numbers of units involved in wearing apparel are estimated at 17.55 lakh. Significant percentages (45.2 per cent) of such units are running without the aid of power. OAME units account for 14.68 lakh and the share of units running without power among OAME units is 48.6 per cent. The turnover of wearing apparel units for both factory and non-factory sector units is estimated at Rs 65060 crore.
- Bedi & Cororation, IFPRI (DP), 2008, estimated value of output for cotton and synthetic products at Rs 129410 crore as against NAS estimates of Rs 168582 crore during 2005-06. The reason for this difference is that Bedi & Cororation, IFPRI (DP), 2008 analysis is confined only to cotton and synthetic products and authors took care of double counting by excluding intermediate values of output. Bedi & Cororation, IFPRI (DP), 2008, estimated value of output for cotton and synthetic products at Rs 129410 crore as against NAS estimates of Rs 168582 crore during 2005-06. The reason for this difference is that Bedi & Cororation, IFPRI (DP), 2008 analysis is confined only to cotton and synthetic products and authors took care of double counting by excluding intermediate values of output. The total value of output of textile and clothing industry during 2007-08 is estimated at Rs 279503 crore. The share of factory sector in it is estimated at Rs. 196466 crore i.e. 70.1 per cent during 2007-08.
- The value added share in output is estimated at 26.7 per cent i.e. Rs. 74492 crore. The share of value added in output of factory sector is much lower at 18.7 per cent compared to non-factory sector share of 45.4 per cent.
- The number of power operated weaving and knitting units (powerloom, hosiery and mill) producing cotton and synthetic products is estimated at 5.09 lakh during 2005-06. These units include even those weaving units in which weaving activity is not one of the major activities. Around 54.1 per cent of these units are belonging to non-factory sector. This includes a large share of OMAE accounting for 74.35 per cent of the total powerloom units. NDME units account for 11.67 per cent and DME 8.19 per cent. There were around 5.04 per cent units belonging to small and medium sector range. The share of medium sector is very negligible and accounts for 0.29 per cent. The large unit accounts for 0.45 per cent.
- The number of manually or hand operated units (handlooms and knitted) producing cotton and synthetic products are estimated at 11.29 lakh during 2005-06 (more than double that of powerloom). Around 98.6 per cent of these units are belonging to non-factory sector. This includes mainly OAME units covering 93.3 per cent of the total handloom units. Thus most of the handloom units are still run as family owned units without any hired worker. NDME units' accounts for 4.3 per cent and DME 1.5 per cent of the total number of handloom units.
- The number of employees estimated from the ASI and NSSO 62nd round data on factory and non-factory sector respectively (for all fibres) are 12.58 million during 2005-06. The

estimates from employment- unemployment NSSO 61st round are 16.98 million during 2004-05.

Revised Estimates of Production of Fabrics and Diversion of Hank Yarn

- Bedi & Cororation, IFPRI (DP), 2008, using appropriate conversion rate of yarn into fabric indicate that the total production of fabric is 43,392 million square meters in 2005–2006, whereas the official estimate indicated a highly inflated figure of 48,808 million square meters. It is observed that data in government's statistics have consistently overestimated total production except for in the initial year of 1983. Furthermore, the margin of error increased in the 1990s, reached a peak at around 22.5 percent in 1996–97 but has declined since then and is estimated at 12.5 per cent in 2005–2006. Most of the difference can be attributed to the 100 percent cotton fabrics, the production of which has always been overestimated in official statistics. The extent of overestimation of cotton fabrics is 86 percent in 1983–84, 27.3 percent in 1991–1992, 41.3 percent in 1999–2000, and 40.2 percent in 2005–2006.

  The analysis is extended for the period 2006-07 and 2007-08 in this study using the same method. The official estimates are 10.2 per cent higher in 2006-07 and 10.8 per cent in 2007-08 compared to derived estimates of production of fabrics. The estimates of production of fabrics are estimated at 49871 million square metres as against official estimates of 55257 million square metres during 2007-08. The official data for cotton fabrics is over-estimated by 39.6 per cent during 2006-07 and 38 per cent during 2007-08 comapred to derived estimates.
- The growth in production of fabrics also varies substantially between derived estimates and official estimates. The per cent growth rates for derived estimates of cotton and synthetic fabrics are estimated at 5.6, 5.2 and 5.7 per annum during the period 1983-84 to 1990-91, 1990-91 to 2000-01 and 2000-01 to 2007-08 respectively as against estimates of growth of 8.3, 5.6 and 4.8 per cent derived using official estimates of production of fabrics.
- The share of powerloom sector using derived estimates using derived estimates show continuous rise and peaked at 75.5 per cent of the total cotton and synthetic fabrics production during 2007-08. The hosiery sector showed highest growth and its share increased rapidly to 16.1 per cent by 2007-08. On the other hand, the share of mill and handloom sector is showing steep decline and is estimated at 3.6 per cent and 4.8 per cent respectively during 2007-08. However, the decline in mill sector production got arrested after 2003-04 and the production grew marginally in the sector during the period 2003-04 to 2007-08. The production in handloom sector however showed no signs of such reversal and is continuously declining. The derived estimates of production of cotton and synthetic fabrics in the handloom sector are estimated at 2382 million square metres.

In case the diversion of hank yarn is not taken into account, the revised estimates merely on the basis of scientifically drawn conversion rates are estimated at 4289 million square metres as against official estimates of 6962 million square metres.

- The revised estimate of production of fabrics is then used to derive value added and employment in cotton and synthetic textiles and clothing sector.

I. iii Analysis of NCAER, 2008-09 Survey data

The analysis in this chapter is based on NCAER 2008-09, survey. The weighted per unit ratios are derived by applying multipliers on unit-wise data. These weighted average ratios per unit are then applied on estimated number of units' prodcuing fabrics. Unit-wise NSSO 62nd round data on unorganized manufacturing sector and ASI data are used and anaylsis at NIC five digit industry level is undertaken to identify all industries in which fabrics could be produced (as main product or small share of total production). The results derived by multiplying the number of units with per unit weighted ratios for each size classs are considered as estimates for year 2005-06. This is because the data on number of units is for year 2005-06 while ratios per units are for year 2008-09. Per unit ratios in quantity don't change much in short span of time. In case the ratios are in value terms, the estimates so derived should be treated as values for year 2005-06 at 2008-09 prices.

The purpose for undertaking survey was to authenticate the estimates derived using scientifically drawn yarn to fabrics conversion rates and at the same time find out other details about sectors of fabrics production.

Units operating with the aid of power (Powerloom, Hosiery and Mill Sector Units)

It has been estimated that OAME units running with the aid of power (powerloom and knitted) produce on an average 3483 million sq. mts. fabric per year, whereas NDME units produce 1685 and DME 7759 million sq. mts. The production in small to medium size units is estimated at 15408 million sq. mts, medium size at 2057, whereas large units produce 9501 million square meters fabrics. The overall fabrics production from units operating with the aid of power (powerloom, knitting and mill sector) account for 39893 million sq. metres, which matches with the estimates for the similar sectors, derived on the basis of scientifically drawn conversion rates.

- The value added estimated in the units run with the aid of power is estimated at Rs. 322491 million during 2005-06 at 2008-09 prices. DME sector constitutes largest share of 37.9 per cent of this segment. The units falling under NSSO data, but as per definition belonging to factory sector constitute a large chunk of 19.9 per cent share of this segment's value addition. This indicates the kind of underreporting the units indulge in while reporting their activity in

this segment (mainly powerloom and hosiery sector units). The share of large size units accounts for 21.5 per cent of the total value addition in this segment.

- The employment in power aided units is estimated at 1.62 million. The major employment generation (35.2 per cent) is taking place in OAME units. DME units constitute 20.7 per cent share, large 9.0 per cent and NDME 12.1 per cent of the total employment generation in the powerloom sector.
- It is estimated that total 1.55 million looms are installed in powerloom, knitting and mill sector during 2005-06. The projected looms during 2007-08 are estimated at 1.68 million, out of which 1.36 million are expected to be installed in powerloom sector for weaving cloth.

Units Operating Manually (Handloom and Knitted Units)

- The ratios derived using survey data are mainly of such units, which are primarily engaged in weaving activity. However, the number of units derived from NSSO data on unorganised manufacturing sector and ASI sector are those which are engaged in weaving activity either fully or partially. Thus care has to be taken to factor in this while applying ratios on the number of units. In addition to this, several units remain closed and non-working throughout the year, which also need to be factored in.
- From our sample survey, it is estimated that OAME handloom and knitted units on an average produce 1054 million square metres fabric per year, whereas NDME units produce 498 million square metres and DME 628 million square metres of fabrics. Small to medium handloom units produce 492 million sq. mts of fabric. Medium sized handloom units produce 310 million square meters; where as the large handloom units produce 478 million square meters of fabric per year. It is estimated that over all production of fabrics from handloom and knitted units is estimated at 3460 million square metres during 2005-06. In case, the production in knitted units run manually is excluded, the estimated production by handloom sector is estimated at 3145 million square meters as against estimates of 2604 million square metres during 2005-06 derived on the basis of revised conversion rates and diversion of hank yarn consumption. The official estimates of handloom production are estimated at 6101 million square metres. The obligations imposed on production of hank yarn, which is meant to be consumed in handloom sector, are not able to ensure the survival of handloom sector. The difference could be attributed to the fact that certain handloom unit consume cone yarn.
- Many handloom units during the survey reported that they are indifferent between usage of hank and cone yarn and their main considerations apart from easy availability are price differences and kind of processing. The handloom sector was consuming 45 percent more of than cotton hank production during 1983 and 23.5 percent more in 1991–1992, started consuming 55 percent less in 2000–2001 and 46 percent less in 2001–2002. The situation after 2002-03 is not comparable as the hank yarn production reduced considerably subsequent

to the reduction in obligation on hank yarn from 50 per cent to 40 per cent of the total woven yarn delivered to decentralised sector. The consumption of cotton hank yarn was 15.3 percent less during 2002-03, 22 per cent less in 2003-04, 25 per cent less in 2004-05, 33.6 per cent less in 2005-06, 44.2 per cent less in 2006-07 and 46.9 per cent less in 2007-08 than what the mills were producing under obligations.

The analysis for diversion of hank spun yarn was also made possible after 2004-05 as Textile Committee started coming out with information related to consumption of spun handloom fabrics also. The consumption of spun hank yarn was 20 percent less during 2004-05, 27.5 per cent less in 2005-06, 37 per cent less in 2006-07 and 42 per cent less in 2007-08 than what mills were producing. Obviously, the obligations imposed are not ensuring the survival of handloom sector.

- The fact remains that despite mandatory obligation to produce hank yarn, on mill sector, the handloom sector is dieing. The availability of hank yarn at remote area is not easy to improve and is not very efficient way of justification equity or social justice. The social security net, improving marketing R & D, supply network for raw material, fund availability are the challenges the Government need to address in general to meet these objectives.
- The estimated value added in the handloom and hand knitted sector is Rs. 44493 million during 2005-06 at 2008-09 prices. NDME sector constitutes largest share of 23.84 per cent of the total value added in handloom and hand knitted sector and OAME accounts for another 23.21 per cent share. Large handloom units accounts for 11.0 per cent share in terms of value addition due to presence of large co-operatives in the handloom sector. Medium sector accounts for only 3.43 per cent.
- It is estimated that total 1.685 lakh looms including manually run knitted were installed in handloom and knitted sectors. The looms belonging to handloom sector are estimated at 1.584 million.
- The employment in handloom sector is estimated at 2.21 million. 71.5 per cent of the total employment generation in the handloom sector is taking place in OAME units. NDME sector constitutes 7.7 per cent share, DME 5.9 per cent, small to medium 5 per cent, medium size units 2.7 per cent. Due to existence of large number of large size co-operatives, large size units constitutes 7.3 per cent share of the total employment generation in handloom sector.

Total number of units related with weaving activity: Power aided and run manually (Mill, powerloom, hosiery and handloom sector)

- The total number of units producing woven and knitted fabrics and made-ups adds up to 16.39 lakh, out of which 68.9 per cent belong to units run manually (handloom and knitted units). The total employment generation for production of woven and knitted fabrics and made-ups is estimated at 3.83 million. The number of looms installed in powerloom, mill,

hosiery and handloom sector is 3.24 million. The total fabrics production for the year 2005-06 is estimated at 43353 million square metres, which is almost similar (43392 million square metres) to the estimates derived in Chapter 2 of this study using revised conversion rates. These estimates are however much different from the Textile Committee estimates of cotton and synthetic fabrics production of 48808 million square metres.

- Handloom sector share is higher compared to powerloom and mill sector in terms of employment, looms installed and number of units, but lower in tems of production.
- The value added in textile and weaving for the cotton and synthetic products is estimated at Rs 366983 million during 2005-06 at 2008-09 prices. This is 10 per cent lower than the total value added in textiles sector as per NAS estimates for the same year.
- The estimated employment in units producing fabrics and related products is estimated at 3.8 million, which include 1.6 million in units run with the aid of power and 2.2 million in units run manually. These estimates are much lower than estimates derived from ASI & NSSO 62nd round data on unorganised manufacturing sector for textile sector, which shows employment generation to the extent of 5.06 million. The reason for the lower estimates is that 3.8 million is estimate of employment in units associated with production of fabrics (partially or fully), while 5.06 million is employment in all the activities of textiles sector. The estimated employment in textile sector as per NSSO 61st round estimates of employment – unemployment is 9.64 million.

Garments

- The estimates derived using ASI and NSSO data on unorganized manufacturing sector show that 1.585 lakh units are involved in commercial apparel activity. Most of the commercial apparel activity is also carried out in small scale units. Out of the total 1.585 units, OAME units account for 1.05 lakh enterprises, NDME 23973 and DME 17850. Thus only 12035 commercial apparel manufacturing units belong to small to medium, medium and large. Out of these 12035 units, 1126 are run without the aid of power and remaining 10909 are run with the aid of power. The focus of this garment section is on 10909 commercially owned small to medium, medium and large units, which are run with the aid of power and are involved in commercial apparel manufacturing activity.
- Out of the total turnover of wearing apparel of Rs 65060 crore during 2005-06, the turnover excluding custom tailoring accounts for Rs 50850 crore. In case, the production by OAME, NDME, DME units is excluded, the turnover of the remaining small to medium, medium and large units for commercial apparel related activity accounts for Rs 44520 crore. This can further be split into units running with the aid of power and without the aid of power. The production of such units running with the aid of power is worth Rs 44000 crore.

- The estimated turnover of wearing apparel units for both factory and non-factory sector is estimated at 105165 crore during 2008-09.
- The estimates derived using ASI and NSSO data on unorganized manufacturing sector show estimates of employment of around 5.47 million in apparel sector during 2005-06. The estimates derived using NSSO data on employment and unemployment using 61st round are 7.34 million people engaged in garment sector. In case, the custom tailoring is excluded, commercial apparel activity accounts for only 1.28 million employees (ASI & NSSO data on unorganised manufacturing sector). The employment generation among 10909 commercially owned small to medium, medium and large units, which run with the aid of power and are involved in commercial apparel manufacturing activity is estimated at only 0.685 million.

Sector-wise Anaylsis of Clusters

- In our sample survey of handloom clusters 17 states were covered. Average size of the handloom units in most of the clusters is generally small or medium except Kerala where only medium and large sized units were found (large size is mainly due to existence of cooperatives). In Uttar Pradesh, Andhra Pradesh, Rajasthan and Karnataka mainly OAME and NDME operated units were found in the survey. Most of the surveyed units in Tamilnadu, Madhya Pradesh, Haryana, and Maharashtra were found to be either DME or medium sized units. In the states of Orissa, Kerala, Assam and Tamilnadu handloom cooperatives are found, which have very large membership due to which some very large size of the units are shown.
- Regarding training for skill development for handlooms, no formal training institutions were found. Even if a labour is very skilled, they hardly can meet their both ends meet. The reason behind this being low productivity of the handlooms and hence low wages. Many of the people employed in the sector don't have any other source of livelihood; others do it as a part time activity. It is to be pointed out that no handloom unit in the survey had awareness about the TUF scheme which provides 25% capital subsidy on purchase of the new machinery and equipments for the pre-loom & post-loom operations, handlooms/up-gradation of handlooms and testing & Quality Control equipments for handloom units.
- In the present study, we have covered some of the major powerloom clusters in 13 states. It was found that most of the units covered in the sample across states are either small sized or medium sized units because of their dominance. As regards labour requirement, powerlooms are not as labour intensive as handloom. As the scale of operations increases, labour requirement per loom decreases drastically. The level of modernization of looms varies across the clusters and this is a major factor affecting the productivity of looms and the quality of fabric produced by the looms. Condition of dying and processing in many clusters is in a very

bad state due to redundant dying and bleaching techniques, inadequate technology upgradation, poor yarn quality testing facilities, poor quality of water, inadequate water supply, etc.

- In hosiery sector, Tirupur and Ludhiana are the leading knitted fabric and garments making clusters. In this study Tirupur, Ludhiana and Kanpur clusters have been covered. Tirupur is an export oriented cluster where T-shirts, undergarments, vests, trunks, knitted pyjama, kidswear, ladieswear, etc. are made. Ludhiana is mainly producing woolen knitwear. Kanpur mainly deals with underwear, vest and socks, and most of the products are for catering to the domestic market. The numbers of integrated knitting units are very few. In Tirupur, most of knitting takes place in modern circular knitting machines. Kanpur cluster is comparatively less modernized as compared to other two clusters.
- In Garments sector, the study mainly focuses on units run commercially both for woven and knitted units. In the present sample survey, seven major woven garment clusters namely Okhla (Delhi), Noida (Uttar Pradesh), Bangalore (Karnataka), Ahmedabad (Gujarat), Mumbai (Maharashtra), Jabalpur (Madhya Pradesh), and Madurai (Tamilnadu) are covered. Among these, Noida, Okhla and Bangalore have more export oriented units than other clusters. Knitted garment clusters included in our sample survey are Tirupur (Tamilnadu), Ludhiana (Punjab) and Kanpur (Uttar Pradesh). Quality of garment varies across different clusters and depends upon the quality of fabric and accessories used. Generally, in the same cluster there is homogeneity in the type of products made, through quality differ widely across units. It is observed that productivity per machine in knitted garment unit is much higher than in woven garment units. Most of the units were found to be working on jobwork basis.

I. iv Domestic Demand

Pattern of changes in consumption using Textile Committee data for the year 1990, 2000 and 2006

- During the period 1990 to 2006 the share of cotton in total fabrics and clothing consumption steadily declined from 53% to 38%. In case of textiles in piece length, there was a decreasing trend both in case of cotton and total textiles for the years 1990, 2000 and 2006 as per Textile Committee data. In case of total textiles most of the items showed a declining trend except furnishing material which increased drastically from 1990 to 2000. In case of readymade garments both cotton and total textiles showed an increasing trend over the years 1990, 2000 and 2006. In case of cotton textiles major change took place for trouser which increased drastically from 2000 to 2006 and for skirt/midi which showed a drastic increase from 1990 to 2000. For total textiles, major increase took place in case of school uniform, skirt/midi and petticoat from 1990 to 2000. For household varieties also there was an increasing trend for both cotton and total textiles over the periods 1990, 2000 and 2006 with chadder showing major changes in both categories of textiles over the period 2000 to 2006. Also in case of

cotton textiles, curtain and towel showed major changes. As for hosiery (knitted varieties), an increasing trend is observed for both cotton and total textiles with major increases occurring in items like banian and T-shirt over the period 1990 to 2000. Also there was a major increase in sweater consumption in case of total textiles for the period 2000 to 2006. If we compare cotton textile vis-a –vis total textile, we find that the share of cotton textiles in total textiles has declined from being over 52.77% in 1990 to 39.51% for 2000 and 37.68% for 2006. Also the share of hosiery in these five categories of textiles and share of made-ups in the woven textiles has reduced for total textiles as compared to cotton textiles for the years 1990, 2000 and 2006.

- Consumers spend 5.96 and 7.07 per cent of their total expenditure (reference period 365 days) on clothing items in urban and rural India respectively. The per capita expenditure/income is 6712 rupees for rural India and 12610 rupees for urban India in 2004-05. So consumers in urban areas spend much higher compared to their rural counterparts in absolute value. The share of clothing in total expenditure/income has increased from 6.50 per cent in 1993-94 to 6.65 per cent in 2004-05 at all India level (365 days as reference period).

Change in the Consumption of Various Items in Clothing Using NSSO 1993-94 and 2004-05 data

- The per capita fabric purchase was 18.62 square metres for India in 2004-05 compared to 13.27 square metres in 1993-94. Per capita fabric purchase increased at 3.12 per cent annually. The per capita purchases for rural India increased from 13.06 per square metres in 1993-94 to 17.67 square metres in 2004-05. For the urban India, it increased from 13.94 square metres in 1993-94 to 21.44 square metres in 2004-05. For rural India, per capita purchase increased at 2.78 per cent annually, whereas it increased at 3.99 per cent for urban India.

- If we look to the share of various items with respect to expenditure on clothing, five major items in consumer basket are identified- 'Sari', 'cloth for shirt, pyjama, salwar, etc', 'cloth for coat, trousers, overcoat, etc', 'hosiery articles, stockings, under-garments, etc', and 'ready-made garments'. The share of these five items together is remaining constant at 77 per cent between 1993-94 and 2004-05. But there is significant change within these 5 items group. The share of sari, cloth for shirt, pyjama, salwar, etc and cloth for coat, trousers, overcoat, etc has declined in 2004-05 compared to the 1993-94. The fall in these three items could be explained by the increase in the share of expenditure of hosiery articles, stockings, under-garments, etc and ready-made garments. The share of hosiery articles, stockings, under-garments, etc has increased by 34 per cent and the share of ready-made garments

increased by 45 per cent. So consumer preference is shifting towards 'ready-made garments' and hosiery items.

Expenditure and Price Elasticity of Textile Items

- Expenditure elasticity increases as we move from lowest income group to the next income group, then it starts to decline. It peaks up again for the income group Rs.40000-Rs.50000 and then declines substantially for the highest income group. This means people are more responsive to the income changes. They spend higher part of there income on textile & clothing items consumption. But as income increases sufficiently, the priorities for consumers changes and they prefer to spend major part of extra income on education and health care. Once the demand for these additional items is also met, the further rise in income leads to improvement in quality & quantity of the produces, which were of not that good quality at lower income. This happens till a stage and then again elasticity decline.
- The projections are not made on the basis of income group-wise elasticities due to lack of information available on growth in income among various income classes. The estimates of elasticities derived by Bedi & Cororation, IFPRI (DP), 2008, are used to project future demand elasticities. Scenario A has been projected on the assumption that GDP is likely to grow by 8% per annum and relative prices of cotton will grow is likely to increase by 10 per cent. The aggregate domestic consumption of fabrics is projected to increase from 43079 million square metres during 2007-08 to 59228 million square metres by 2011-12 and then further to 81434 million square metres by 2015-16. There are remote chances of Scenario B considering global slowdown in the economy.
- The domestic consumption is projected to grow by 8.28 per cent during both these periods.

Retailing

- The high average sales margins are due to most of the retailing concentrated in traditional small and medium sized retail outlets. Direct sale by producers or through their franchises is very limited. But over the years there is a gradual shift toward modern retail outlets with single and/or multi brand outlets. But textiles and garments retailing is still dominated by traditional retail outlets.
- During 2006, the total consumption of fabric and garments (domestic and exports) is estimated at Rs 2813 billion, out of which spending on textiles and clothing items by the household sector is estimated at Rs 1,556 billion and exports at Rs.561 billion. In 2006, exports constituted 20 percent, household expenses 55 percent, and non household expenses 25 percent of the total consumption estimates. The estimates of total production of fabric and garments are estimated at Rs.1294 billion. Using these two sets of information, the margin add up to 117.35 per cent

(113 per cent in case import is also considered) mainly due to the long chain of wholesalers and retailers involved from the production stage to the final consumer stage.

- So far FDI is not completely allowed in Indian retail sector because of fear that the entry of foreign companies into retailing would adversely affect existing business and thus livelihood of million of people engaged in it. Currently, India does not allow FDI in multi-brand retail but permits up to 51 per cent FDI in single brand retail and 100 per cent in cash-and-carry wholesale trading. Though there is a ban on FDI in big multi-brand retail stores, there is no restriction on companies accessing the foreign equity market through the American and global depository receipts.

Value Chain Analysis

- In the primary survey conducted by NCAER, it is observed that wholesalers in most of the cases purchase fabric/garments through agents. Direct purchase from powerloom or readymade garments units is relatively much less. Next in chain is generally, small wholesalers who in then purchase from large wholesalers. Main cause of purchasing fabric through agent is that the factory does not sell directly to a wholesaler because the latter purchases in small quantity; the agent provides fabric to wholesaler at factory price against a commission, which is provided by the factory. An agent usually has contract with more than one factory. There are instances when value addition work is undertaken by wholesalers after the purchase of fabric/ garments. On an average, it increases the value of fabric/ garments by 34 percent. The traders face various challenges which include over stocking, under stocking/ shortage in few items and surplus / both. The producers play the major role in determining the price of fabrics/ garments, while for determining the quantity of fabrics/ garments and its quality, the traders play the major role.

  A wholesaler sells his fabric/ garment (as the case may be) either to agent or small wholesaler or readymade garment unit or the retailer in the market. All the large retailers (chains) sell their products to final consumer. Some wholesalers give some discount to readymade garment units as compared to other customers. Maximum number of intermediaries existing between factory and final consumer are found to be five in metro cities. This chain may vary in small town or in interior areas. Managing such a complex supply chain requires coordination through excellent managerial practices, technology and facilitating policies. Price of fabric/ garments generally increased with the number of intermediates in the chain. In case of 4-5 intermediates, the price to consumer is 183-210 percent of the ex-factory price. Textile firms need to develop the managerial capabilities required to manage large work force and design an appropriate supply chain.

I.v Exports & Competitiveness

- In the sphere of cotton yarn, woven and knitted fabric production, India is one of the lowest cost producers. Cheap availability of raw material and low labour cost are the major factors

for low cost of production. Dying and processing segment of the Indian textiles industry is not technologically well advanced due to restrictive policy regime in the past. This is reflected in the relatively inferior quality of domestically dyed & processed yarn and fabric. This has resulted in a comparatively much larger share of grey yarn and fabric as compared to that of dyed and finished yarn and fabric in Indian textiles exports. The mill sector is competitive only in a few products, which are produced on large scale or require large width. In case of woven fabrics decentralized powerloom segment is the most competitive. The cost of production is highest in handloom sector and thus this sector is loosing its market share. However, for a few varieties handloom sector is efficient and competitive compared to other sectors. The cost of production in powerloom sector is much lower as compared to mill sector. This gets reflected in the wide gap in average realization of price of fabrics produced in the two sectors.

- Garment sector is very labour intensive in India, and thus labour cost assumes much significance in per piece cost of garment production. India compares very favourably across the developing countries in terms of low labour costs. Bangladesh, Pakistan and Vietnam are however, countries having low labour costs compared to India. However, empirical evidence suggests that low wages are not always a factor of competitiveness particularly in case of good quality designer garments. Quite often high wages are paid to skilled labourers as remuneration for the high levels of skill and productivity. The quality of fabric available to Indian garment producers is much inferior compared to international standards due to poor dyeing quality. This leads to dependence on imports for good quality fabric used in high value and designer garments. This is a major gap in the garment value chain and affects our export competitiveness both in terms of quality and price.
- The fabrics equivalent export is projected at 11790 million square metres by 2011-12 and 15803 million square metre by 2015-16.

I.vi Technical Textiles

- The value of output of technical textiles in the country is estimated at Rs 43989 crore during 2008-09. By 2015-16, output value of technical textiles is projected at Rs. 82268 crore.
- In India, most of the technical textiles products are typically commodity products that are not very R&D intensive. These products include tarpaulins, jute carpet backing, hessian, fishnets, surgical dressings, crop covers, etc. The value addition in technical textiles product is relatively much low as compared to our competitors. To move toward high value products, there is need for preparing a strong pool of killed labour which is suitable for the development of a highly innovative and R&D intensive technical textile products.
- Technical textiles are import intensive products. For many products, the raw material required for this industry is imported one as webbings for seat belts, adult diapers, high altitude

protective clothing, non-woven glass mat for battery separators etc. The major production of the industry is catering to the domestic demand.

- There is lack of demand of technical textiles as it is only used as an alternative when conventional solutions are not suitable. This is mainly because of lack of awareness among the consumers about the benefits of using technical textiles, and this is hampering the potential demand of technical textiles in India. Government can take adequate legislative measures to ensure use of technical textiles across different sectors of the economy at par with developed countries.

I.vii Skill Gap

- Currently, there is a massive gap between the availability of skilled manpower and the requirements of the industry, particularly in the weaving, dying, processing and garment segments. To bridge this gap requires massive expansion and modernization of training institutes/polytechnics across the country.

- The number of ITIs targeted specifically to the requirements of the textiles sector need to be increased significantly to meet the shortage of operatives. They may be persuaded to relate their courses and curriculum in textiles with the inputs from the textiles industry to make them more relevant to modern machineries and processes used in textiles industry.
- Inflexibility in labour laws is eroding the competitiveness of the industry. It has also affected the expansion of garments sector. Outdated labour laws have induced inflexibility in the clothing industry, leading both to fragmented operations in order to circumvent these laws and to lost export orders due to industry's hesitation over expanding when there is an upsurge.

I. viii Investment

- Total investment (here Gross Fixed Capital formation) made in the factory sector of the industry during the period 1992-93 to 2005-06 was Rs.93102 crore. Out of this Rs. 40532 crore were invested during 1992-93 to 1998-99 and investment to the tune of Rs. 52570 crore were made during 1999-00 to 2005-06[1]. Thus investments during the post-TUFS period much higher compared to pre-TUFS period. Total investments in the factory sector of the industry during 2005-06 was Rs. 14714 crore. Further, there has been significant shift in the composition of investment and it has got more diversified in the latter period. As can be seen from increased investments toward segments such as garments, knitting & crocheting and manufacture of other textiles. But still Rs.38778 crore i.e. 74% of the investment was concentrated in spinning, weaving and finishing of textiles during 1999-00 to 2005-06, out of this Rs. 7285 crore was invested in finishing of textiles. It is estimated

[1]Technology Upgradation Fund Scheme (TUFS) was introduced on April 1, 1999 for modernization.

that during 2005-06 investment to the tune of Rs. 17314 crore were made in the unorganized sector of the industry. Summing together the investments in both factory and non-factory sector of the industry total investment of the textiles and clothing industry comes out to be Rs.32028 crore in 2005-06.

- Most of the funding of investment in the industry has occurred through domestic sources whether through debt or equity. Role of FDI has been very limited. During 2000-01 to 2005-06, FDI contributed to only 2.1% of total investments in the organized factory sector of the industry. Further, upto February, 2009 from August, 1991 only US$ 856 million had been attracted to the textiles and clothing industry, which accounts for only 0.86 % of total FDI inflows in India during the same period.
- Technology Upgradation Fund Scheme (TUFS) was introduced on April 1, 1999. The scheme was intended to compensate for the global disadvantages faced by the Indian textiles and clothing industry in the field of power, transaction costs and additional costs borne by the industry due to poor infrastructure. The scheme was also intended to attain a higher level of infrastructure creation for modernization of textiles sector.
- TUF scheme has been an important contributor to investment and modernization of the textiles and clothing industry since the inception of the scheme. Till December 31, 2008 total 69828 crore had been sanctioned and Rs 57878 crore had been disbursed under TUFS to various textiles and garment units. Spinning mills availed the maximum benefit from TUFS with disbursement of Rs. 19636 crore (i.e.33.9% of the total disbursed amount) till December 31, 2008 from the beginning of the scheme in April 1, 1999. Next major beneficiary is the composite mill sector with disbursement of Rs. 11921 crore (20.6%). The other major beneficiaries such as processing of textiles and garments, weaving, garment manufacturing, manufacturing viscose filament yarn, synthetic filament yarn, texturising, crimping & twisting and knitting with disbursement of Rs 5134 crore (8.9%), Rs.4453 crore (7.7%), Rs. 2989 crore (5.2%), Rs. 2571 crore (4.4%), Rs.1446 (2.5%) respectively till December 31, 2008.

- In many segments, loans availed through TUFS make a significant contribution of project costs of the units that had applied for TUFS. In the spinning segment, 49-57% of the project cost was covered through TUFS loans during 1999-2008. In composite mills, it varied between 40-45% and in case of garment manufacturing it varied between 46-71%. One major segment in which investments in projects have been relatively more of self-financed nature than through TUFS loans is knitting in which share of TUFS loans varied between 23-44%. One of the reasons for relatively less investment in weaving, knitting and apparels segment has been reservation of articles in these categories for small-scale enterprises only. Due to reservation these segments could not expand themselves and several economies of scale could not be harnessed. On the other

hand, in spinning segment there were no such restrictions and thus were able to expand and capitalize on scale economies.

- The item-wise projected demand (dometic and exports) is estimated to grow from 52161 million square metre to 65414 million square metre by 2011-12 and 82034 million square metre by 2015-16. The demand for readymade is likely to grow from 12594 million square metres to 16923 million square metres by 2011-12 and 22288 million square metre by 2015-16. Knitted products demand is likely to grow from 8025 million square metres to 10520 million square metres by 2011-12 and further to 13500 million square metres by 2015-16. The made-up are likely to grow at much faster rate from 13194 million square metres to 19001 million square metres by 2011-12 and further to 26819 million square metres by 2015-16. The growth in garment piece length is going to be slow and for piece length is likely to decline due to shift towards the readymade garment consumption.
- The household consumption is likely to grow from 28071 million square metres during 2007-08 to 34327 million square metres by 2011-12 and 40841 million square metres by 2015-16. The growth rate is going to be lowest in this segment at the rate of 5.16 per cent per annum and 4.44 per cent per annum during first and second periods respectively. The non-household consumption is likelt to grow from 15006 million square metres during 2007-08 to 19833 million square metres by 2011-12 and 24895 million square metres by 2015-16. The growth rate is going to be 7.22 per cent in non-household segment during first period and 5.85 per cent during second period. The exports are likely to slow down and are expected to grow by only 5.5 per cent per annum during the first period from the base year 2007-08 estimates of 9084 million square metres. This is the period when the industry should intend to focuss on domestic demand growth prospects. The growth in exports during the second period is likely to be 7.7 per cent per annum.
- In the spinning segment it is projected that during 2007-08 to 2015-16 around 12 million spindles will be required to fulfill the addition demand of spun yarn. This amounts to investment requirement of Rs 25000 crore in the segment during 2007-08 to 2015-16.
- For the modernization and expansion of the weaving segment, investment to the tune of Rs. 32846 crore is expected during 2007-08 to 2015-16.
- In the knitting segment, investment requirement will be worth Rs. 8528 crore in this period.
- For garment segment, Rs.39611 crore for modernization and expansion plan would be required.
- For dyeing and processing segment, investment requirements are estimated at Rs. 95000 crore.
- The total investmens requirement during 2007-08 to 2015-16 is estimated at Rs. 200985 crore.

II. Policy Implications

Indian textiles and clothing industry is at the crossroads looking at the severity of the slowdown in the world economy. This has more severely affected the export oriented units than those dependent on domestic demand. This has forced major business restructuring in the form of changes in the product-mix, efficiency enhancements, cost-cutting exercises across the spectrum of value chain of the industry to whether the situation. In these circumstances institutional policy support is required to withstand the looming global crisis. The restructuring at the unit level would be effective, if high value added quality chain is ensured. The role of government in these circumstances should be to ensure the flow of investment in crucial areas for the growth of the sector. The coordination among units needs to be strengthened in order to develop unhindered growth of supply chain in value added products. The various policy issues required to improve the efficiency of Textile and Clothing industry in various areas are analyzed in detail below.

II.i Synthetic Fibre/ Filament

Limited availability and higher prices of the synthetic fibres and filament in the domestic market are primarily due to lack of competition or oligopolistic market structure of the product in the country. There is an immense scope for price reduction and raising supply of man made fibres/filament yarn through enhancing competition and curbing monopolistic practices by allowing more firms to produce these products or directly involve in production related activities or curbing the share of single unit etc. Therefore, the government can take some measures for expansion of domestic capacity for production of manmade fibres.

Man made fibres and filaments and raw materials thereof are the basic raw materials for the textiles and clothing industry. Higher cost on them will affect the entire value chain starting from fibre to garments. It will have a cascading effect on the value chain downstream. So there is need for further rationalization in the custom duty structure. Currently, customs duty on nylon filament yarn is 10%, which should be brought down to 5%. The customs duty on other man made fibres and yarn- polyester staple fibre, acrylic staple fibre, viscose staple fibre, polyester filament yarn and viscose filament yarn were already reduced to 5% in the previous budget. It had a salubrious effect on the industry. Moreover, additional customs duty (ACD) which is 4% on these items at present should be scrapped. The customs duty on raw materials for these fibres and filaments-DMT, PTA, MEG and acrylonitrile should also be reduced to help the fibre & filament-producing firms to cut these raw material cost. This is most likely to happen during the periods when crude oil price are low.

II.ii Poor Dyeing/ Processing

The quality of fabric produced in India is much lower than international standards. This is much due to poor quality of dying and processing of fibre, yarn and fabric. This affects our export competitiveness of fabrics and apparels products both in terms of quality and price. The production of fabrics in India is still much protected. Cotton and blended fabrics invite 10% of customs duty. To make the market of yarn and fabrics competitive and to improve the quality of final products, there is need for reductions in the customs duty. This would help the availability of good quality fabrics to the garment producers at reasonable rate.

II.iii Duties

Duty Draw Back

Government has reduced the rate of duty drawback on number of textile items with effect from September 1, 2008. For instance, duty drawback rates for knitted shirts/blouses of cotton have been reduced from 11% to 8%. For made ups of man made fibres it has been reduced from 10.4% to 9.5%. Similar reductions have been made on other items. This would adversely affect the exports in view of the fact that the input cost for industry has substantially gone up as a result of higher input prices and also because of cut-throat competition from neighboring countries like Bangladesh, China, Sri Lanka, etc. On the contrary, China has increased the duty draw back rates looking at the tense external market. Hence, these drawback rates should be increased and at least restored to their previous levels.

After multi fibre agreement phase out, non-tariff barriers (NTBs) are the major trade barriers faced by export oriented units. In textile products child labour use is always suspected. Besides, other labour standards like safety and health standard are always a concern to an exporting unit. Some other NTBs faced by exporters are labeling of shipment, security parameters, complicated requirements of rules of origin and documentary clearance requirements. Some of these requirements can be fulfilled by putting bearing costs by respective units. But, still there is need for the government to do some hard bargaining with developed countries on the issue of NTBs by allying with other developing countries.

Basic Duties

On December 8, 2008 the government decided to reduce the basic excise duty on ad valorem basis by 4% on all commodities (except petroleum products). This is a positive response from the government. Looking at the recessionary condition, there is still much inconsistency in excise rates across different items of yarn & fabric. After these excise

duty cuts cotton yarn attracts no basic excise duty and spun and blended yarn attract 4% of basic excise duty. Similarly, cotton fabrics now attracts 0% excise duty and blended fabrics attracts 4% of excise duty. Similar is the case of cotton and synthetic garments. In the same vein, basic excise duty for different raw materials of man made fibre/yarn is in two slabs 4% and 8%. These differences should be reduced and made more harmonized. As synthetic fabrics/made ups and garments are no longer rich man's clothing, infact cotton is preferred product.

Even after reduction in basic excise duty by 4% and 2% (in Interim Budget 2009-10) textiles machinery in general category still attracts 8% of basic excise duty. It should be further brought down. It will help textile and textile machinery industry to grow faster and reduce dependence on imported machinery. It will also assist in modernization of domestic textile industry.

Now in all the states, VAT is applicable in place of sales tax on textiles and clothing articles. There are four slabs of VAT for different commodities-0%, 1%, 4% and 12.5%. There is no uniformity across states in putting different commodities in different tax slabs. So harmonization of VAT across different states is required. Goods and Services Tax (GST) will be great step in this direction, which is expected to be introduced from April 1, 2010.

Further, there exist some gaps in the VAT regime in some states which serves as a disincentive to enlarge the product mix toward more value added products. For instance, powerloom units in Solapur, Maharashtra focus on production of conventional products such as terry towels and not other market oriented value-added products (e.g. aprons) due to VAT slab. Similarly, in other states certain clusters make some conventional products due to fiscal biasness. This anomaly needs to be corrected.

To counter the negative impact of global financial crisis, Government has announced in the Interim Budget 2009-10 an interest subvention of 2 per cent on pre and post shipment credit for Textiles (including handlooms & handicrafts) exports till September, 2009. There is need for other such measures to help the industry to tide over the crisis.

II.iv Textile Machinery

Textiles machinery production industry in India is not able to cater to the entire demand of the textiles industry for modernization with latest technology. Therefore textiles mills have to much rely on imported machinery for their requirements. It is therefore advisable on the part of government to reduce the customs duty on textile machinery that presently ranges from 5 to 7.5%.

II.v Infrastructural Constraints and Small Size Units

A few medium sized garment units despite being keen on selling their product in the export market are not able to do so due to lack of information regarding proper channel of export. Thus, they have to confine themselves to the domestic market. Proper assistance to such type of units would be helpful. Units also face the problem of non-recovery of dues from their foreign clients. Meeting deadlines without proper infrastructure is another major problem. A few others face the problem of cancellation of orders. In these circumstances they have to end up with selling their product at no profit or even at losses. AEPC should guide the units with regard to such kind of problems and help them in developing a platform for co-coordinating things in a better way.

The strict implementation of emission norms by Central Pollution Control Board (CPCB) on dying units is resulting in many units in clusters not able to comply with the norms e.g. Several units in Tirupur cluster are not able to purchase and maintain costly water treatment plant. This is affecting the value chain severely. To overcome this problem many dying units are installing water treatment plants on a shared basis. Many units feel that zero percent emission is not possible, as accessing such type of technology is difficult. CPCB officials also are not helping them in this regard. It is advisable that government should give some strict guidelines to CPCB for assisting dying units in installing new water treatment plants.

Modification in TUFS Scheme

This shift in policy toward other segments (i.e. segments except spinning) is a welcome change. It is expected this will bring about a sea change in the investment pattern in textiles and clothing industry. The outcome of the flawed investment policy encouraging investment by providing uniform concessional interest rate without considering the sectoral requirement and neglect of dying, processing, weaving and garmenting can be seen during the present recession times when spinning mills are struggling with the problem of overcapacity. It will be advisable on the part of the government to further reduce the incentives given to spinning segment under TUFS for to relate the investment in towards other segments, where level of modernization is low. In it the scheme should consider providing more incentives in the form of interest reimbursement, capital subsidy, margin money subsidy, etc. to the segments that have been neglected so far and are crucial for value chain development.

Many of small sized powerloom, knitting and garment units work on a jobwork basis. Most of them don't maintain proper books of account as a result they don't fulfill the accounting requirements of bankers for loans. The small sized units don't qualify for the

working capital availability requirement of banks. Moreover, powerlooms are required to contribute 35% of the project cost for getting TUFS loan for which they find themselves unable in most cases. All these practical problems of various small size units deprive these units of availing benefits of scheme like TUFS. There is need for procedural simplification and less paper work without compromising transparency. Presently small size units belonging to handloom segment mainly avail benefits for microfinance schemes.

This is to be pointed out that no handloom unit in the survey had awareness about TUF scheme for handloom sector (introduced in July, 2006) which provides 25% capital subsidy on purchase of the new machinery and equipments for the pre-loom & post-loom operations, handlooms/up-gradation of handlooms and testing & Quality Control equipments for handloom units. Therefore, effort of the government toward modernization and technology upgradation of the handloom sector is not coming into fruition. So either government should popularize the scheme through the mass media and various government agencies or repackage the scheme in some other form which has a better outreach and accessibility.

Further, to bridge the gap between domestic investment and required investment government should liberalize procedures to attract Foreign Direct Investment (FDI) in specific areas of textile industry needing FDI and take the appropriate steps to remove certain bottlenecks in attracting FDI e.g. poor quality of infrastructure, higher transaction costs, rigidity in labour laws, limits on FDI in certain segments, etc. in the country. Some areas which need specific attention with regard to FDI promotion are retailing of garments and fabrics, apparel manufacturing, manufacturing of textiles machinery, synthetic fabrics, technical textiles, etc.

Apart from high cost of machinery, infrastructural bottlenecks such as credit availability etc are other constraints facing the modernization process of Indian Industry. Associated with it is the hurdles of clousers the units face over the period of time in India. All this led to redundancy problem of plant and machinery installed in Indian textiles and garment industry. Except the spinning segment all the other segments (e.g. handloom, powerlooms, knitting units, garment units, dying and processing units) are much less modernized as compared to its major competitors. There are some modernized units in select clusters across different segments but their share in total number of units/machines/looms is very few. Hence, there is an urgent need for modernization of technology across the value chain (except spinning). TUF S is a major programme initiated by the government to modernize the Indian Textile and Clothing industry.

It is observed that spinning mill segment constitutes the largest beneficiary of TUF scheme. As spinning segment in the industry is already relatively much modernized as compared to other segments and massive investment is going on in the segment, so government should discourage spinning units to avail of TUFS. In this regard the government has made some changes in the financial and operational parameters of the scheme in respect of loans sanctioned with effect from 01.11.2007 upto 31.03.2012. In addition, a few other measures have been taken for modernization of other segments.

Handloom Sector and Hank Yarn Obligation

In the handloom sector, many small sized units face the problem of availability of yarn at suitable prices and of proper quality and marketing of their finished product. The problem is more acute in clusters where there is no properly functioning cooperative or not proper implementation of the Mill Gate Price scheme (in case of handloom units) of National Handloom Development Corporation (NHDC). So, they have to rely on master weaver or middlemen for the supply and marketing, who in most cases follow exploitative practices and don't pass on the favourable market prices of the yarn and products to them. Infact, the non-availability of hank yarn at reasonable prices to handloom units in remote areas is one of the main causes for steep decline in share of handloom sector in total fabrics production. The production of hank yarn, though, is higher than the demand; the availability in remote areas is difficult as it is not cost effective. So there is need for strengthening the existing cooperatives and yarn depots. As regards marketing and exports of handloom products, most of the marketing and exports promotion schemes for handloom products by government are limited to some major handloom clusters and within those major beneficiaries are some strong cooperatives. There is need to expand the outreach of these programmes to minor clusters also. These schemes should be so designed that even small handloom units which are not member of any cooperative can be benefited at least for non-remote areas. This at least can slow down the decline of handloom sector. Presently, the surplus hank yarn production is either just on paper or being diverted to powerloom sector. The diversion is obviously there. The other possibility is that cone yarn varieties are wrongfully declared as hank yarn in order to meet the required obligations imposed on the mill sector. Otherwise, how can one explain the production of hank yarn far in excess of its consumption and still the hank yarn price prevailing much higher than cone yarn for most of similar varieties.

Diversion of Hank Yarn

The obligations imposed on production of hank yarn, which is meant to be consumed in handloom sector, are not able to ensure the survival of handloom sector. Obviously, the obligations imposed are not ensuring the survival of handloom sector. Ministry of Textiles

has introduced 'Handloom Mark' for all handloom fabrics and products made thereof since June, 2006, which can serve as a guarantee to the buyer that the product being purchased is genuinely hand woven and also help in promoting sales of handloom products. It also aims at popularizing Indian handlooms and improving price realization for handloom products in domestic as well as international markets. It also helps the buyers in distinguishing handloom products from powerlooms and mill-made products. This is a welcome move on the part of the government. But so far coverage of the scheme has been very limited and cannot spread to remote areas either. The implementation of such schemes is extremely difficult and so is their success for remote areas. Several powerloom and mill made products are still being sold by some unscrupulous sellers in the name of handloom products in large quantities. Reality is that a large number of handloom weavers are not aware that such a scheme exists. The major thrust of policies should be to create infrastructure, co-ordination and emphasise on technology to develop the sector.

There is also need to increase the varieties of designs and modernize the dying and processing activities in the handloom sector. Moreover, to avoid the competition from powerlooms handlooms should innovate some new products and enter into some new product ranges which are so far untouched by powerlooms or where their superior quality can't be matched by powerlooms. Kanjeevaram silk saree is good example of this. There is also need to get patents for some handloom products on the basis of geographical indications of goods e.g. Benarasi silk sari, Kanjeevaram silk sari, etc. to serve the interests of the makers of these of products. It is also needed that proper remuneration goes to the weavers and people doing handiwork on the fabric of these products rather than to traders/middlemen.

It was estimated on the basis of NSSO data that a major decline has occurred in the number of weaving sector units especially small ones in the unorganized manufacturing sector, which is not in accordance with the Textile Committee, Textile Ministry data. The latter data shows much higher production of fabrics in the handloom sector. The NSSO data clearly indicates that handloom sector is unable to sustain the competition against the powerloom sector in an open market environment, but the Textile Ministry data failed to capture the steep decline in the volume of fabrics produced in the handloom sector. Due to non-availability of accurate information on the total number of active handloom units and production therefrom government is not able to take decisions which are in the best interests of the industry. Not well- informed decisions lead to bad planning and misdirection of policies, which ultimately lead to misallocation of scarce resources.

The Handloom units should be allowed to retain flexibility to run their units manually or on power. The size of units should be considered important for providing concessions related to small scale sector. This would allow the handloom units to produce products manually, which can only be produced on handloom and allow flexibility to run unit on power when the demand so require. From our survey data, it has been found that the originally handloom units are now operating on power and this resulted in rise in their production by three fold. This should be allowed for units wanted to retain flexibility. The benefit of handloom mark etc should be which is produced manually schemes like provided only on that part of handloom production. These steps may be crucial for the handloom sector to improve their efficiency. It will lead to more diversification in there products and it will lead more innovation.

II.vi Supply Chain Management

The Indian textile and clothing industries have one of the longest and extremely fragmented supply chains in the world, with existence of many intermediaries between the producer and the final consumer. Each intermediary not only leads to lengthening of lead times, but also adds to costs. By the time the product reaches the final consumer, price of it increases manifold. This has to be reduced if India has to become competitive. Best supply chain management practices needs to be adopted by the firms. They need to rationalize costs at each stage in the entire supply chain, and not only within their own units. Coordination between industry and relevant trade bodies needs to be improved to make the supply chain more efficient. Further, to modernize the retail supply chain restrictions on FDI needs to be liberalized.

Most of the technical textiles products from India are typically commodity products that are not very R&D intensive. Hence value addition in our technical textiles product is relatively much low as compared to our competitors. To move toward high value products there is need for preparing a strong pool of skilled labour which is suitable for the development of a highly innovative and R&D intensive domestic technical textiles industry. Currently, there is no specialized course in technical textiles in ITIs to meet the requirement at the operative and supervisor level. So, bringing it in the curriculum of the ITIs from the perspective of vast growth potential of this segment would be highly helpful. Similarly, technical textiles could be included in the curriculum of various branches of engineering, e.g. civil engineering to include geotech and build tech, environmental engineering to include oekotech, agricultural engineering to include agritech, etc. Further, to provide R&D base to the sector post graduate courses for specialized technical textiles segments are required to be introduced in various IITs, NITs or other specialized institutes to develop a specialized skilled labour pool. Research

institutes and consulting agencies with special focus on technical textiles can also be established. This should be part of capacity building for R&D in the sector.

II.vii Power Problem

One of the pressing problems of textiles and clothing firms is erratic and limited power supply. Due to non-availability of quality and adequate power from State Electricity Distribution Companies, most of the textile mills have to rely on their own captive power plants (CPPs). But small units have to stop their operations for the period of the power cut; as the small units can't afford large gen-sets for alternative power supply. They have to allocate a massive sum for purchase of diesel (furnace oil) for their power generating sets, which is costly as it attract Excise Duty/Custom Duty of 16%. To mitigate the power problem in the short term small powerloom units in a cluster can pool their resources to establish a captive power plant or common gen-set on a shared basis. In this collaborative effort of the units government can provide some financial and technical assistance on a sustainable basis. But in the medium to long term, government will have to invest in the power infrastructure enormously to make the existing firms competitive internationally and attract new firms in the industry.

II.viii Skill Gap

To mitigate the skill gaps of labour at the lower end government should open training schools on a massive scale. This should be on a public-private partnership module so that it can run on a sustainable basis. In this regard the government should also consult the industry associations of both large as well as small units in the major apparels clusters.

II.ix Lack of Awareness Among Consumer

Furthermore, there is a lack of demand of technical textiles products as they are used as an alternative only when conventional solutions are not suitable. This is mainly because of lack of awareness among the consumers about the benefits of using technical textiles, and this is hampering the potential demand of technical textiles in India. Government can take adequate legislative measures to ensure use of technical textiles across different sectors of the economy at par with developed countries.

Introduction

Importance of textile & clothing industry

The Indian textile and clothing industry continues to have an important place in the national economy as regards employment, value addition or income generation, and export earnings. It is estimated to provide employment to more than 16.98 million workers as per NSS 61st ROUND, (July 2004 – June 2005), Report No. 515(61/10/1), Employment and Unemployment Situation in India, 2004-05, and 12.6 million as per ASI and NSSO 62nd round July 2005 - June 2006 data, 11.6 percent of manufacturing value added during 2006-07 (National Accounts Statistics, 2008), and 13.8 percent of total export earnings during 2007-08 (Compendium of Textile Statistics, Office of the Textile Commissioner, Mumbai). The share of clothing in total expenditure of households is estimated at 6.65 per cent in 2004-05 at all India level (365 days as reference period, NSSO, 61st Round), while expenditures on clothing account for more than 4.02 percent of total private consumption expenditures during 2006-07 (National Accounts Statistics, 2008).

Objective of the study

(i) to understand why certain types of fiber or yarn or fabric are exported and to determine a strategy to maintain a balance between exports and domestic market use,
(ii) to understand capacities at various levels of the value chain and investments required for the same (increasing the capacity),
(iii) to understand technology requirement for weaving and processing,
(iv) to understand the skill gap, if any, and to formulize steps to bridge the gap,
(v) to understand the manufacturing industry in India as a whole and to compare this with the share of the T&C sector,
(vi) to analyze the volume of investment required their outlay and the investment mix(FDI v/s domestic), indexing it with investment in other sectors and understand the changes in investment relative to other industries,
(vii) to understand, if any adjustment is required in the import-export policy to ensure adequate supply of raw materials-manmade and cotton,

The other aspects of the study, which need to be looked into, are:

Technical Textiles in India

- What is the current scenario of technical textiles in India?
- What is the potential growth in technical textiles?
- What are the requirement in order to promote growth in technical textiles-technology, raw materials, skilled labours, etc,

Textiles Industry Scenario

- What has been the nature of investment in the different manufacturing sectors? How does this compare to the Indian textile & clothing sector? Where is this investment coming from?
- Based on the above, recommendations will be made on the required level and source of investment in order for the Indian Textile & clothing sector to achieve it's projected targets.

- What limitations need to be addressed immediately?
- What are the resources required to ensure achievement of the projected long term growth targets?
- What can these resources be tapped and developed?
- What policy adjustments are required to felicitate the projected growth targets?
- What partnerships need to be developed either with industry leaders, state government, internationally, institutions, etc?

These objectives are addressed in eight chapters of the report. Chapter 1 covers an overview of the Indian textiles and clothing industry in the mills covered by CMIE prowess data. The focus of this chapter is on the structure of mills belonging to spinning, weaving, composite weaving and garment sectors. The capacity utilization in spinning, weaving, composite mills and apparel sector is analysed. In Chapter 2, the state of textiles and clothing industry in India is analysed with special emphasis on unorganized sector. In this chapter also, the various stages of processing such as spinning, weaving and garments are analysed. The data used for non-factory sector is (NSSO 62nd round July 2005 - June 2006) unorganised manufacturing sector for year 2005-06. These units are further split into those running with power and without power based on the expenses made by these units of their total output value. If a unit spends more than 1 per cent share of their value of output on power, it is treated as unit run with power and all remaing as those running manually. Thus fabrics related units are split into handloom and powerloom units using this criterion.

Apart from the analysis of item-wise production and units in the unorganised sector, an attempt is made to estimate the entire textiles and clothing sector. The problem was that unit-wise ASI data was not available till this report was finalised and hence the analysis could not be done for the organised sector in same detail as was done for unorganised sector. However, using unit level ASI data for year 2004-05 and published ASI data for year 2005-06 (published at the time when the report was about to be finalised), projections at various stages of processing in textiles and clothing sector are made for the period 2008-09.

Apart from estimating the number of units and value of output at fabrics, made-ups, processing and garments stage of production, an attempt is made to estimate the production of fabrics in various sectors namely mill, powerloom and handloom sectors. The official conversion rate of yarn to fabrics is very unscientifically drawn and these were fixed without considering the ground realities. These conversion rates have not been changed since 1980s. Fabric production is overestimated as pointed out by various authors. Bedi & Cororation, IFPRI, Discussion Paper (DP) 00801 (2008) made an attempt to provide another set of estimates of production of fabrics by carefully working out count-range-wise conversion rates in a scientific manner. These conversion rates are based on (i) nature of

yarn used, i.e. fibre composition (cotton, blended or man-made) and mode of production (spun or filament) etc; (ii) the count of yarn, i.e., its fineness or coarseness and ply of count; and (iii) Reed and pick of fabrics (cloth), i.e., the closeness of the weave. The sector-wise and fibre-wise count range-wise conversion rates derived by taking these three factors into account are applied to the count-range-wise consumption of yarn (of various fibres) by various sectors to estimate the production of fabrics.

Based on scientifically drawn conversion rates and then diversion of hank yarn in Bedi & Cororation, IFPRI (DP), 2008 study, an attempt is made to update these estimates using similar method upto 2007-08. The analysis is restricted for cotton and synthetic products. The sector-wise estimates of production of fabrics are then used to estimate employment in these sectors.

The total fabrics available for domestic and exports are then split into its use for ready-made garments, garments in piece length, piece length, made-ups and hosiery products on the basis of consumption of these items in household, non-household and exports sectors. These in turn are used to estimates value added in cotton and synthetic textiles and clothing sector.

Chapter 3 is based on NCAER survey undertaken during 2008-09. The per unit estimates of weighted ratios for various size units across various size handloom and powerloom unit is estimated using survey data and multipliers. Theses ratios are then applied on the estimates of units for various size classes and sector, which are derived using NSSO data on unorganized manufacturing sector and ASI data on factory sector. The ratios derived using survey data are mainly of such units, which are primarily engaged in weaving activity. On the other hand, the numbers of units derived using NSSO data on unorganised manufacturing sector and ASI sector are of those units, which are engaged in weaving activity either fully or partially. Thus care has to be taken to factor in this while applying ratios on the number of units. In addition to this, several units remain closed and non-working throughout the year. In order to take care of all these factors, OAME units are multiplied by 65 per cent, NDME by 70 per cent, DME by 80, small to medium size units by 85 per cent, medium units by 90 per cent and large units by 95 per cent. Smaller the unit, more difficult is for this to maintain its operation throughout the year due to its sensitivity for any price increase or availabilty of raw material.

NSSO data on unorganised sector is available latest for year 2005-06. ASI unit level data for latest year is available for year 2004-05 and data for year 2005-06 is derived using published ASI data for year 2005-06. Thus unit level data is for year 2005-06, but ratios derived from survey data are for year 2008-09. In such case, the estimates of overall production, employment, output and value addition, which would be derived using these sets of data are treated as data for year 2005-06. This is because

ratios in quantity terms do n't change much over time, but number of units seems to have changed significantly during the period 2005-06 to 2008-09.

The estimates of production of fabrics derived this way match with estimates derived using Bedi & Cororation, IFPRI(DP), 2008 methodology. Both these estimates are however different than the official estimates of production of fabrics, but are matching with consumption estimates. The analysis using two different sets of method confirm the fact that hank yarn (cotton and synthetic) is being diverted to a large extent towards the consumption of powerloom sector.

Chapter 4 analyse the Pattern of changes in consumption using Textile Committee data for the year 1990, 2000 and 2006. The analysis is also done for changes in composition of consumption basket of individuals using NSSO household consumption data for year 1993-94 and 2004-05. In order to understand the responsiveness of the consumer to income and price changes we have measured the income (or more specifically expenditure) and price elasticities for various income group range-wise. These elasticities are however not used to estimate the future demand due to lack of information on projected growth in various income classes. The demand for domestic consumption is projected for for 2011-12 and 2015-16 based on elasticities derived in Bedi & Cororation, IFPRI(DP), 2008 study. This chapter also covers the retailing structure and value chain analysis exploring various intermediary stages involved using small NCAER, Survey 2008-09 data. The shortcomings in the supply chain for textiles and clothing products are also discussed.

Chapter 5 analyse the export, import and competitiveness of various items of textile and clothing and the future potential for its growth during 2007-08 to 2011-12 and 2007-08 to 2015-16.

Chapter 6 covers the estimates on technical textile and problems and measures to promote the growth in this segment.

In chapter 7, we have analyzed the skill gap, its nature and measures required to improve the institutions for bridging the skill gap for sectors such as mill, powerloom, handloom and garments.

Chapter 8 is divided into four sections. The first section deals with pattern of investment taken place in recent past across various segments of the industry. In this regard contribution of both domestic funding as well as foreign direct investment (FDI) has been discussed. In the third part, the role of TUFS in modernization of the industry has been explored. On the basis of fabrics equivalent demand, the projections for investment in various segments of the industry for the period 2007-08 to 2011-12 and 2007-08 to 2015-16 are being made in the fourth section of this chapter.

1

Chapter 1: Indian Textiles and Clothing Industry in Mill Sector

The Indian textile and clothing industry continues to have an important place in the national economy as regards employment, value addition or income generation, and export earnings. It is estimated to provide employment to more than 16.98 million workers as per NSSO 61st round July 2004 - June 2005 and 12.6 million as per ASI & NSOO data on unorganized manufacturing sector, 11.6 percent of manufacturing value added during 2006-07 (National Accounts Statistics, 2008), and 13.8 percent of total export earnings during 2007-08 (Compendium of Textile Statistics, Office of the Textile Commissioner, Mumbai). The share of clothing in total expenditure of households is estimated at 6.65 per cent in 2004-05 at all India level (365 days as reference period, NSSO, 61st Round), while expenditures on clothing account for more than 4.02 percent of total private consumption expenditures during 2006-07 (National Accounts Statistics, 2008). The industry is dominated by small, fragmented, non-integrated units with the only exception being the spinning sector. The spinning is dominated by large units and it has been able to undergo significant modernization since the 1990s. The main factors behind the modernization include lowering of custom duties and other restrictions on imports of machinery and equipment and lowering of restrictions on imports and exports of raw cotton and yarn. However, the weaving sector lags behind, as it has not been able to modernise at the desired pace.

It is often argued that previous policies related to various taxes, labor and other regulations have favoured small-scale, labor-intensive enterprises and discriminated against large-scale, capital-intensive firms. Of the total employment in the industry, 81.5 percent is in marginal and small firms. It is believed that this industry structure has negatively affected the competitiveness of the textile and clothing industry. Policy reforms started in the 1990s, which picked up after 1999 and have induced recent technological development. These inclue developments of export zones, labor market reforms, coupled with provision of investment support under a Technology Up gradation Fund Scheme (TUFS) since 1999. Other important changes under NTP (2000) were (1) the removal of restrictions in loom capacity, (2) the use of automatic looms, and (3) the elimination of regulations that allowed only small-scale firms to produce garments and hosiery. Garment production was reserved exclusively for the small-scale sector for long; it was however "de-reserved" in 2000. The dereservation helped the process of modernization of these sectors. However, taxation on goods made from synthetic fibers remains high relative to cotton goods, despite the series of cuts implemented. The Indian textile industry also derives strength from a relatively low-cost raw material base, relatively low labor costs, and a well-developed network of research, development, design, and testing institutes facilities.

The cotton ginning sector is characterized by small units facing problems of contamination, outdated technology, lack of cleaning machinery, failure to use effective management practices, and a lack of

implementation of adequate grades and standards. This contrasts with the spinning industry, which is dominated by medium and large units producing more than 90 percent of the output and total value added.

During an early period of policy reform (1983–1990), the demand increased due to spurt in exports, which casued better utilization of existing spindles and led to reduction in idle capacity. During later phase (1990–2005), the investment in new spindles increased at a very rapid rate. This lead to rise in efficiency of the working spindles and relative productivity of working spindles compared to the most recent technology improved over time (Bedi & Cororation, IFPRI (DP), 2008).

Changes in textile policy from physical controls toward market-oriented incentives have prompted changes in the structure of industry. The share of hand-loom sector in total production of cotton and synthetic fabrics declined continuously, from 25 percent in 1983 to less than 8 percent in 2005, whereas during the same period, the power-loom sector share increased from 44 percent to nearly 73 percent (Bedi & Cororation, IFPRI (DP), 2008). Production of synthetic fabrics has grown at almost twice the rate of cotton fabrics.

The removal of reservation of production in various stages of the industry - from fiber to the garment making, and the introduction of a uniform modified value-added tax (MODVAT) have prevented the negative impact of the escalating duty on various stages of the value added. The escalating duty on value addition was a major factor in discouraging investment in large dyeing, fabrics, and garments units. Units were split into smaller units both to evade duties as well as to take advantage of excise benefits. The economic reform process of bringing better compliance at all stages of production help raise competitiveness of the industry.

1.1 The Structure of Textiles and Clothing Industries

The textiles and clothing industry is broadly divided into five stages of production: ginning, spinning (yarn), weaving & knitting (fabrics), dying and processing and garments. The total number of textile and clothing units increased from 5.25 million in 2000–2001 to around 5.8 million during 2005-06. These estimates are derived using factory sector data from Annual Survey of Industries and non-factory sector data from NSSO unorganized manufacturing sector, which represent the entire universe of manufacturing sector. The non-factory sector or unorganized manufacturing sector is further divided into Own Account Manufacturing Enterprise (OAME), Non-Directory Manufacturing Establishment (NDME) and Directory Manufacturing Establishment (DME). OAME is manufacturing enterprise, which runs without any hired worker employed on a fairly regular basis. NDME is manufacturing establishment employing less than six workers (household and hired workers taken

together). DME is manufacturing establishment employing six or more workers (household and hired workers taken together). The maximum number of workers employed in DME units is 9 with power and 19 without use of power. Factory sector or organized sector refered here means unit employing 10 or more workers and are/were working on any day proceeding 12 months with the aid of power or 20 or more workers and are/were working on any day of the proceeding 12 months without the aid of power. Power means electrical energy or any other form of energy which is mechanically transmitted and is not generated by human or animal agency.

The data for year 2005-06 is estimated using non-factory sector data (NSSO 62nd round July 2005 - June 2006) and estimates for factory sector data for year 2005-06 using ASI, factory sector data for the latest year 2004-05. The share of Own Account Manufacturing Enterprise (OAME) units is very high (87.6 per cent), Non-directory manufacturing enterprises 8.9 per cent, Directory manufacturing enterprises 2.2 per cent. The units falling under NSSO data, but belonging to factory sector as per definition accounts for 1 per cent. In addition, the units falling under ASI sector accounts for 0.3 per cent of the total units belonging to textile and clothing segment. The total value addition in textile and clothing sector is estimated at Rs 718520 million, which accounts for 11.6 per cent of the total value addition in the manufacturing sector (NAS, CSO data for year 2008). Textile and clothing sector accounts for 16.98 million employment generation (principal and subsidiary) in the country as per the data available from NSSO employment by industry of work, 61st round data (2004-05) as compared to employment generation of 459 million in the entire economy. Thus share of employment generated in textile and clothing sector account for 3.7 per cent of the total number of employees in the economy.

It has been estimated that units belonging to ginning, cleaning, and baling units' accounts for only 0.12 per cent of the total textiles and clothing sector units and 0.1 per cent of the total value added in the sector. Most of ginning, cleaning, and baling units belong to the OAME segment. India's cotton ginning industry has the advantage in raw materials. The handpicked cotton is considered superior to mechanically harvested cotton. However, Indian cotton has major problems of contamination with other fibers and foreign matters, which often consist of admixtures of multiple varieties of different fiber characteristics. The units belonging to cotton and synthetic spinning accounts for 1.68 per cent, cotton and synthetic weaving 12.54 per cent, cotton and synthetic finishing 1.10 per cent, cotton and synthetic made-ups 14.54 per cent, cotton and synthetic garments 34.89 per cent and remaining fibres units accounts for 35.12 per cent of the total textile and clothing units. The units in spinning sector are relatively less as most of the units in this segment belong to large sector. This becomes clear as units belonging to cotton and synthetic spinning in terms of value added accounts for 22.4 per cent in the total value added in textile and clothing sector. The high share in value added compared to units is mainly because of dominance of medium and large

units in spinning sector. The share of large units in total value addition in cotton and synthetic spinning sector accounts for 86.1 per cent. The cotton and synthetic weaving segment on the other hand accounts for 12.54 per cent in terms of units and 15.1 per cent in terms of value added of the total textile and clothing sector. The marginal and small units in cotton and synthetic weaving segment accounts for 68.2 per cent of the total value addition in this segment. This is mainly because of the dominance of handloom and powerloom sector in this segment. In order to separate handloom sector from powerloom sector, an attempt is made to find out share of units running without the use of power (less than 1 per cent share of production spent on power) in total cotton and synthetic weaving segment belonging to non-factory sector. It has been estimated that 36.1 per cent of the units in non-factory sector belonging to this segment belong to handloom sector, which accounts for 22.4 per cent of the total value added in this segment. Similar analysis is possible in the other segments such as cotton and synthetic finishing, made-ups and garments. The share of units belonging to cotton and synthetic spinning segment accounts for 1.10 per cent, cotton and synthetic made-ups 14.54 per cent, cotton and synthetic garments 34.89 per cent and remaining fibres units accounts for 35.12 per cent of the total textile and clothing units (NSSO data on unorganized manufacturing sector, 62nd round July 2005- June 2006).

In this chapter, we mainly deals with the performance of units belonging to mill sector i.e. mainly medium and large scale sector.

1.2 Performance Indicators for the Mill Sector

In the textile mill sector spinning is the most important segment. During the year 2007-08, there exist 2992 spinning mills in the country; out of these 1773 units belong to large spinning units. In composite mills, spinning, weaving and dying activities are integrated. Their number is relatively much less as compared to spinning units. The total number of spindles installed are estimated at 39.07 million in these spinning and composite mills apart from 0.621 million rotors. Apart from these medium and large spinning units, there exist several marginal and small spinning units, which are discussed in detail in next chapter as discussion in this chapter is mainly confined to medium and large units belonging to spinning, weaving, composite and garment units.

The weaving activity is mainly undertaken in the unorganized sector i.e. handlooms and powerlooms and the share of mill sector in weaving segment is very small. As per information from Ministry of Textiles, Compendium of Textile Statistics, Office of the Textile Commissioner, Mumbai, there exists 2.1 million looms installed in estimated number of 0.47 million marginal and small powerloom units, apart from 3.89 million looms installed in handloom sector. An attempt is made in the next chapter to estimate the actual number of looms in powerloom and handloom sector, but the analysis in this chapter is confined to only composite and independent weaving mills. The independent weaving units

are nothing but large powerloom sector units. The total numbers of composite mills are estimated at 176 in the country in which 56000 looms are installed. Apart from this there exists, 179 exclusive large weaving mills in which 15000 looms are installed during 2007-08.

Another activity studied in this chapter includes the large and medium units belonging to garment segment.

Thus in this chapter, the state of mill sector in spinning, composite, weaving and garment sectors is studied in sections below. Section 1.2 is devoted to spinning sector, Section 1.3 to independent large and medium weaving mills, Section 1.4 to composite mills sector and Section 1.5 to large and medium garment mills. The anylsis belonging to non factory units is studied in detail in next chapter for each of segment namely spinning, weaving & knitting and garment separately.

1.2.1 Spinning Sector

Spinning is the process of manufacturing yarn from fibre. The yarn spun through spinning process is called spun yarn. Yarn which does not require spinning for its production is called filament yarn. The cotton and synthetic spun yarn is produced on cotton spun system. During the year 2007-08, the total number of installed spindles in both spinning and composite mills accounts for 39.07 million apart from 6.21 lakh rotors (Confederation of Indian Textile Industry (CITI), Handbook of Statistics, 2008). The data reported in CITI handbook is of medium and large-scale units. It may be noted that although there are many marginal and small-scale spinning units, these units are not accounted for in the CITI handbook data as their contribution to value addition and value of output is small. The share of medium and large units in total value added of the sector is 92.8 per cent whereas their share in value of output is 90.2 per cent. These units employ around 66 percent of the total labor engaged in the spinning sector.

Apart from cotton spun system, wool yarn and wool acrylic blend is produced on worsted spun system. Silk yarn is spun on different kind of spinning system. The installed capacity of woollen yarn is approximately 30 million kilogram and that of silk yarn 0.6 million kilograms. The focus of this study is on cotton and synthetic yarn and thus the anylsis is confined to it only.

Apart from spun yarn produced on cotton spun system, filament is an important yarn belonging to synthetic segment. However, filament yarn is not produced through spinning process. The capacity of filament yarn in India is estimated at 2101 million kg, while its production is 1509 million kg during 2007-08. The study covers cotton and synthetic yarn, both spun and filament.

Over the past sixteen years cotton and synthetic yarn production has increased by approximately 3 times from 1924 million kg in 1990-91 to 5512 million in 2007-08. There is however slowdown in growth. The annual rate of growth was 9 per cent per annum during 1990-95, 6.5 per cent per annum during 1995-2000 and only 2.7 per cent per annum during 2000-2005. For the period 2005-06 to 2007-08, the growth rate however has picked up and is 9 per cent per annum. The estimates for growth during the year 2008-09 on the basis of half yearly results are negative. Although over the period 1990-91 to 2007-08, the yarn production increased by 186 per cent, but that of cotton yarn grew only by 95 per cent, whereas that of synthetic yarn grew by as high as 518 per cent. As a result, the share of cotton yarn in total spun yarn production declined from 78.4 per cent in 1990-91 to 54.7 per cent in 2007-08. Throughout the period, synthetic yarn has maintained much higher growth rate as compared to cotton yarn. The rising share of synthetic yarn is quite in keeping with the global trend and there is further scope that its share would increase further to around 45 in near future.

Another characteristic of the cotton and synthetic yarn produced in India is that the share of spun yarn is declining substantially whereas that of filament yarn is rising rapidly over the period. In 1990-91 non-spun filament yarn accounted for only 14.4 per cent of the total yarn which steadily rose to 22.7 per cent in 2000-01 and 28 per cent in 2007-08. Its production increased by 422% from 278 million kg in 1990-91 to 1509 million kg in 2007-08. Although there are four major types of non-spun filament yarn, namely viscose, nylon, polyester and polypropylene yarn, but the polyester yarn is the most important among them and its share is rising. In 1990-91 it accounted for around 67% of the total which increased to 76% in 1995-96, 89% in 2000-01 and further to 94% in 2007-08 (Table 1.1).

The 100 per cent synthetic spun yarn grew rapidly from 104 million kg to 341 million kg over the fifteen years period, 1990-2005, and consequently its share in total yarn production increased from 5.4% to 7.4%. This share however declined to 6.8% in 2007-08. The increase took place mainly in the category of 100% polyester spun yarn which started from a meager 4 million kg in 1990 and reached 199 million kg in 2005, whereas the other two categories, 100% acrylic spun yarn and 100% viscose spun yarn remained more or less unchanged. Share of blended yarn in total yarn is a moderate one of 10.8% in 1990 which within 10 years rose to 15.5%. In the first half of the 2000s the production of blended yarn declined in absolute term thereby reducing its share to around 12%. The two major varieties within this group, namely cotton/polyester blend and polyester/viscose blend which together shared 87% of the production in 1990, experienced substantial increase in production (Table 1.1).

Table 1.1 Production of cotton and synthetic yarn (in million kg)

Name of Yarn	1990-91	1995-96	2000-01	2005-06	2006-07	2007-08	2008-09*
COTTON YARN	1510	1894	2267	2521	2824	2948	2956
% Annual growth Rate		4.6	3.7	2.2	12.0	4.4	0.3
BLENDED YARN							
(i)COTTON/POLSTER BLENDED YARN	67	108	177	168	207	219	
(ii) COTTON/VISCOCE SPUN YARN	0	1	7	15	18	24	
(iii) POLYSTER/VISCOSE BLENDED YARN	114	251	367	322	324	343	
(iv) OHER BLENDED YARN	16	23	76	84	85	91	
SUBTOTAL	83	383	627	589	635	677	674
% Annual growth Rate OF Blended Yarn		35.8	10.4	-1.4	7.8	6.6	-0.6
MAN MADE YARN							
(i)100% CELLULOSIC YARN	70	77	62	79	83	86	
(ii)100% ACRYLIC YARN	30	80	66	63	57	56	
(iii)100% POLYSTER SPUN YARN	4	30	113	199	208	228	
SUBTOTAL	104	187	241	341	354	370	360
% Annual growth Rate		12.5	5.2	7.2	3.8	4.5	-2.7
Total of Spun Yarn	1697	2464	3135	3451	3813	3995	3990
% Annual growth Rate Of Spun Yarn		7.7	4.9	1.9	10.5	4.8	-0.1
FILAMENT YARN							
(i)VISCOSE YARN	50.9	60.7	55.3	53.1	54.0	51.0	
(ii)NYLON YARN	38.9	41.6	26.3	36.8	32.0	28.0	
(iii)POLYSTER YARN	185.3	376.2	819.7	1075.8	1271.0	1420.0	
(iv)POLYPROPYLENE	2.4	14.6	19.8	13.6	14.0	11.0	
Total of Filament Yarn	278	493	921	1179	1371	1510	1414
% Annual growth Rate Of Filament Yarn		12.2	13.3	5.1	16.3	10.1	-6.4
GRAND TOTAL	1925	2957	4056	4637	5184	5512	5404
% Annual growth Rate		9.0	6.5	2.7	11.8	6.3	-2.0
COTTON SYNTHETIC RATIO (%)	78.4	70.4	63.2	61.2	60.3	60.2	61.4

NOTE: (*) expected

(1) total cotton fibre used = total cotton yarn*1.17 + (25% of blended yarn)*1.17

(2) total synthetic fibre used=75% of blended yarn*1.025 + man made yarn*1.025 + total of filament yarn

(3) total fibre used = total cotton fibre used+total synthetic fibre used

(4) cotton synthetic ratio = total cotton fibre used*100/total fibre used

Source: Handbook of Statistics on Textiles Industry, 2008. Confederation of Indian Textiles Industry (CITI), New Delhi. Ministry of textile website, www.txcindia.com

1.2.2 Trends in consumption and exports of yarn

The total domestic consumption of yarn steadily increased from 1914.7 million kg in 1990 to 4522 million kg in 2007-08. During the first half of the 1990s, it increased at a rate of 7.1 per cent per year and in the second half declined by 4.7 per cent per annum. The yarn consumption grew at 3.2

per cent per annum during 2000-05. After this moderate growt, the growth picked up to 8.4 per cent per annum during 2006-07 and 4.5 per cent during 2007-08.

However throughout the 1990s the consumption grew at lower rate than the production. In the first half of 2000s, the growth in production was lower tan consumption. In absolute terms however domestic consumption remained at much lower level as compared to production.

The country continues to be net exporter of yarn. The growth rate of net export is 35.3 per cent during 1990-95, 16.7 per cent during 1995-00 and 0.6 per cent during 2000-05 (Table 1.2). The export picked up significantly latter and is 21.0 per cent and 15.5 per cent during 2006-07 and 2007-08 respectively.

The domestic consumption of cotton yarn grew from 1374 million kg to 2220 million kg over the last fifteen years. It grew at an annual rate of 3.9 per cent during 1990-95, 1.0 per cent during 1995-00 and 3.2 per cent during 2000-05. The growth is 8.7 per cent during 2006-07 and 4.2 per cent during 2007-08.

The self consumption of yarn by mill sector declined from 248 million kg during 1990-91 to 138 million kg during 2007-08. The hosiery yarn delivery to the decentralised grew at a very rapid rate from 197 million kg during 1990-91 to 802 million kg during 2007-08. The data regarding delivery of cone yarn meant to be consumed by powerloom setor and hank yarn meant to be consumed by handloom sector is also given in Table 1.2, but several studies have brought out the fact that a significant proportion of hank yarn is being diveretd for the consumption in powerloom sector.

The domestic consumption of spun yarn grew from 1611 million kg to 3167 million kg over the period 1990-91 to 2007-08. It may be seen that the consumption grew at an annual rate of 6.5 per cent during 1990-95, 2.7 per cent during 1995-00 and it decreased to 2.3 per cent during 2000-05. The consumption grew by 7.7 per cent during 2006-07 and 4.0 per cent during 2007-08. The spun yarn consumption by powerloom grew from 731 million kg during 1990-91 to 1374 million kg during 2007-08 and consumption by handloom from 375 million kilogram to 535 million kilogram. The hosiery spun yarn consumption grew phenomenal from 217 million kilogram to 946 million kilogram. The spun yarn delivery to decentralized sector grew by 4.6 per cent per annum, while to various sectors such as powerloom by 3.8 per cent per annum, handloom by 2.1 per cent, hosiery by 9.0 per cent per annum during the 17 year period from 1990-91 to 2007-08.

The domestic consumption of filament yarn grew at a much rapid rate compared to spun yarn. The growth is 9.2 per cent per annum from 303.7 million kg to 1355 million kg during 1990-91 to 2007-

08. In filament yarn segment, polyester yarn remained dominant. The share of polyester filament yarn in total filament yarn production increased from 66.5 per cent in 1990-91 to 94.1 per cent in 2007-08. Polyester filament yarn grew by 12.7 per cent during 1990-91 to 2007-08, while the overall filament yarn grew by 10.5 per cent per annum.

The country had remained the net exporter of yarn throughout the period under consideration. The export of cotton yarn increased from 90 million kg to 664 million kg during the period 1990-91 to 2007-08. The maximum growth took place during the period 1990-95 at an annual rate of 23.8 per cent. The growth was 14.4 per cent during 1995-00 and then 1.5 per cent during 2000-05. The export of cotton yarn then picked up by 11.6 per cent during 2006-07 and 7.8 per cent by 2007-08. The share of cotton yarn exports in its production increased from mere 6.1 per cent in 1990-91 to 13.8 per cent in 1995-96 to 22.6 per cent in 2000-01. The share then remained more or less stable and is estimated at 22.5 per cent during 2007-08. The situation is similar in case of spun yarn. The export of spun yarn grew by 13.6 per cent per annum during the period 1990-91 to 2007-08 from 99.5 million kilogram to 864.1 million kilogram, while production grew by only 5.1 per cent per annum. This explains much slower growth of 4.1 per cent per annum during the period for domestic usage.

In case, the filament yarn is taken into account, the production of spun and filament yarn grew by 6.2 per cent per annum from 1988.5 million kilogram to 5512 million kilogram. The domestic usage of spun and filament yarn is estimated to have grown by 5.2 per cent per annum from 1914.7 million kilogram to 4522 million kilogram. The share of exports in spun and filament yarn grew by 15.0 per cent from 102.7 million kilogram to 1110.5 million kilogram. The share of filament yarn export grew rapidly from 5.2 per cent in 1990-91 to 11.0 per cent in 1995-96 to 17.9 per cent in 2000-01 to 20.1 per cent in 2007-08. The country was net importer of filament yarn during 1990-91, while its net exports of filament yarn is estimated at 154.3 million kilogram during 2007-08. Filament yarn export share in its production grew from mere 1.1 per cent in 1990-91 to 16.3 per cent in 2007-08.

Table 1.2
Consumption and import, export of cotton, synthetic and filament yarn (in million kg)

	1990-91	1995-96	2000-01	2005-06	2006-07	2007-08
Cotton yarn						
Production of cotton yarn	1464	1894	2267	2521	2824	2948
Consumption by mills	248	159	154.5	130	135.5	138
Consumption by powerloom	556	567	534	710	773	796
Consumption by handloom	342	504	530	422	461	490
Consumption by hosiery	197	362	440	695	772	802
Other form	31	70	85	85	78	86
Total domestic consumption of cotton yarn	1374	1662	1743.5	2042	2219.5	2312
Annual growth Rate in Total Domestic Consumption of Cotton Yarn %		3.9	1.0	3.2	8.7	4.2
Exports of Cotton yarn	90	261.5	513	552	616	664
Annual growth Rate in Imports of Cotton Yarn %		23.8	14.4	1.5	11.6	7.8
Blended yarn and 100% non cotton yarn						
Production of blended yarn and 100% non cotton yarn	246	591	893	937	989	1055
Consumption by mills		99.9	115.7	47.4	45.2	77.9
Consumption by powerloom	175	315	486	533	574	578
Consumption by handloom	33	67	58	49	43	45
Consumption by hosiery	20	43	97	139	150	144
Other form	9	24	27	15	13	10
Total domestic consumption of blended yarn	237	549	784	784	825	855
% Annual growth Rate in Total Domestic Consumption of Blended yarn		18.3	7.4	0.0	5.2	3.6
Exports of Blended yarn and 100% non cotton yarn	9.4	42.1	109.3	153.6	163.8	200.1
% Annual growth Rate in of Exports of Blended yarn and 100% non cotton yarn		35.0	21.0	7.0	6.6	22.2
Spun Yarn						
Total domestic consumption of spun yarn	1611	2211	2527.5	2826	3044.5	3167
Total exports of spun yarn	99.5	303.6	622.3	705.6	779.8	864.1
Filament Yarn						
(i) Viscose Yarn Production	50.9	60.7	56.3	53.1	54.0	51.1
Exports of viscose yarn	1.7	6.7	10.9	9.9	11.9	14.6
Imports of viscose yarn	0.4	0.1	0.5	2.5	2.0	2.8
(ii)Nylon Yarn production	39.8	41.6	26.3	36.8	32.3	27.6
Exports of nylon yarn	0	0.3	3.8	5.1	1.8	2.3

Imports of nylon yarn	1.1	0.5	3.6	11.2	9.2	2.6
(iii) Polyester Yarn production	185.3	376.2	819.7	1075.8	1270.8	1420.1
Exports of polyester yarn	1.3	14.8	92.1	105.7	175.4	228.6
Imports of polyester yarn	26.8	19.7	57.6	92.7	91.3	85.8
(iv)Polypropylene production	2.4	14.6	18.5	13.6	13.4	10.5
Export polypropylene yarn	0.1	0.9	0.8	0.5	1.0	0.8
Import of polypropylene yarn	0.0	0.2	0.1	0.7	0.7	0.9
Total production of filament yarn	278.5	493.0	920.7	1179.3	1370.5	1509.3
Total Domestic Consumption of Filament Yarn	303.7	490.8	875.1	1165.2	1283.5	1355.0
% Annual growth Rate in Total Domestic Consumption of Filament Yarn		10.1	12.3	5.9	10.2	5.6
Total exports of filament yarn	3.1	22.7	107.5	121.2	190.1	246.3
Total import of filament yarn	28.3	20.5	61.9	107.1	103.2	92.0
Net Exports of Filament Yarn	-25.2	2.2	45.7	14.1	86.9	154.3
Total Spun and filament Yarn						
Total Domestic Consumption of Yarn	1914.7	2701.8	3402.6	3991.2	4328	4522
% Annual Growth rate of consumption of yarn		7.1	4.7	3.2	8.4	4.5
Total Exports of yarn	102.7	326.3	729.9	826.8	969.9	1110.5
Total Imports of yarn	38.5	35.2	99.3	177.0	183.4	202.2
Net Exports	64.2	291.1	630.6	649.8	786.6	908.2
% Annual Growth rate in Net Exports		35.3	16.7	0.6	21.0	15.5

Source: Handbook of Statistics on Textiles Industry, 2008. Confederation of Indian Textiles Industry (CITI), New Delhi. Ministry of Textiles, Compendium of Textile Statistics, Office of the Textile Commissioner, Mumbai. Centre for Monitoring Indian Economy .

1.2.3 Capacity Utilization of Spinning Mill

Capacity utilisation is an important indicator of resource utilisation for any industrial unit. This is especially important for capital intensive sectors like spinning. The data used for this purpose is 235 spinning units from Prowess database of Centre for Monitoring Indian Economy (CMIE).

Bedi & Cororation, IFPRI (DP), 2008 estimated production per working spindles over time. using data from Ministry of Textiles, Compendium of Textile Statistics, Office of the Textile Commissioner, Mumbai. The dta used is spun yarn production year-wise in quantity terms along with estimates of working equivalent spindles at 100 per cent utilisation to derive spun yarn production per working spindles for each year. Assuming that technology used and count

composition of yarn produced in Textile Commissioner data and CMIE prowess data are same, the production per installed spindles using Prowess data is compared with production per working spindles at 100 per cent utilisation using Textile Commissioner data. This is used to find out the extent of capacity utilization in spinning sector in units belonging to Prowess data.

In this analysis, capacity of one rotor is assumed to be equal to four spindles (South Indian Textile Research Association (SITRA), Coimbatore). Cases with capacity utilisation less than 25% and greater than 125% have been omitted considering them as outliers or due to data error. The capacity utilization worked using prowess data varies from 69.8 to 89.9 per cent during the period 1990-91 to 2006-07 (Table 1.3).

Table 1.3
Average Capacity Utilization (%) in Spinning Mills

Year	Capacity Utilization (%) using Prowess data	Capacity Utilization (%) (Textiles Commissioner's Office)
1990-91	79.9	80
1991-92	79.4	76
1992-93	78.7	78
1993-94	82.9	84
1994-95	87.1	81
1995-96	85.6	86
1996-97	82.2	86
1997-98	72.7	86
1998-99	74.2	79
1999-00	76.3	83
2000-01	70.0	85
2001-02	69.8	82
2002-03	75.8	80
2003-04	77.2	83
2004-05	81.4	87
2005-06	81.6	88
2006-07	89.9	89
2007-08		90

Source: derived from Prowess, CMIE data and Ministry of Textiles, Compendiumof Textile Statistics, Office of the Textile Commissioner, Mumbai.

The prowess data is about a few large mills and thus the capacity utilisation in these is bound to be different from the average capacity utilization using Ministry of Textiles, Compendium of Textile Statistics, Office of the Textile Commissioner, Mumbai.

Bedi & Cororation, IFPRI (DP), 2008, found that during the period 1986 to 1996, India witnessed one of the highest investments in new spindles due to availability of machinery at competitive prices. This resulted in improved productivity of the spinning sector. Despite this spurt in investment, old spindles (42 to 46 years during 1996) reamin installed, most of them were belonging to the government sector and were hardly operational and were awaiting closures.

After year 1996, investment remained high though was lower compared with to 1986 to 1996 period. It however picked up again after 2000 due to major policy reforms in the textiles sector. Large investment in modern spindles during the period after 2000 narrowed the technological gap between working and modern spindles of the latest-available technology.

An attempt is made to estimate the excess use of working spindles compared to required spindles of 2005 technology. The method used is similar to the one as applied by Bedi & Cororation, IFPRI (DP), 2008. The excess use of spindles over the minimum required at 2005 technology declined from 24.37 per cent in 1990 to 14.74 per cent in 1996. Data after year 1996 include Small Size Spinning units (medium size as per defination used in this report). The excess use of spindles declined from 17.10 per cent in 1996 to 9.22 per cent in 2005.

Although the utilization of working spindles improved due to the modernization process, the percentage of idle spindles in relation to installed spindles increased from 16.60 percent in 1990 to 28.48 percent in 1996. If SSI spinning units are included, the idle spindles percentage share increase from 30.55 percent in 1996 to 34.17 percent in 2005. However, this led to better utilization of working spindles, which improved from 80.71 percent in 1990 to 86.10 percent in 1996 (86 percent if SSI units are included) and further to 89 percent in 2005 as per Textile Commissioner data.

The ITMF data on shipment to India are cross-checked against their availability. By comparing the ITMF data on the total number of spindles shipped with the Textile Commissioner's data on net capacity expansion since 1974, it is possible to estimate the replacement ratios over time. These ratios, together with the data on spindles installed since 1950, are used to estimate the spindles shipped from 1951 to 2005–2006. The data show that the modernization process in the spinning industry has stepped up due to the economic reforms introduced in the 1990s.

Bedi & Cororation, IFPRI (DP), 2008, linked the growth in productivity with the modernisation process. Bedi & Cororation, IFPRI (DP), 2008 estimated the average productivity growth for the entire period at 2.06 percent per annum, though there are variations within the period. The growth in productivity for 1983 to 1990 is 0.23 percent. This growth improved to 2.37 percent during 1990–2005. This second phase could further be divided into two subperiods: 1990–1996 and 1996–2005. The slowdown in modernization is reflected in the decline in productivity growth after 1996 to 1.86 percent in the second subperiod.

Bedi & Cororation, IFPRI (DP), 2008, estimated that the combined productivity index for the cumulative spindles installed during the past 30 years is estimated at 94.2 per cent compared with the

modern spindles of 2005 technology. This is marginally higher than the actual productivity index for working spindles estimated at 93.6 per cent. Thus, most operational spindles appear to be of age less than 30 years old, though a few working spindles much older than that have very low productivity, thus bringing down the overall productivity index of working spindles. Because modern spindles are utilized more optimally compared with older ones, the productivity index is not affected much. Most spindles older than 30 years neither are in working condition nor are working most of the year; thus they are awaiting clearance for closures. The spindles installed in NTC units though reamin operational, but their utilisation is very low.

1.2.4 Yarn-fibre ratio

It refers to conversion of yarn per unit of fibre used i.e. from one unit of fibre how much units of yarn is being produced. This shows the efficiency in the utilization of raw materials. The ratio has been calculated both in quantity and value terms. The yarn-fibre ratio in quantity terms implies that in calculating the ratio both numerator and denominator were in the same units of quantity. Similarly, the yarn-fibre ratio in value terms means that both the numerator and denominator are in Rupee terms. Here the sample of 249 spinning units from Prowess database is taken. Here, it is important to point out that the number of firms vary for which data is available. The maximum numbers of firms for which data for a particular year is availble are 249. The average yarn-fibre ratio in quantity terms less than 0.5 and greater than 1 have been omitted, considering them as outliers. In value terms, yarn-fibre ratio less than 1 and greater than 3 are taken as outliers and are ignored.

The estimates in Table 1.4 show that over the last 17 years period not much change has occurred in the conversion from fibre to yarn ratio in quantity terms as ratio remain more or less stable and vary from 0.79 to 0.84.

Table 1.4
Average Yarn-Fibre Ratio and WPI of Fibre and Yarn for Spinning Mills

Year	Yarn-Fibre Ratio (in quantity terms)	Yarn-Fibre Ratio(in value terms) (at current prices)	WPI of Raw Cotton (1995-96=100)	WPI of Man Made Fibre (1995-96=100)	WPI OF Cotton Yarn (1995-96=100)	WPI of Synthetic Yarn (1995-96=100)	WPI of Cotton Yarn / WPI of Raw Cotton	WPI of Synthetic Yarn / WPI of man made fibre	WPI of Fibre(1995-96=100)	WPI of Yarn (1995-96=100)	WPI of Yarn / WPI of Fibr
1990-91	0.81	1.94									
1991-92	0.81	1.63									
1992-93	0.84	1.69									
1993-94	0.83	1.77									
1994-95	0.8	1.51									
1995-96	0.82	1.5	100	100	100	100	1.00	1.00	100	100	1.0
1996-97	0.83	1.63	83.77	83.20	93.18	92.95	1.11	1.12	83.54	93.09	1.1
1997-98	0.8	1.58	97.74	74.36	95.84	91.49	0.98	1.23	88.39	94.10	1.0
1998-99	0.8	1.6	104.97	69.41	96.73	81.77	0.92	1.18	90.74	90.74	1.0
1999-00	0.8	1.65	92.64	70.38	96.45	83.40	1.04	1.19	83.74	91.23	1.0
2000-01	0.81	1.67	98.93	74.01	101.98	96.30	1.03	1.30	88.96	99.71	1.1
2001-02	0.82	1.67	93.52	72.19	100.82	81.69	1.08	1.13	84.99	93.17	1.1
2002-03	0.8	1.81	89.37	78.38	98.77	89.17	1.11	1.14	84.98	94.93	1.1
2003-04	0.81	1.66	113.58	80.55	113.51	96.65	1.00	1.20	100.37	106.76	1.0
2004-05	0.81	1.62	104.15	84.08	113.92	97.72	1.09	1.16	96.12	107.44	1.1
2005-06	0.8	1.7	90.75	80.99	102.32	93.64	1.13	1.16	86.85	98.85	1.1
2006-07	0.79	1.75	95.41	82.58	106.68	94.75	1.12	1.15	90.28	101.91	1.1

Source: Computed from Prowess (CMIE) database,
Office of Economic Adviser, Ministry of Commerce, Government of India

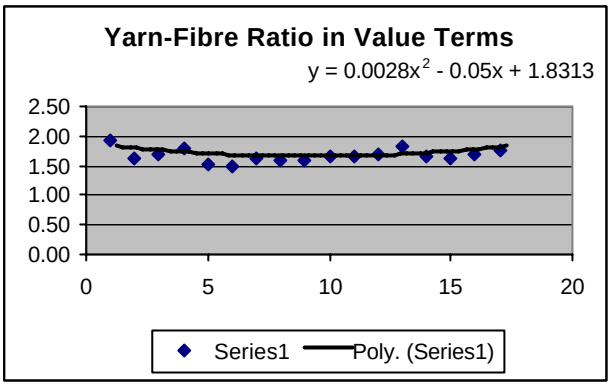
Yarn-fibre ratio (in value terms) i.e. rupee value of yarn made from one rupee value of fibre varies from 1.50 to 1.94 over the period. It may be seen from the Table 1.5 and the adjoining diagram that except for some fluctuations, yarn-fibre ratio (in value) has a declining trend upto 1997-98 after which it started increasing. The curve fitted has a convex shape.

Table 1.5 Regression Results for Yarn-fibre Ration in Value on Time

Multiple R	0.563614
R Square	0.317661
Adjusted R Square	0.220184
Standard Error	0.095294
Observations	17

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.831332	0.078377	23.36562	1.29E-12
t	-0.05002	0.020045	-2.49544	0.025692
t^2	0.002762	0.001082	2.552178	0.02302

Fig. 1.1



If we regress yarn-fibre ratio (in value) on time (t) and squared values of time (t^2), we find that P-value of both the regressors t and t^2 to be significant. As the coefficient of t is negative and that of t^2 is positive (see Table 1.5), it implies that value addition per unit of yarn declines in the beginning; but later on it increases reflecting an accelerating trend. It is to be noted that changes in yarn-fibre ratio (in value terms) is mainly caused by relative change in yarn and price of fibres. But other aspects such as change in yarn produced from various fibre compositions along with changes in count composition of yarn produced need to be also looked into. We might have moved away from over spun and use of waste yarn to improve quality. Any improvement in efficiency/ inefficiency may have been compensated by changes in count composition and fibre mix composition of yarn produced etc.

The share of cotton in total cotton and synthetic spun yarn production decreased from 85.6 per cent in 1990-91 to 76.2 per cent in 1995-96 to 71.7 per cent in 2000-01 and then increased to 72.9 per cent in 2005-06. The share of cotton yarn increased to 74.1 per cent in 2006-07. It is 73.6 per cent in 2007-08. The share of cotton in total cotton and synthetic yarn declined initially, but its share improved after the rise in raw cotton production with the large scale implatation of Bt cotton after 2002-03.

The analysis of changes in count composition of different sort of yarns produced in Indian mills (includes both SSI and non-SSI segment) could also be helpful in explaining the changes in fibre-yarn ratio. In case of cotton yarn, share of count group 1s-10s increases form 13.0 per cent in 1990-91 to 23.7 per cent in 2001-02. Its share declined latter to 21.1 per cent in 2005-06 and further to 20.5 per cent in 2007-08. The share of 11s-20s in total cotton yarn production declined from 23.4 per cent in 1990-91 to 21.9% in 1995-96 and then rose to 24.2% in 1998-99. Thereafter, the share of this count range declined to 18.7 per cent in 2007-08. Share of 31s-40s show a declinning trend and is estimated at 22.7 per cent during 2007-08.

The share of middle count range 41s-60s declined from 8.5% in 1990-91 to 5.9 per cent in 1999-2000 and improves thereafter to 7.5 per cent in 2007-08. The story is similar in case of higher count ranges.

Thus in case of cotton yarn share of coarser yarn is slowly decreasing in recent years and that of finer yarn is increasing. Somewhat similar pattern is emerged in case of synthetic and blended yarn.

Table 1.6: Count Composition of cotton Yarn Produced in Mills (SSI & non-SSI) (production in ml. kg.)								
Year	**1s to 10s**	**11s to 20s**	**21s to 30s**	**31s to 40s**	**41s to 60s**	**61s to 80s**	**Above 80s**	**Total**
1990-91	197	354	277	456	129	64	33	1510
	13.0	23.4	18.3	30.2	8.5	4.2	2.2	100.0
1991-92	211	342	255	440	113	54	35	1450
	14.6	23.6	17.6	30.3	7.8	3.7	2.4	100.0
1992-93	241	346	284	487	136	44	31	1569
	15.4	22.1	18.1	31.0	8.7	2.8	2.0	100.0
1993-94	278	385	314	494	144	45	37	1697
	16.4	22.7	18.5	29.1	8.5	2.7	2.2	100.0
1994-95	282	389	321	470	145	46	43	1696
	16.6	22.9	18.9	27.7	8.5	2.7	2.5	100.0
1995-96	310	415	391	490	153	95	40	1894
	16.4	21.9	20.6	25.9	8.1	5.0	2.1	100.0
1996-97	479	511	405	515	136	60	42	2148
	22.3	23.79	18.85	23.98	6.33	2.79	1.96	100
1997-98	503	508	427	542	144	52	37	2213
	22.7	23.0	19.3	24.5	6.5	2.3	1.7	100.0
1998-99	450	489	396	468	131	49	39	2022
	22.3	24.2	19.6	23.1	6.5	2.4	1.9	100.0
1999-00	509	504	455	524	131	44	37	2204
	23.1	22.9	20.6	23.8	5.9	2.0	1.7	100.0
2000-01	521	469	479	561	146	52	39	2267
	23.0	20.7	21.1	24.7	6.4	2.3	1.7	100.0
2001-02	524	439	456	548	147	61	37	2212
	23.7	19.8	20.6	24.8	6.6	2.8	1.7	100.0
2002-03	459	445	476	533	161	61	42	2177
	21.1	20.4	21.9	24.5	7.4	2.8	1.9	100.0
2003-04	435	403	493	522	161	64	43	2121
	20.5	19.0	23.2	24.6	7.6	3.0	2.0	100.0
2004-05	482	435	509	546	175	80	45	2272
	21.2	19.1	22.4	24.0	7.7	3.5	2.0	100.0
2005-06	532	489	585	558	203	96	58	2521
	21.1	19.4	23.2	22.1	8.1	3.8	2.3	100.0
2006-07	587	556	688	629	220	91	53	2824
	20.8	19.7	24.4	22.3	7.8	3.2	1.9	100.0
2007-08	604	550	750	669	220	97	58	2948
	20.5	18.7	25.4	22.7	7.5	3.3	2.0	100.0

Source: Handbook of Statistics on Textiles Industry, 2008. Confederation of Indian Textiles Industry (CITI), New Delhi. Ministry of Textile, Ministry of Textiles, Compendium of Textile Statistics, Office of the Textile Commissioner, Mumbai.
Note- The lines below each year indicate percentage to total

These are crucial factors which could explain the variations in fibre-yarn ratio. But the relative changes in price of cotton yarn compared to raw cotton and relative chnages in price of synthetic yarn compared to manmade fibre and relative price of other yarns to fibre are not anaylised so far. The wholesale price index (WPI) of fibre and yarn has been constructed assigning weightage of 0.60 to cotton (fibre and yarn) and 0.40 to manmade (fibre and yarn) on the basis of their respective share during 2006-07 in yarn production. The declining ratio in the beginning is mainly due to rise in price at much higer rate than that of yarn particularly during 1990-91 to 1992-93. During the period after that the increase in prices of yarn is more than the increase in prices of fibres. The ratio of these prices increased from 1 in 1995-96 to 1.14 in 2005-06. The changes in yarn-fibre ratio (in value terms) are quite in alignment with the relative changes in prices of yarn, but one cannot rule out the importance of variations in count composition and fibre composition also.

1.2.5 Output Capital, Output Labour and Capital Intensity ratios

Gross Fixed Asset (GFA) is an important measure of stock of capital covering plant and machinery, computers/IT systems, electrical installations, etc. Gross Fixed Asset (GFA) encompasses intangible assets (e.g. goodwill, software, etc.), land & building, plant and machinery, computers/IT systems, electrical installations, etc., transport and communication equipment, furniture, social amenities and other fixed assets. The other measure is book value of plant and machinery called fixed capital (K). For measuring capital output ratio, the data of 246 firms is availble from provess data base for yarn.

The data on employment is provided by 14 firms in Prowess data base. There are years when the data is availble even for firms less than 14.

The average output per unit of capital (Y/K) in Table 1.7 show decline from 5.0 to 1.28 during 1990-91 to 2006-07. The ratio of Y/GFA and five-yearly incremental ratio of output to gross fixed asset (Y/GFA) also shows a similar declining pattern.

The book value of capital stock, unproductive assets (low capacity utilization), use of more capital intensive technology (capital per labor) and relative change in price of output to capital stock are the factors which could possibly explain the steep decline in output capital ratio. The concept of capacity utilisation has already been discussed in detail earlier and it has been found that over time the capacity utilisation in spining segment has improved. Bedi & Cororation, IFPRI (DP), 2008, indicated that capacity utilization lead to improvement in productivity due to better utilization of modern spindles. The book value of capital stock do not reflect the true value of capital and thus perpetual inventory method should have been better indicator to capture the true value of its stock. But historical data on capital stock is required to estimate capital stock at constant price. Due to absence of such data here, the output capital ratios are taken at current price. The relative changes in WPI for capital stock and

output are examined separetly over time. It has been found that during this period, WPI of textile machinery such as ring spinning & doubling frames, industrial machinery for textile, textile machinery parts, etc increased tremendously. For instance, WPI (base year 1993-94) of ring spinning & doubling frames increased from 114.7 to 237.4, and that of industrial machinery for textile increased from 112.8 to 255.2 between 1995 and 2006. However largest increase has been witnessed in the WPI of textile machinery parts. The increase was from 107 to 577.6 during the same period. But during this period WPI (base year 1993-94) of yarn displayed only modest increase. It increased from 134.4 to 137.9 only.

An attempt is also made separately to estimate ratio of output and capital for incremental changes over time. The incremental output-capital ratio declined from 1.08 in 1998-99 to 0.11 in 2004-05. This means decline by one tenth time, out of which one third is explained by relative changes in output capital prices and remaining could mainly be attributed to increase in capital intensity. This needs to be pointed out that during the period under discussion, Government gradually reduced the custom duty on various items including textiles machinery. However, depreciation of rupee took place at a high rate against major currencies during this period, which lead to rise in imported items.

Table 1.7 Trends in Output Capital, Output Labour and Capital Intensity

Year	Y (Rs Cr.)	GFA (Rs Cr.)	K (Rs Cr.)	L	Y/K (at current prices)	Five yearly Incremental ratio of Y and K#	Y/GFA (at current prices)	Five yearly Incremental ratio of Y and GFA#	Y/L (Rs. Lakh) (at current prices)	ΔY/ΔL (Rs. Lakh)	GFA/L (Rs. Lakh) (at current prices)	ΔGFA/ ΔL (Rs. Lakh)	K/L (Rs. Lakh) (at current prices)	ΔK/Δ L (Rs Lakh
1990-91	42.23	11.16	8.45		5.00		3.78							
1991-92	40.35	13.16	9.69		4.16		3.07							
1992-93	42.56	15.07	11.15		3.82		2.82							
1993-94	45.94	18.19	13.17		3.49		2.53							
1994-95	59.10	22.02	16.17		3.66		2.68							
1995-96	67.57	25.88	19.21		3.52		2.61							
1996-97	68.13	31.05	22.58		3.02		2.19							
1997-98	68.12	34.78	25.52		2.67		1.96							
1998-99	72.52	41.14	30.52		2.38	1.08	1.76	0.81						
1999-00	73.58	44.40	33.16		2.22		1.66							
2000-01	47.06	50.73	38.35		1.23		0.93							
2001-02	70.19	45.49	35.08	2294	2.00		1.54		3.06		1.98		1.53	
2002-03	69.36	45.56	35.48	2100	1.95		1.52		3.30	0.43	2.17	-0.04*	1.69	0.21
2003-04	52.52	60.27	46.44	1783	1.13		0.87		2.95	5.32	3.38	-4.65*	2.60	3.46
2004-05	62.40	64.73	51.01	1947	1.22	0.11	0.96	0.09	3.21	6.04	3.33	2.72	2.62	2.7
2005-06	67.08	70.37	54.73	1886	1.23		0.95		3.56	-7.70*	3.73	-9.29*	2.90	6.12
2006-07	90.18	91.26	70.30	1204	1.28		0.99		7.49	-3.39*	7.58	-3.06*	5.84	2.28

Source: Computed from Prowess (CMIE) database

Note-* Due to decline in employment as compared to previous period.

Firstly, five yearly averages of variables under consideration were taken. Then differences of two consecutive five yearly averages were taken. After that relevant incremental ratios were calculated.

The capital intensity is indicated by GFA/ Labor (L) and K/L. It is estimated that capital intensity is consistently increasing over time. GFA/L has increased from 1.98 lakh per labour in 2001-02 to 7.58 lakh per labour in 2006-07, while K/L has increased from 1.53 lakh per labour in 2001-02 to 5.84 in 2006-07 (Table 1.6). It implies that in recent years spinning sector is getting increasingly mechanized. In other words, the sector is becoming increasingly capital intensive. Here also tremendous increase in WPI of textile machinery over the years has to be kept in mind in analyzing the pattern of capital intensity.

Despite rise in prices of machinery, capital intensity increased and thus employment generation per unit of investment declined. This adversely affected the employment generation in this sector. But technological innovation and modernization appears to be necessary for the competitiveness of the Indian spinning sector. Indian spinning sector is still way behind in terms of capital intensity and modernization of machinery as compared to its European and East-Asian competitors.

1.2.6 Capital stock per Spindle, Output per Labour

Capital stock per spindle has been expressed by two ratios- GFA per spindle and K per spindle, both in value terms represented by Rs thousand in Table 1.8. These ratios have been derived using data for 246 firms. The results in Table 1.8 shows rise in value over time in both these ratios. GFA/spindle increases from Rs. 3.56 thousand per spindle in 1990-91 to Rs.21.68 thousand per spindle in 2006-07. Similarly, K/Spindle increases from Rs. 2.69 thousand per spindle to Rs.16.70 per spindle during the same period. This means the cost of installing new spindles is rising over time. These results support our findings related to rise in capital intensity and improvement in output capital ratio in the spinning sector.

Table 1.8: Capital Stock per Spindle

Year	GFA (Rs Cr.)	K (Rs Cr.)	Spindles (No.)	GFA/Spindles (Rs 000)	K/Spindle (Rs 000)
1990-91	11.16	8.45	31393	3.56	2.69
1991-92	13.16	9.69	30379	4.33	3.19
1992-93	15.07	11.15	28733	5.24	3.88
1993-94	18.19	13.17	28555	6.37	4.61
1994-95	22.02	16.17	28024	7.86	5.77
1995-96	25.88	19.21	27269	9.49	7.04
1996-97	31.05	22.58	29147	10.65	7.75
1997-98	34.78	25.52	32273	10.78	7.91
1998-99	41.14	30.52	33715	12.20	9.05
1999-00	44.40	33.16	33504	13.25	9.90
2000-01	50.73	38.35	33081	15.34	11.59
2001-02	45.49	35.08	31402	14.49	11.17
2002-03	45.56	35.48	34618	13.16	10.25
2003-04	60.27	46.44	36214	16.64	12.82
2004-05	64.73	51.01	37584	17.22	13.57
2005-06	70.37	54.73	38803	18.14	14.10
2006-07	91.26	70.30	42102	21.68	16.70

Source: Computed from Prowess (CMIE) database

Estimates about output labour ratio (Y/L) are derived only for 6 years as relevant employment data is available only for period 2001-02 to 2006-07. Even for this period, data on employment is available for maximum number of 14 firms. The results show that ratio of output labour is improving over time. It has increased from Rs. 3.06 lakh per labour in 2001-02 to Rs.7.49 lakh per labour in 2006-07. The results are similar for incremental output-capital ratio. The earlier findings that capital intensity is improving over time coupled with rising K / Output ratio may explain the rise in output labour ratio.

1.3 Independent Weaving Mills

1.3.1 Capacity Utilization

Under the mill sector, weaving activity is undertaken both in independent weaving mills units and composite mills (spinning, weaving dyeing, processing etc). This section covers weaving mills. Capacity utilization in weaving activity in integrated units is dealt in the next section. For calculation of capacity utilization, data of 38 firms' on production and capacity is used from Prowess database of CMIE. The number of mills analysed for various years however varies between 5 and 17 across the years as complete data for all firms is not available. The prowess data lacks information related to type of loom and thus a simplified assumption is being used to estimate the potential production of average loom. It has been assumed that on an average one single shuttle loom produces around 70 metres and a shuttleless loom produces 216 metres fabrics of average quality of fabrics in a day (per three shifts with 90 per cent machine efficiency). As per ITMF data on shipment of machinery (various years), the share of shuttle loom in organized sector is estimated at 82.91 per cent and share of shuttleless loom is 17.08 per cent. On the basis of this information, the average weighted production of loom in mill sector is estimated at 95 meters a day or approximately 33225 meters in a year (350 working days). The capacity utilization for these mills is derived in Table 1.9 by taking out outliers' values i.e. less than 5 per cent and more than 125 per cent.

Table 1.9: Average Capacity Utilization (%) in Weaving Mills

Year	Capacity Utilization (%) (Calculated)	Capacity Utilization (%) (Textiles Commissioner's Office)
1992-93	50	51
1993-94	60	54
1994-95	60	52
1995-96	63	52
1996-97	57	56
1997-98	64	54
1998-99	64	51
1999-00	60	51
2000-01	60	47
2001-02	52	42
2002-03	51	41
2003-04	55	53
2004-05	66	58
2005-06	70	61
2006-07	61	61

Note-Capacity utilization given by Ministry of Textiles, Office of Textiles Commissioner, Mumbai pertains to weaving activity in mill sector as a whole.

Source: Computed from Prowess (CMIE) database

Handbook of Statistics on Textiles Industry, 2008. CITI, New Delhi.

Data in Table 1.9 show that the average capacity utilization in the weaving mills varies between 50% and 70%. Starting off with 50% in 1992-93, it reaches at peak in 2005-06 at 70 per cent capacity utilization, before starting declining afterwards. The capacity utilization figures from Office of Textiles Commissioner (OTC), Mumbai show variations in the range of 41 to 61%, which are though different from the values derived in table 1.9, but the pattern is similar.

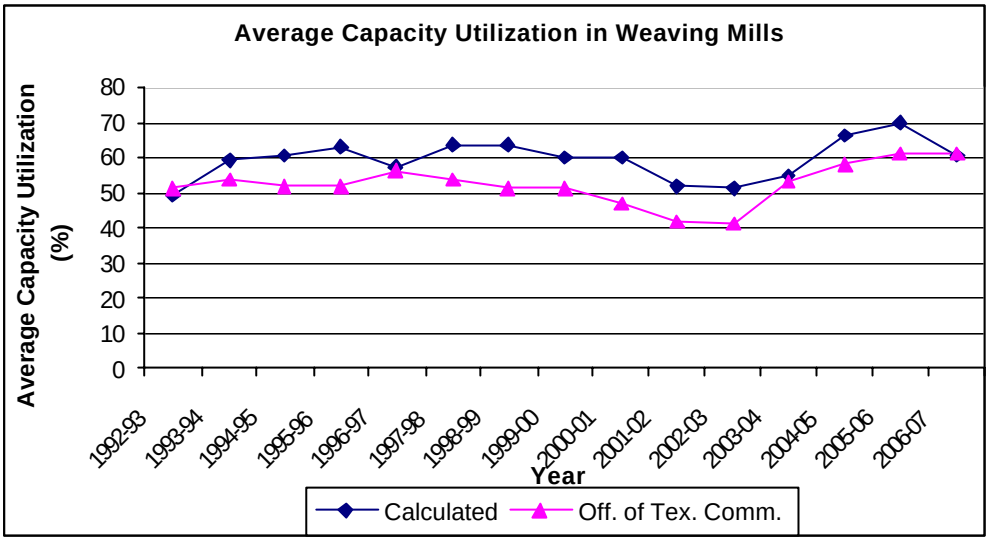


Fig. 1.2

The estimates derived above using prowess data are much different than the estimates derived by using Office of the Textile Commissioner, Mumbai data. It may be due to several reasons. Firstly, because the production per loom is assumed on the basis of average technology and quality of fabrics produced in the country. The information is not availble for units in prowess data base. Secondly, Textile Commissioner data on capacity utilisation include not only weaving mills but also composite mills. The composite mills in that data also include mills of National Textile Corporation (NTC) in which capacity utilization is very low.

The both the results however clearly show that capacity utilization in weaving mills is much below compared to the potential.

1.3.2 Fabric-Yarn Ratio

Fabric-yarn ratio (in value terms) refers to value of fabric made from one rupee of yarn. The data used is of 37 weaving mills from Prowess database, though due to lack of information for various years, the anaylsis was restricted to a fewer mills for most of years. The values of fabrics produced were not available for a few firms but data on quantity of fabrics was available. The average per units' price is derived using other firms' data to estimate the missing values. By using value of fabrics on value of yarn consumed, the fabrics yarn ratio is then derived. The ratios less than 1 and greater than 5 are taken as outliers.

Table 1.10 Average Fabric-Yarn Ratio (in value terms)

Year	Fabric-Yarn Ratio (in value terms) (at current prices)	WPI of Cotton Yarn (1995-96=100)	WPI of Synthetic Yarn (1995-96=100)	WPI of Cotton Grey cloth (1995-96=100)	WPI of Man Made Cloth (1995-96=100)	WPI of Cotton Cloth (1995-96=100)	WPI of Long cloth (1995-96=100)	WPI of Cotton Shirting (1995-96=100)	WPI of cotton cloth / WPI of cotton yarn	WPI of man made cloth / WPI of synthetic yarn
1995-96	1.64	100	100	100	100	100	100	100	1	1
1996-97	1.53	93.18	92.95	101.26	106.16	105.11	101.31	126.39	1.13	1.14
1997-98	1.75	95.84	91.49	105.39	109.19	107.34	102.98	128.97	1.12	1.19
1998-99	2.07	96.73	81.77	105.19	109.28	112.01	102.98	128.97	1.16	1.34
1999-00	2.69	96.45	83.40	105.26	109.54	111.29	102.98	128.97	1.15	1.31
2000-01	2.08	101.98	96.30	105.66	111.36	112.52	103.04	129.81	1.10	1.16
2001-02	2.32	100.82	81.69	108.06	113.70	114.39	104.71	130.19	1.13	1.39
2002-03	2.27	98.77	89.17	108.72	111.88	116.26	105.43	130.19	1.18	1.25
2003-04	2.36	113.51	96.65	114.65	116.65	119.57	111.27	133.08	1.05	1.21
2004-05	2.40	113.92	97.59	122.30	120.64	124.17	118.43	134.75	1.09	1.24
2005-06	2.36	102.32	93.64	120.24	120.03	122.37	108.88	134.75	1.20	1.28
2006-07	2.19	106.68	94.75	120.04	118.13	121.87	110.02	134.75	1.14	1.25

Source: Computed from Prowess (CMIE) database
Office of Economic Adviser, Ministry of Commerce, Government of India

The fabric-yarn ratio (in value terms) was 1.64 in 1995-96, reaches a peak of 2.69 in 1999-00, before declining to 2.19 in 2006-07 (Table 1.10). The trend fitted through observations is presented in figure 1.3 and has a concave shape. In case fabric-yarn ratios (in value terms) are regressed on time (t) and t^2, we find the coefficient t to be positive and that of t^2 to be negative and p-value of both significant. This implies that fabric-yarn ratio (in value terms) increases initially but declines later with a mildly decelerating trend. Still the terminal figure is much higher than what it is in the beginning. This gives the impression that in recent years there is lesser value addition in fabric.

Fig. 1.3

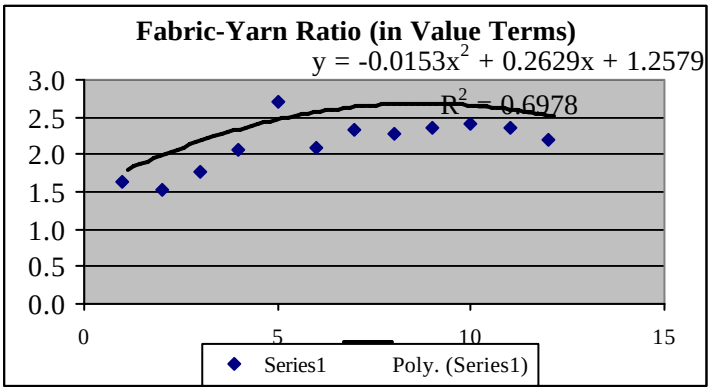


Table 1.11 Regression Estimate on Fabric- yarn Ratio

Regression Statistics	
Multiple R	0.835326
R Square	0.697769
Adjusted R Square	0.630607
Standard Error	0.208573
Observations	12

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1.25792	0.215566	5.835415	0.000248	0.770274	1.745565	0.770274	1.745565
T	0.262912	0.076241	3.448435	0.007293	0.090443	0.435381	0.090443	0.435381
t^2	-0.01527	0.005709	-2.675	0.025414	-0.02819	-0.00236	-0.02819	-0.00236

It is important to point out that these changes may be just because of relative changes in price of fabric-yarn. The analysis of data on Whole sale price index of yarn and fabrics, reveal that relative price of fabric to yarn has risen more during initial years and then the pattern is somewhat reversed in the later years (Table 1.10). The quality of production of fabrics shifted towards coarser and middle count-groups during last few years.

1.3.4 Output Capital Ratio

The GFA and K are related terms and definition for the same is provided in spinning section. The data for 46 firms engaged in weaving is availble in Prowess. The firms producing fabrics and simultaneously engaged in spinning or readymade garments prodtcion are not considered here. The data for these 46 firms is also not availble for all the years on GFA, K and output value. The gaps were filled where ever possible. Eg in cases, where the data on values of fabrics were not availble, data on quantity of fabrics produced is multiplied by average price. The average price is estimated by dividing the value of fabrics with quantity for the units for which data is availble.

Table 1.12 Trends in Output Capital Ratio

Year	Y/GFA (at current prices)	Y/K (at current prices)
1993-94	1.12	1.42
1994-95	1.19	1.69
1995-96	1.52	2.29
1996-97	1.44	1.84
1997-98	1.28	1.62
1998-99	1.28	1.51
1999-00	1.46	1.74
2000-01	1.32	1.56
2001-02	1.23	1.47
2002-03	1.57	1.91
2003-04	0.92	1.10
2004-05	0.99	1.14
2005-06	1.03	1.22
2006-07	0.95	1.22

Source: Computed from Prowess (CMIE) database
Note-* Output of fabric declined as compared to previous period.
**Gross fixed asset and value of capital stock declined as compared to previous period.

The ration Y/GFA ratio is estimated at 1.12 in 1993-94 in Table 1.12, which increases to 1.57 in 2002-03 and then dipped to 0.95 in 2006-07. Y/GFA has declinning, but fluctuating pattern. The moving average of incremental ratio of Y/GFA (over five-year period) increases from 1.44 in 1996-97 to 3.94 in 2000-01 but afterwards declines to 0.59 in 2004-05. Thus, Y/K and moving average of incremental ratio of Y/K have a declinning trend with fluctuating values over time. This means that capital per unit of output has an increasing trend at current prices.

The employment data for these units is not available and thus we can't say with certainty whether capital labour ratio is increasing or not in the weaving sector. A detailed analysis measuring the pattern of change in capital labour ratio along with changes in relative price of weaving machinery (relative to fabrics) is undertaken for the composite mill sector.

1.4 Composite Mill

1.4.1 Capacity Utilization

Composite mills or integrated spinning units are those units where both the spinning and weaving activities are undertaken in the same mill. To study the capacity utilization in these mills we have separately estimated the capacity utilization in spinning and weaving activities. For this purpose data of total 153 composite mills have been obtained from Prowess database of CMIE. But complete data of both spinning and weaving activities of all the composite mills are not available. The data for spinning activity was taken for 123 mills

and for weaving activities 88 firms. The capacity of spinning activity in composite mill is given in terms of number of installed spindles and rotors. The capacity utilization is worked out using analysis similar as in case of spinning mills. Similarly for deriving capacity utilization of weaving activity in composite mills, the analysis is similar as in case of weaving mills.

The analysis in Table 1.13 shows that the average capacity utilization in spinning activity varies between 68 per cent and 93 per cent during 1990-91 to 2006-07. The result shows that there has been massive increase in capacity utilization in spinning activity.

Table 1.13 Average Capacity Utilization(%) in Composite Mills using prowess data

Year	Capacity Utilization(%) in Spinning Activity	Capacity Utilization(%) in Weaving Activity
1990-91	68	71
1991-92	77	62
1992-93	74	66
1993-94	78	73
1994-95	88	67
1995-96	88	68
1996-97	83	65
1997-98	73	60
1998-99	74	58
1999-00	80	56
2000-01	73	62
2001-02	74	56
2002-03	81	62
2003-04	84	71
2004-05	86	67
2005-06	87	65
2006-07	93	60

Source: Computed from Prowess (CMIE) database

1.4.2 Output Capital Ratio, Output Labour Ratio and Capital Labour Ratio

Here, for capital stock and output (of both yarn and fabrics) averages of 153 and 150 firms have been taken respectively. For employment average of only 31 firms has been taken, as for these firms only employment data is available. Here also the number of firms for which data of a particular variable is available may vary across the years.

It can be seen in data in Table 1.14 that both the measures of output capital ratio show declining trend over the period under study. Y/K starting with 3.85 in 1990-91 gradually declined to 1.27 in 2006-07. Y/GFA has a similar trend. Starting off with 3.02 in 1990-91, it declines to 0.81 in 2006-07 with lots of fluctuations during intervening years. But output capital ratio show increasing trend for both the measures for the period 2001-02 to 2004-05, after which it starts declining again.

The decline in capital productivity over the period 1990-91 to 2006-07 could be linked to decline in capacity utilization. But the data on capacity utilization in spinning and weaving activity in composite mills is not supporting it and hence the reason for this decline lies some where else. The modernisation process though lead to installation of costly machines, but the productivity of these machines is also high. The possible explanation for this seem to be the fact that the prices of textile machinery increased much faster compared to both yarn and fabric products during this period. More precisely, relative price of cotton yarn to ring spinning & doubling frames declined from 1.00 in 1995-96 to 0.52 in 2006-07. Similarly, relative price of cotton cloth to industrial machinery for textile increased from 1 to 0.54 during the same period. The relative changes in prices of output and capital thus mainly explain the decline in Y/K from 2.54 to 1.27 during this period. This shows that most of the apparent decline in output capital ratio is attributed to relative increase in prices of plant and machinery. It implies that real rate of investments in composite mill had not taken as fast as it appears in nominal terms.

Table 1.14 Trends in Output Capital, Output Labour and Capital Intensity

Year	Y (Rs Cr.)	GFA (Rs Cr.)	K (Rs Cr.)	L	Y/K (at current prices)	Y/GFA (at current prices)	Y/L (Rs. Lakh) (at current prices)	Y/L (Rs. Lakh) (at constant prices)	GFA/L (Rs. Lakh) (at current prices)	K/L (Rs. Lakh) (at current prices)
1990-91	112.23	37.21	29.11		3.85	3.02				
1991-92	106.22	41.51	31.87		3.33	2.56				
1992-93	103.62	43.64	32.96		3.14	2.37				
1993-94	98.04	45.53	35.39		2.77	2.15				
1994-95	102.07	47.03	37.30		2.74	2.17				
1995-96	121.51	61.63	47.80		2.54	1.97				
1996-97	78.56	66.82	51.95		1.51	1.18				
1997-98	105.28	78.97	59.72		1.76	1.33				
1998-99	98.70	96.83	74.53		1.32	1.02				
1999-00	101.13	87.44	69.44		1.46	1.16				
2000-01	106.22	92.19	72.29		1.47	1.15				
2001-02	83.55	92.88	74.46	6191	1.12	0.90	1.35	0.84	1.50	1.20
2002-03	106.88	94.17	74.36	4540	1.44	1.14	2.35	1.41	2.07	1.64
2003-04	131.26	97.53	78.13	3622	1.68	1.35	3.62	2.06	2.69	2.16
2004-05	170.00	116.91	91.04	2287	1.87	1.45	7.43	3.97	5.11	3.98
2005-06	191.57	152.09	109.93	1762	1.74	1.26	10.87	5.56	8.63	6.24
2006-07	183.94	225.92	144.58	2732	1.27	0.81	6.73	3.27	8.27	5.29

Source: Computed from Prowess (CMIE) database

The analysis has also been undertaken for output labour ratio, but the period of this analysis is confined only to six years due to limitataion of data base. The analysis for variable employment is undertaken for 31 firms and for output for 150 firms. The number of firms for which data of a particular variable is available varies across the years.

The anaylsis show that the ratio of output to labour increases from mere value of Rs 1.35 lakh in 2001-02 to Rs 10.87 lakh in 2005-06, before declining to 6.73 in 2006-07. This may be due to rise in capital intensity. The capital intensity is measured by ratio of GFA/L and K/L. Both the measures of capital intensity have shown an increasing trend except for the last year.

The above analysis highlighted the fact that during the period 2001-02 to 2006-07, the output labour ratio and capital intensity showed rising trend, while output capital ratio first improved and then declined.

1.5 Garments

1.5.1 Capacity Utilization

In order to calculate average capacity utilization in garments sector, the data of 90 readymade garment producing units is availble from Prowess. The data from Capitaline Plus of Capitaline Pvt. Ltd. is also used in order to cross-check the results derived from Prowess data base. The number of firms varies widely across years for which data on variables such as installed capacity and production are available. The cases where average capacity utilization is less than 5 per cent and more than 200 per cent are considered as outliers and are dropped from analysis.

Table 1.15: Average Capacity Utilization(%) in Readymade Garments Units

Year	Capacity Utilization (%)
1994-95	64
1995-96	63
1996-97	65
1997-98	66
1998-99	68
1999-00	67
2000-01	68
2001-02	67
2002-03	67
2003-04	67
2004-05	70
2005-06	67
2006-07	70

Source: Computed from Prowess (CMIE) and Capitaline database

It can be seen from Table 1.15 above that capacity utilization in the garments sector varies from 63 per cent to 70 per cent for the period 1994-95 to 2006-07. Except for some fluctuations during intermediate years, it is showing increasing trend. The capacity utilisation is much below the potential and one of the reasons for the same is seasonal nature of the industry. The capacity utilization needs to be improved to bring improvement in the sector.

1.5.2 Output-Capital, Output-Labour, Capital Intensity and Wages per Employee Ratios

Capital stock is measured by using two alternate approaches- Gross Fixed Asset (GFA) and aggregate of plant and machinery, electrical appliances, etc i.e. capital Stock (K). Data for 193 firms is available for capital stock, 182 firms for output, 34 firms for employment, but number varies for various years.

Average output capital ratio is estimated by - Y/K and Y/GFA. The data in Table 1.16 show that both the ratios show increasing trend from 1996-97 to 2006-07, but fluctuating pattern. The value of output per unit of capital for year 2005-06 is far higher compared to 1990-91 indicating much higher production per unit value of capital at current prices. The coefficient of variation of both Y/K and Y/GFA is almost same over the period 1990-91 to 2006-07.

Table 1.16: Trends in Output Capital, Output Labour and Salaries per Employee

Year	Capital (K Rs. Cr.) per firm (At current Prices)	Y/K (at current prices)	Y/GFA (at current prices)	Employment per unit (L) (in no.)	Y/L (Rs. Lakh) (at current prices)	GFA/L (Rs. Lakh)(at current prices)	K/L (Rs. Lakh) (at current prices)	ΔK/ΔL (Rs Lakh)	W/L (Rs. 000) (at Current prices)
1990-91	29.89	0.18	0.14						
1991-92	33.44	0.18	0.14						
1992-93	36.13	0.16	0.12						
1993-94	38.18	0.19	0.15						
1994-95	37.89	0.18	0.13						
1995-96	47.00	0.22	0.15						
1996-97	58.23	0.17	0.12						
1997-98	60.63	0.30	0.19						
1998-99	58.64	0.34	0.21						
1999-00	65.32	0.31	0.22						
2000-01	54.44	0.41	0.30						
2001-02	69.03	0.30	0.21	1918	1.08	5.16	3.60		32.89
2002-03	69.13	0.35	0.25	1928	1.25	5.07	3.59	1.07	35.41
2003-04	71.96	0.46	0.33	2469	1.34	4.11	2.91	0.52	31.26
2004-05	84.28	0.48	0.34	2662	1.53	4.56	3.17	6.40	35.75
2005-06	113.80	0.57	0.38	3452	1.87	4.90	3.30	3.73	36.05
2006-07	161.63	0.46	0.29	4195	1.76	6.05	3.85	6.44	42.98

Source: Computed from Prowess (CMIE) database

The average output per unit of labour (Y/L) is estimated only for six years as data on employment is available only for this limited period. The number of firms on the basis of which average value of output per unit is derived differs widely from average number of employees engaged per unit. The method is similar to the one adopted in case of other ratios and segments. The average output per labour show rising pattern at current prices (Table 1.16). The output per labour however show decline during 2006-07 and is

attributed to proportionate rise in employment, which is mainly casued by hiring more unskilled labourer at due to shortage of skilled labour at the time of higher demand.

For example, Celebrity Fashions Ltd. employed 4694 labourers in 2005-06 and 10895 in 2006-07. Gokaldas Exports Ltd. employed 35234 workers during 2004-05 and 42979 2005-06. Employment in Nahar Industrial Enterprises Ltd. increased from 3589 in 2001-02 to 8979 in 2006-07. Employment in R S W M Ltd increased from 6203 in 2002-03 to 12261 in 2006-07. Sutlej Textiles & Inds. Ltd. employed 9298 in 2005-06 and 10201 labourers in 2006-07. Employment in Zodiac Clothing Co. Ltd. increased from 1497 in 2001-02 to 3076 in 2005-06. Though, employment and output both grew at a fast rate, the latter lagged behind the former particularly since 2002-03. The rise in demand also leads to increase in capacity utilization during the corresponding period.

Capital intensity is estimated by two measures- GFA/L and K/L and both showing rising patter. The rise in capital intensity, coupled with rise in capacity utilisation indicate the fact that modernisation is taking plcae in the sector, which is ensuring rise in output to capital stock ratio.

The ratio W/L refers to gross salary per employee. W denotes average annual compensation to employees per firm and L indicates number of employees per firm. At current prices, this ratio is showing rising pattern, but rise is much lower at constant prices.

Sum Up

The analysis clearly brings out that in all the stages of production, the efficiency parameters have improved in mill sector. But, the share of mill sector in various stages of textile and clothing production is very small except in spinning segment. The next chapter therefore studies the state of textile and clothing industry in India with special emphasis on marginal and small scale sector.

Chapter 2: State of Overall Textiles and Clothing Industry in India

In Chapter 1, we have analysed the state of textiles and clothing industry in mill sector. Mill sector units mainly belong to large and medium size segment and are part of factory sector. The factory sector or organized sector is termed as units which employ 10 or more workers with the aid of power and 20 or more workers without the aid of power. The operational units mean those working on any day proceeding 12 months. The non-factory sector units are not covered in the analysis undertaken in Chapter 1. The factory sector and non-factory sector combined together represent the entire universe of manufacturing sector (Bedi and Banerjee, 2007[1])

The focus of this chapter is to analyse the overall textile and clothing industry with special emphasis on non-factory sector units or unorganized sector i.e. marginal and small scale segment. The marginal and small sector units as defined in this study belong to non-factory sector, which can further be divided into Own Account Manufacturing Enterprise (OAME), Non-Directory Manufacturing Establishment (NDME) and Directory Manufacturing Establishment (DME). OAME is termed as manufacturing enterprise run without any hired worker employed on a fairly regular basis. A manufacturing establishment employing less than six workers (household and hired workers taken together) is termed as NDME. A manufacturing establishment employing six or more workers (household and hired workers taken together) is termed as DME. The maximum number of workers employed in DME units is 9 with power and 19 without use of power.

The analysis in this chapter covers various stages of the value chain of textiles such as spinning, weaving and garments.

2.1 Spinning Sector (with special emphasis to units belonging to the Unorganized Sector)

Most of production of yarn originates from large spinning mills. There were around 4028 spinning units belonging to factory sector in the country during 2000-01. The factory sector units increased at a rapid rate during the period 2000-01 to 2005-06.

Apart from these large units, there exist around 38467 spinning units in the country belonging to NSSO data on unorganised manufacturing sector (non-factory sector) during 2005-06. Most of these units numbering 25136 were own account manufacturing enterprises (OAME).

The non-factory sector registered steep decline in the number of units during the five year period 2000-01 to 2005-06 due to stiff competition from large scale sector. During 2000-01, there were 1.5

[1] Bedi, Jatinder S. and Banerjee, Purnendu K., "Discrepancies and Validation of data of Various Segments of Indian Manufacturing Sector: Factory Sector & Non-Factory Sector and Small, Medium & Large Scale Manufacturing Sector." *Economic and Political Weekly*, March, 2007.

lakh units belonging to unorganised manufacturing sector, out of which 78.5 thousand were belonging to cotton spinning, 26 thousand to silk, 39.5 thousand to wool and 6.5 thousand to man-made spinning sector during 2000-01.

During 2005-06, there were around 11670 cotton and synthetic spinning sector belonging to non-factory sector; most of these were of charka type (8900) called own account manufacturing enterprises (OAME) (Table 2.1). These households were doing charka as part time activity. There were 1946 units operating with employees in the range of 1-5 workers called Non Directory Manufacturing Enterprises (NDME) units. Directory Manufacturing Enterprises (DME) accounts for only 824 units. The situation in case of wool spinning units belonging to non-factory sector is though similar, but is more critical. In the man made segment, out of total 3069 units belong to non-factory sector, the charkha type of units are few, but most of units fall under NDME category. Silk units belonging to OAME and NDME category are better in terms of their per unit GVA, but the GVA per unit in case of DME units is less than half compared to units belonging to cotton segment on an average.

Table 2.1: Non-factory Sector Spinning Units during 2005-06

NIC-2004	Units	OAME	NDME	DME	Total
17111	Preparation and spinning of cotton fiber including blended* cotton (please note: ginning/pressing, baling activities are included in Class 0140).	8900	1946	824	11670
17112	Preparation and spinning of silk fiber including blended* silk.	9738	653	7684	18075
17113	Preparation and spinning of wool, including other animal hair and blended* wool including other animal hair.	5599	30	24	5653
17114	Preparation and spinning of man-made fiber including blended* man-made fiber.	899	2170	0	3069
	Total	25136	4799	8532	38467
	Employees				
17111	Preparation and spinning of cotton fiber including blended* cotton (please note: ginning/pressing, baling activities are included in Class 0140).	12963	6592	10494	30049
17112	Preparation and spinning of silk fiber including blended* silk.	18462	2776	76297	97535
17113	Preparation and spinning of wool, including other animal hair and blended* wool including other animal hair.	9875	60	352	10287
17114	Preparation and spinning of man-made fiber including blended* man-made fiber.	1789	10850	0	12639
	Total	43089	20278	87143	150510

Source: NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June.

Most of smaller units are operating for short duration and in fact very small charkha type of units operate only part time during short span of season. The total employment generation in OAME type of units is around 43000. Non-factory sector accounts for 16 per cent of the total employment generation in spinning sector.

The analysis in Table 2.1 is undertaken on the basis of NSSO, 62nd round data and the units are classified as OAME, NDME and DME categories as per listing by NSSO. It is however

observed during the analysis that several units were wrongly classified and thus revision as per the definition was essential and is undertaken in Table 2.2. The units which should not have been part of non-factory sector, but are listed in NSSO data are classified as ASI units. There are only around 10 thousand units in non-factory sector, which are doing spinning activity and are running with the aid of power (26.2 per cent). This means several charkha type units are included in non-factory sector.

Table 2.2: Estimated No. of Units Belonging to Spinning Sector based on NSSO data on Unogranised manufacturing Sector : Total and Those Using Electricity to the Extent of More Than 1 Percent Share in Their Output

NIC-2004	Total Number of Estimated Units running with the aid of power					Total Number of Estimated Units running with the aid of power (Expenditure on Power less than or equal to 1 % share of their Output)				
	OAME	NDME	DME	ASI	Total	OAME	NDME	DME	ASI	Total
17111	9874	972	575	249	11670	4434	26	457	247	5164
17112	13061	323	3744	947	18075	293	0	300	372	965
17113	5600	30	5	18	5653	1752	0	3	18	1773
17114	899	2170	0	0	3069	0	2170	0	0	2170
Spinning Units	29434	3495	4324	1214	38467	6479	2196	760	637	10072

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June.

The total value of output produced in the spinning activity in both the non-factory and factory sector is estimated at Rs 78916 crore during 2005-06, which is anticipated to be Rs 110871 crore during 2008-09.

Apart from charkha type of units as reported in Table 2.1 & Table 2.2, lots of other spinning activity undertaken on charkha is left out. There were 66.7 thousand units running on charkha during 2005-06, out of which only 18418 were operating on power i.e. units for which expenses on power accounts for more than 1 per cent of their output value. The value of output produced by these units operating on charkha is estimated at Rs. 472 crore during 2005-06.

Table 2.3: Estimated No. of Units Operating on Charkha based on NSSO Unorganized manufacturing data

NIC 2004	Specification	OAME	NDME	DME	ASI	Total
17131	Cotton spinning through charkha	31792	493	75	0	32360
17134	Spinning of wool and silk through charkha	33801	324	197	0	34322
	Total above	65593	817	272	0	66682

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June.

2.2 Units producing mainly fabrics (with Special Emphasis on Unorganized Sector)

There exist 8.97 lakh units mainly doing weaving activity as per the NSSO, 62nd round data on unorganized manufacturing sector, out of which 3.55 lakh were running on power. This means 60.5 per cent of units were running without the aid of power and can be identified as handloom units. Some of units in Table 2.4 are integrated units involved in spinning, weaving and dyeing activity as well. The specifications of the industries in weaving activity are listed in Table 2.4.

Table 2.4
Number of units belonging to Weaving Activity in the Non-Factory Sector

	Total Number of Estimated Units					% share of Units running without the aid of Electricity (Expenditure on Power less than or equal to 1 % share of their Output)				
NIC-2004	OAME	NDME	DME	ASI	Total	OAME	NDME	DME	ASI	Total
17115	117497	31531	18655	12770	180453	53.3	12.4	12.9	10.8	38.9
17116	122167	51702	9400	3993	187262	52.9	43.2	57.4	31.4	50.0
17117	12628	112	1	11	12752	95.1	100.0	0.0	0.0	95.1
17118	22383	9251	8680	3421	43735	44.6	5.9	2.2	0.8	24.6
17119	60222	10744	822	734	72522	92.9	84.2	60.0	0.3	90.3
17132	4126	191	9	0	4326	64.9	60.7	100.0	---	64.8
17133	248983	7795	4094	2740	263612	73.4	93.0	90.6	94.4	74.5
17135	10483	130	11	95	10719	86.1	0.0	100.0	0.0	84.3
17136	62306	8288	4584	1959	77137	49.8	58.0	42.2	100.0	51.5
17137	3560	2194	0	1006	6760	83.8	88.0	---	93.2	86.6
17139	36974	505	91	237	37807	97.1	46.5	61.5	100.0	96.4
Weaving Units	701329	122443	46347	26966	897085	67.0	41.0	30.7	31.1	60.5

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June.

The total value of output produced in weaving segment account for Rs 32134 crore, which include both factory sector and non-factory sector production during 2005-06 (Table 2.5). The anticipated prodocution during 2008-09 is 39950 crore. The share of non-factory sector in this accounts for 17.9 per cent during 2005-06.

Table 2.5
Estimated Value of Output of Fabrics Produced in Factory and Non-Factory Sector

NIC 2004	Industry Specification	Non-Factory sector	Factory sector	Total
17115	Weaving, manufacture of cotton and cotton mixture fabrics.	2204	9276	11479
17116	Weaving, manufacture of silk and silk mixture fabrics.	1045	9271	10316
17117	Weaving, manufacture of wool and wool mixture fabrics.	41	112	153
17118	Weaving, manufacturing of man-made fiber and man-made mixture fabrics.	1256	4757	6013
17119	Preparation, spinning and weaving of jute, mesta and other natural fibers including blended natural fibers n.e.c.	172	429	602
17132	Weaving of cotton khadi	5	12	16
17133	Weaving of cotton textiles on handlooms	600	1440	2040
17135	Weaving of woollen and silk khadi	12	28	39
17136	Weaving of wool and silk on handlooms	393	944	1337
17137	Weaving of artificial/synthetic textile fabrics on handlooms	21	50	71
17139	Preparation and spinning of textile fibre including weaving of textiles (khadi/handloom), n.e.c.	20	48	68
	Total Above	5767	26367	32134

Note: The estimates of output are based on several assumptions at aggregate level in the absence of unit-wise ASI data and problem in output data for the NSSO 62nd round on unorganized manufacturing sector. National Accounts Statistics (NAS), CSO makes corrections for underreporting of data in both factory and non-factory sector and publish aggregate value of output for all NIC classifications. These corrections for NIC17 & 18 are taken into account and values at each NIC are adjusted. In certain cases, it may be leading to certain overestimations/underestimations which need to be kept in mind while doing the analysis.

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June and estimates of factory sector for year 2005-06 using results from 2000-01 and 2004-05 ASI data and adjusting with Value of output for organized sector and unorganized sector from NAS, CSO.

2.3 Made-ups

The number of units producing made up in the unorganized sector are estimated at 1.68 lakh. The share of handloom units is 83.7 of total units. However in case of certain made-up products such as manufacture of curtains, bed covers, crocheted made-ups etc, the most of units are running on power.

Table 2.6
Number of units Producing Made-ups based on NSSO 62nd round data on Unorganized Manufacturing Sector

NIC-2004	Total Number of Estimated Units					% share of Units running without the aid of Electricity (Expenditure on Power less than or equal to 1 % share of their Output)				
	OAME	NDME	DME	ASI	Total	OAME	NDME	DME	ASI	Total
17211	8037	1905	333	91	10366	22.2	36.4	35.4	2.2	25.1
17212	0	652	59	56	767	----	5.1	100.0	0.0	12.0
17221	3959	144	10	12	4125	62.1	81.3	0.0	0.0	62.5
17225	49600	197	1563	280	51640	96.4	100.0	51.2	92.9	95.0
17251	5106	0	97	98	5301	95.8	--	10.3	1.0	92.5
17252	8139	3824	306	438	12707	88.2	92.4	100.0	100.0	90.2
17253	19317	2669	303	118	22407	97.1	93.0	100.0	100.0	96.7
17254	1326	27	89	8	1450	95.7	29.6	100.0	100.0	94.8
17255	9519	1733	1983	0	13235	30.4	100.0	100.0	--	50.0
17259	40254	4168	1325	0	45747	85.8	99.7	100.0	--	87.4
Made-up Units	145257	15319	6068	1101	167745	83.7	84.6	82.3	75.1	83.7

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June.

The total value of output produced in made-ups units both in factory and non-factory sector is estimated at Rs. 2298 crore, which is anticipated to increase to Rs. 3229 crore during 2008-09 (Table 2.7).

Table 2.7
Value of Output of Units Producing Made-ups in Factory and Non-Factory Sector

NIC 2004	Industry Specification	Non-Factory sector	Factory sector	Total
17211	Manufacture of curtains, bed-covers and furnishings.	334	0	334
17212	Manufacture of crocheted made up textile goods, except apparel	115	0	115
17221	Manufacture of blankets shawls	30	189	220
17225	Manufacture of durries, druggets and rugs	466	0	466
17251	Manufacture of blankets and shawls by hand	124	297	420
17252	Manufacture of cotton carpets by hand	53	126	179
17253	Manufacture of woollen carpets by hand	26	63	89
17254	Manufacture of silk carpets by hand	5	12	16
17255	Manufacture of durries, druggets and rugs by hand	30	73	103
17259	Manufacture of blankets, shawls, carpets, rugs and other similar textile products by hand, n.e.c.	104	251	355
	Made-ups	1287	1011	2298

Note: The estimates of output are based on several assumptions at aggregate level in the absence of unit-wise ASI data and problem in output data for the NSSO 62nd round on unorganized manufacturing sector. National Accounts Statistics (NAS), CSO makes corrections for underreporting of data in both factory and non-factory sector and publish aggregate value of output for all NIC classifications. These corrections for NIC17 & 18 are

taken into account and values at each NIC are adjusted. In certain cases, it may be leading to certain overestimations/underestimations which need to be kept in mind while doing the analysis.

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June and estimates of factory sector for year 2005-06 using results from 2000-01 and 2004-05 ASI data and adjusting with Value of output for organized sector and unorganized sector from NAS, CSO.

Table 2.8
Number of units Producing Made -ups Based on NSSO 62nd round data on Unorganized Manufacturing Sector

NIC-2004	Total Number of Estimated Units					% share of Units running without the aid of Electricity (Expenditure on Power less than or equal to 1 % share of their Output)				
	OAME	NDME	DME	ASI	Total	OAME	NDME	DME	ASI	Total
17121	23121	4807	3098	2844	33870	62.6	37.1	37.4	26.0	53.6
17122	92	0	123	192	407	100.0	--	0.8	0.0	22.9
17123	6830	125	139	0	7094	100.0	31.2	0.0	--	96.8
17124	1170	520	1616	0	3306	68.3	0.0	0.2	--	24.3
17125	70	0	0	0	70	100.0	--	--	--	100.0
17126	226	210	178	1	615	0.0	--	--	100.0	34.3
17141	16894	1258	2543	1937	22632	83.6	50.6	19.3	11.2	68.3
17142	1217	75	959	486	2737	53.7	0.0	21.4	0.0	31.3
17143	10	0	0	0	10	0.0	--	--	--	0.0
17144	2342	1326	173	1	3842	19.0	77.0	35.3	0.0	39.8
17145	1773	406	161	2	2342	66.0	0.0	9.9	100.0	50.7
17149	3072	79	3	411	3565	64.8	0.0	0.0	32.1	59.6
	56817	8806	8993	5874	80490	71.5	41.9	21.5	18.6	58.8

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June.

2.4 Processing Activity

Processing is another important activity in which more than 80 thousand units are involved in the non-factory sector. Most of these units are OAME type. Large numbers of such units (58.8 %) are working without the aid of power. This shows the condition of processing units in India.

The total value of output produced by processing units is estimated at 11494 crore during 2005-06, including both factory sector and non-factory sector units. The anticipated value of output for year 2008-09 is Rs 16148 crore (Table 2.9).

Table 2.9
Value of Output of Units undertaking Processing Activity both in Factory and Non-Factory Sector

NIC 2004	Industry Specification	Non-Factory sector	Factory sector	Total
17121	Finishing of cotton and blended cotton textiles.	1870	5684	7553
17122	Finishing of silk and blended silk textiles.	12	46	58
17123	Finishing of wool and blended wool textiles.	17	53	70
17124	Finishing of man-made and blended man-made textiles.	82	202	285
17125	Finishing of jute, mesta and other vegetable textiles fabrics.	0	0	0
17126	Activity related to screen printing	62	0	62
17141	Bleaching, dyeing and finishing of cotton cloth and yarn by hand	332	797	1129
17142	Printing of cloth by hand	515	1238	1753
17143	Bleaching, dyeing and finishing of woolen textiles by hand	0	0	0
17144	Bleaching, dyeing, printing and finishing of silk textiles by hand	31	74	105
17145	Bleaching, dyeing, printing and finishing of artificial/synthetic textile fabrics by hand	122	292	414
17149	Finishing of textiles (khadi/handloom), n.e.c.	19	45	64
		3062	8433	11494

Note: The estimates of output are based on several assumptions at aggregate level in the absence of unit-wise ASI data and problem in output data for the NSSO 62nd round on unorganized manufacturing sector. NAS, CSO makes corrections for underreporting of data in both factory and non-factory sector and publish aggregate value of output for all NIC classifications. These corrections for NIC17 & 18 are taken into account and values at each NIC are adjusted. In certain cases, it may be leading to certain overestimations/underestimations need to be kept in mind while doing the analysis.

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June and estimates of factory sector for year 2005-06 using results from 2000-01 and 2004-05 ASI data and adjusting with Value of output for organized sector and unorganized sector from NAS, CSO.

2.5 Knitted and Crocheted Products

The number of units involved in knitting and crocheting activity is estimated at 23362, which include 13827 OAME units. A significant proportion i.e. 40.9 per cent of knitting and crocheting units are running without the aid of power.

Table 2.10: Estimated No. of Units doing Knitting and Crocheting Activity

NIC-2004	Total Number of Estimated Units					% share of Units running without the aid of Electricity (Expenditure on Power less than or equal to 1 % share of their Output)				
	OAME	NDME	DME	ASI	Total	OAME	NDME	DME	ASI	Total
17301	8636	172	1103	3554	13465	55.1	49.4	20.3	7.1	39.5
17302	3540	1015	1631	87	6273	65.1	8.3	7.5	1.1	40.0
17303	511	474	73	416	1474	61.1	4.0	1.4	12.0	25.9
17309	1140	8	2	0	1150	83.0	0.0	0.0	--	82.3
	13827	1669	2809	4057	22362	60.2	11.3	12.4	7.5	40.9

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June.

The output in knitted and crocheted products is estimated at Rs 3273 crore during 2005-06.

Table 2.11

Value of Output of Units undertaking Knitting and Crocheting Activity both in Factory and Non-Factory Sector

NIC 2004	Industry Specification	Non-Factory sector	Factory sector	Total
17301	Manufacture of knitted and crocheted cotton textile products	544	1448	1991
17302	Manufacture of knitted and crocheted woolen textile products	199	621	820
17303	Manufacture of knitted and crocheted synthetic textile products	51	154	204
17309	Manufacture of knitted and crocheted textile products n.e.c.	73	184	257
		866	2407	3273

Note: The estimates of output are based on several assumptions at aggregate level in the absence of unit-wise ASI data and problem in output data for the NSSO 62nd round on unorganized manufacturing sector. NAS, CSO makes corrections for underreporting of data in both factory and non-factory sector and publish aggregate value of output for all NIC classifications. These corrections for NIC17 & 18 are taken into account and values at each NIC are adjusted. In certain cases, it may be leading to certain overestimations/underestimations need to be kept in mind while doing the analysis.

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June and estimates of factory sector for year 2005-06 using results from 2000-01 and 2004-05 ASI data and adjusting with Value of output for organized sector and unorganized sector from NAS, CSO.

2.6 Technical Textile

The total numbers of technical textiles units in non-factory sector are estimated at 3.79 lakh, which include 3.51 OAME units. The total numbers of technical units running with the aid of power are only 58094. The total technical textiles value of output is estimated at Rs 35403 crore during 2005-06. A separate chapter in this study is devoted to technical textiles.

2.7 Embroidery Work

Embroidery work is undertaken by a large number of units. The total numbers of units in the non-factory sector in this segment are estimated at 9.16 lakh and most of these run without the aid of power (70.8 per cent) (Table 2.12). This activity is mainly carried by OAME units. The total turnover of such units is estimated at Rs 11410 crore during 2005-06 and for year 2008-09 is anticipated at Rs 16031 crore.

Table 2.12: Estimated No. of Units doing Embroidery Activity										
NIC-2004	Total Number of Estimated Units					% share of Units running without the aid of Electricity (Expenditure on Power less than or equal to 1 % share of their Output)				
	OAME	NDME	DME	ASI	Total	OAME	NDME	DME	ASI	Total
17241	430211	5928	4027	526	440692	78.5	35.7	50.6	77.9	77.6
17242	241541	18397	7279	1283	268500	68.3	62.5	39.5	65.0	67.1
17249	57526	197	192	130	58045	83.4	16.2	0.0	0.0	82.7
17291	53656	11002	3181	1873	69712	39.7	9.1	13.7	20.9	33.2
17292	69196	4899	2162	554	76811	77.4	14.5	16.3	0.0	71.1
18204	1577	929	0	18	2524	12.6	0.0	-	100.0	8.6
	853707	41352	16841	4384	916284	73.3	37.1	33.9	37.7	70.8
Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June.										

2.8 Manufacture of Wearing Apparel

The production of wearing apparel is one the most important activity. The total numbers of units involved in this activity are estimated at 17.55 lakh. Significant percentages (45.2 per cent) of such units are running without the aid of power. OAME units account for 14.68 lakh and the share of units running without power among OAME units is 48.6 per cent (Table 2.13).

Table 2.13: Estimated No. of Units Producing Wearing Apparel

NIC-2004	Total Number of Estimated Units					% share of Units running without the aid of Electricity (Expenditure on Power less than or equal to 1 % share of their Output)				
	OAME	NDME	DME	ASI	Total	OAME	NDME	DME	ASI	Total
18101	90845	17063	13734	7998	129640	51.6	35.2	14.5	11.7	45.8
18105	1363302	222846	12450	1576	1600174	48.4	16.2	21.7	11.3	45.3
18109	13780	6910	4116	403	25209	45.0	13.4	32.3	47.2	36.7
	1467927	246819	30300	9977	1755023	48.6	17.8	20.4	14.0	45.2
Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June.										

The turnover of wearing apparel units for both factory and non-factory sector units is estimated at Rs 65060 crore during 2005-06 (Table 2.14).

Table 2.14: Value of Output of Units undertaking Wearing Apparel Activity both in Factory and Non-Factory Sector				
NIC 2004	Industry Specification	Non-Factory sector	Factory sector	Total
18101	Manufacture of all types of textile garments and clothing accessories	19191	27940	47131
18105	Custom Tailoring	6492	7717	14209
18109	Manufacture of wearing apparel n.e.c.	1699	2020	3719
		27382	37677	65060

Note: The estimates of output are based on several assumptions at aggregate level in the absence of unit-wise ASI data and problem in output data for the NSSO 62nd round on unorganized manufacturing sector. NAS, CSO makes corrections for underreporting of data in both factory and non-factory sector and publish aggregate value of output for all NIC classifications. These corrections for NIC17 & 18 are taken into account and values at each NIC are adjusted. In certain cases, it may be leading to certain overestimations/underestimations which needs to be kept in mind while doing the analysis.

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June and estimates of factory sector for year 2005-06 using results from 2000-01 and 2004-05 ASI data and adjusting with Value of output for organized sector and unorganized sector from NAS, CSO.

It is anticipated that wearing apperal production during 2008-09 is estimated at Rs. 91404 crore.

2.9 Overall Textiles and Clothing industry

The total value of output for both factory and non-factory sector is estimated at Rs 240459 crore during 2005-06, which increased to 279503 crore during 2007-08. The share of factory sector in it is estimated at Rs. 196466 crore i.e. 70.1 per cent during 2007-08. Bedi & Cororation, IFPRI (DP), 2008, estimated value of output for cotton and synthetic products at Rs 129410 crore as against Rs 168582 crore estimates in Table 2.15 during 2005-06. The reason for this difference is that Bedi & Cororation, IFPRI (DP), 2008 analysis is confined only to cotton and synthetic products, while NAS estimates are for total textiles and clothing industry. Bedi & Cororation, IFPRI (DP), 2008, also avoided double counting by excluding intermediate values of output, while double counting is taking place in Table 2.15 data. This is one of the main limitation of the output analysis based on unit-wise ASI and NSSO unorganized manufacturing sector data.

The value added is a much better indicator in cases where double counting in output estimates cannot be avoided. NAS estimated value added share in output at 26.7 per cent of the output value i.e. Rs. 74492 crore during 2007-08. Bedi & Cororation, IFPRI (DP), 2008, estimated value added for cotton and synthetic products at Rs 53130 crore during 2005-06 as against NAS estimates of Rs. 64331 crore during the same year. The share of value added in output of factory sector is much lower compared to non-factory sector. This is true for all the industries specified in Table 2.15 and share for factory sector at aggeragte level is 18.7 per cent as against share of 45.4 per cent for non-factory sector. The value of output in spinning, weaving and finishing accounts for Rs 205603 crore. The

share of value addition in it is estimated at Rs 48120 i.e. 23.4 per cent of the value of output. For weaving apparel value added share in output is 39 per cent.

Table 2.15
Value of Output and Value Added in NIC 17 & 18 Industry Classifications during 2005-06 and 2007-08

	2005-06				2007-08			
	171+172+173	181-18105	182+19	17 &18	171+172+173	181-18105	182+19	17 &18
Industry Specification	Spinning, Weaving and Finishing	Wearing Apparel	Leather & Fur	Total	Spinning, Weaving and Finishing	Wearing Apparel	Leather & Fur	Total
Factory sector Output	130894	27554	10134	168582	153989	31233	11244	196466
% Share of VA in Output	17.7	24.3	18.5	18.8	17.6	24.3	18.5	18.7
Factory sector VA	23109	6688	1879	31676	27168	7581	2085	36834
Non-Factory sector Output	43903	16081	11893	71877	51614	18228	13195	83037
% Share of VA in Output	40.6	64.2	37.9	45.4	40.6	64.2	37.9	45.4
Non-Factory sector VA	17822	10329	4504	32655	20952	11709	4997	37658
Total Output	174797	43635	22027	240459	205603	49461	24439	279503
% Share of VA in Output	23.4	39	29	26.8	23.4	39.0	29.0	26.7
Total VA	40931	17017	6383	64331	48120	19290	7082	74492
Factory Sector % share in Output	74.9	63.1	46	70.1	74.9	63.1	46.0	70.3
Factory Sector % share in VA	56.5	39.3	29.4	49.2	56.5	39.3	29.4	49.4
NAS, CSO.								

The number of employees estimated from the NSSO data on factory and non-factory sector are 12.58 million. This includes all fibres. The NIC industry wise estimates of employment for textiles and clothing are also given in Table 2.16. For cotton and synthetic products, Bedi & Cororation, IFPRI (DP), 2008, estimated number of employees at 10.59 million.

Table 2.16
Estimated Number of Employees Working in Various Textiles and Clothing Units in Non-Factory Sector

	Total Number of Employees in NIC 17 & 18 Industry Classification							% share of Employees Working in Units running without the aid of Electricity (Expenditure on Power less than or equal to 1 % share of their Output)				
NIC-2004	OAME	NDME	DME	ASI	TOTAL NSSO	ASI	TOTAL	OAME	NDME	DME	ASI in NSOO	Total NSOO
1711	850219	427998	306948	318384	1903549	840830	2744379	46.4	68.7	67.6	81.6	60.7
1712	54603	22022	36270	34174	147069	187215	334284	36.7	64.5	74.7	77.7	37.8
1713	796128	73165	65924	76006	1011223	1920	1013143	30.4	28.9	36.9	5.9	25.5
1714	56489	13972	26925	37894	135280	3218	138498	41.0	46.5	79.5	89.2	35.6
1720	70	0	0	0	70		70	0.0	--	--	--	0.0
1721	143012	26549	7861	7304	184726	42145	226871	35.1	59.8	46.7	71.3	26.0
1722	326484	26991	17788	18628	389891	26422	416313	9.9	13.5	34.7	19.5	9.0
1723	282297	9396	15275	21745	328713	31787	360500	9.1	19.1	33.6	48.1	9.6
1724	1208925	88869	82760	29402	1409956	1205	1411161	24.9	45.1	53.3	38.4	27.1
1725	186685	45304	34854	29722	296565	190	296755	10.4	3.8	1.5	5.6	5.8
1729	225133	60429	46567	54635	386764	28003	414767	37.4	86.8	82.5	89.1	44.0
1730	18074	5760	19558	73055	116447	174072	290519	38.9	89.8	86.2	95.2	53.1
1801	3600225	878532	266271	165816	4910844	0	4910844	52.5	81.6	79.2	84.5	58.9
1813	1281	0	0	0	1281	0	1281	0.0	--	--	--	0.0
1818	0	38	0	0	38	0	38	--	100.0	--	--	0.2
1820	8449	2920	2547	4660	18576	1617	20193	49.6	98.4	95.2	0.0	7.4
Total	7758074	1681945	929548	871425	11240992	1338624	12579616	39.9	69.9	65.5	70.6	43.8

Source: Derived using NSSO, unorganized manufacturing sector, 62nd round, 2005-06, July-June and ASI data for factory sector, 2005-06.

The estimates of employment derived using NSSO 61st round employment unemployment data for year 2004-05 are much higher at 16.98 million (Table 2.17) compared to estimates derived using ASI data on factory sector & NSSO data on unorganised manufacturing sector for year 2005-06 in Table 2.16. Apart from employment in textiles and clothing sector, 1.84 million employees are involved in silk worm and ginning activity (Table 2.17).

Table 2.17
Employment based on Data from NSSO 61ST round on Employment-unemployment

NIC Code	Industry Specification	Number of Employees in Million
1711	Preparation and spinning of textile fiber including weaving of textiles (excluding khadi/handloom)	5.05
1712	Finishing of textile excluding khadi/handloom	0.46
171	Spinning, weaving and finishing of textiles.	5.51
1721	Manufacture of made-up textile articles, except apparel	0.46
1722	Manufacture of carpet and rugs other than by hand	0.92
1723	Manufacture of cordage, rope, twine and netting	0.46
1729	Manufacture of other textiles n.e.c.	2.29
172	Manufacture of other textiles	3.67
1730	Manufacture of knitted and crocheted fabrics and articles	0.46
173	Manufacture of knitted and crocheted fabrics and articles	0.46
17	Manufacture of Textiles	9.64
1810	Manufacture of wearing apparel, except fur apparel	6.88
181	Manufacture of wearing apparel, except fur apparel	6.88
1820	Dressing and dyeing of fur; manufacture of articles of fur	0.46
182	Dressing and dyeing of fur; manufacture of articles of fur	0.46
18	Manufacture of wearing Apparel; Dressing and Dyeing of Fur	7.34
17 & 18	Manufacture of Textiles & wearing Apparel; Dressing and Dyeing of Fur	16.98
122	Raising of silk worm	0.46
140	Ginning	1.38
	Total for silk worm and Ginning	1.84

Source: NSSO data on Employment and Unemployment, 61st Round

The estimates based on NSSO data on Employment and Unemployment, 61st Round are higher as these are based on household survey data of person's engaged in various principal and subsidiary activities. On the other hand, the data based on survey of manufacturing units i.e. NSSO data on unorganized manufacturing sector and ASI data on factory sector take into account the number of employees on an average engaged in a unit throughout the year. The difference arrises as manufacturing data is not taking into account the same job being perfromed during the year by various persons. The different persons taking up the same job e.g. when one person go on long leave or shift job from one industry to another industry classification as per NIC code etc are some of the examples, which could make the differnce. In case the purpose is to assess the potential employment,

data derived using NSSO data on unorganized manufacturing sector and ASI data on factory sector are more suitable.

2.10 Estimates of Cotton and Synthetic Fabrics Production in Mill, Powerloom, Handloom and Hosiery Sector

The estimates of number of units, employment, and output are estimated at various processing stages using NSSO data on unorganised manufacturing sector and ASI data on factory sector. However, the above anylsis is not throughing any light on the estimates of production of fabrics, the type of fabrics being produced etc by various sectors of production namely handloom, powerloom and mill sector. The estimates of production of fabrics in non-factory sector unlike in mill sector are not observed ones, but are derived using conversion rates. This is because due to unorganized nature of non-factory sector it is difficult to assess the quantum and type of production in this sector. The fact is that a major part of both handloom and powerloom sector in which major share of fabrics is being produced belongs to non-factory sector. The analysis in the following sections of this chapter is mainly confined to cotton and synthetic products because these hold the major share and also that is the main focus of this study.

The estimates of production of cotton and synthetic fabrics in unorganized sector are collected officially by Office of the Textile Commissioner, Mumbai and are based on conversion rates from yarn to fabrics, which are applied on yarn delivered to various decentralized sectors namely handloom, powerloom and hosiery sector. The official conversion rate of yarn to fabrics is very unscientific and these were fixed without considering the ground realities. These conversion rates have not changed since 1980s. Bedi & Cororation, IFPRI (DP), 2008, made an attempt to provide another set of estimates of production of fabrics by carefully working out count-range-wise conversion rates in a scientific manner. These conversion rates are based on (i) nature of yarn used, i.e. fibre composition (cotton, blended or man-made) and mode of production (spun or filament) etc; (ii) the count of yarn, i.e., its fineness or coarseness and ply of count; and (iii) reed and pick of fabrics (cloth), i.e., the closeness of the weave. The count range-wise conversion rates derived by taking these three factors into account are applied to the count-range-wise consumption of yarn (of various fibres) by various sectors to estimate the production of fabrics.

Conversion rates of Fabrics from Yarn

To develop the conversion rates of fabrics for various count ranges, the variety-wise parameters are available related to fabrics produced in mills sector from the Ahmedabad Textile and Industry Research Association (ATIRA, 1984), the fifteenth comprehensive study (second part) on inter-firm comparison. The ATIRA report has published details on various parameters such as reeds, picks, and ply for various varieties of fabrics produced in 33 mills. The data in the ATIRA report is collected

through questionnaires. Based on this, the weight of fabrics for each variety is computed using the formula.

Weight of woven fabric in grams/square meter =

$$\frac{(\text{Reeds} \times 39.37 \times 1.06 \times 1000)}{(1690 \times \text{S2/Ply})} + \frac{(\text{Picks} \times 39.37 \times 1.09 \times 1000)}{(1690 \times \text{S1/Ply})}$$

S1 and S2 are count of yarn used for fabric products; S1 is warp count and S2 weft count. Warps are put first and are kept lose in length. Wefts are put later width wise. Number of ends per inch of weft length is called reeds. Number of warp ends per inch of weft length is called picks. The wefts require more yarn per square meter (1.09) than warp (1.06). The weight of fabrics is the inverse of conversion rate from yarn to fabrics. The conversion rate is the quantity of fabric in square metres that can be produced per kilogram of yarn. Bedi & Cororation, IFPRI (DP), 2008, estimated conversion rates of fabrics from yarn, which are given in Table 2.18.

Table 2.18

Conversion Rates of Fabrics from Yarn

	Official Conversion Rates			Derived Conversion Rates Based on Count-Range-Wise Analysis		
	(meters per kilogram)		(Square meters per kilogram)			
	Before 1980s	After 1980s	After 1980s	1983	1991	2005
1. Cotton yarn	10	10.75	12.4	8.89	9.07	9.73
2. Blended tarn	8	11.1	12.9	11.97	11.74	11.59
a. 100% non cotton yarn	9.06	11.1	12.9	9.65	10.43	14.45
b. Filament yarn						
(i) Celluosic (viscose)	9.06	13	16	11.65*	11.65	11.15
(ii) Synthetic	14					
Nylon		25	31	34.54*	34.54	36.71
Polyester		13	14.5	14.05*	14.05	12.02

Sources: 1. Ministry of Textile (1989)
2. Ministry of Textiles (1996), p. 44
3. Bedi & Cororation, IFPRI (DP), 2008.

Note: * For year 1983, conversion rate for filament fabrics taken same as during 1991 because count-range-wise data for year 1983 for filament were not available.

Bedi & Cororation, IFPRI (DP), 2008, using appropriate conversion rate of yarn into fabric indicate that the total production of fabric is 43,392 million square meters in 2005–2006 (Table 2.19), whereas the official estimate indicated a highly inflated figure of 48,808 million square meters. It is observed that data in government's statistics have consistently overestimated total production except for in the initial year of 1983. Furthermore, the margin of error increased in the 1990s, reached a peak at around 22.5 percent in 1996–97 but has declined since then and is estimated at 12.5 per cent

in 2005–2006. Most of the difference can be attributed to the 100 percent cotton fabrics, the production of which has always been overestimated in official statistics. The extent of overestimation of cotton fabrics is 8.6 percent in 1983–84, 27.3 percent in 1991–1992, 41.3 percent in 1999–2000, and 40.2 percent in 2005–2006.

The analysis is extended using the same method for the period 2006-07 and 2007-08. The official estimates are 10.2 per cent higher in 2006-07 and 10.8 per cent in 2007-08 compared to derived estimates of production of fabrics. The estimates of production of fabrics are estimated at 49871 million square metres as against official estimates of 55257 million square metres during 2007-08. The differnce in terms of cotton fabrics is estimated at 39.6 per cent in 2006-07 and 38 per cent in 2007-08.

Table 2.19
Total fabric production (million square meter)

Count Range	1983	1990-91	1991-92	1996-97	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
0-10			961	2,349	2,966	3,052	2,723	2,659	2,793	3,099	3404	3503
11–20			2,309	3,122	3,648	3,488	3,471	3,271	3,632	4,022	4567	4518
21–30			3,172	5,303	7,795	7,868	8,370	8,350	8,623	9,113	11670	12721
31–40			5,122	6,620	7,036	7,105	7,467	7,255	7,973	8,479	9080	9657
41–60			4,317	6,713	9,897	10,543	11,861	12,110	12,401	13,148	15326	15326
61–80			2,368	2,626	3,026	3,166	3,212	3,222	3,690	4,337	4142	4415
> 80			1,802	2,057	1,728	1,759	1,900	1,984	2,117	2,342	2431	2660
Total	13,658	20,361	20,050	28,791	36,096	36,981	39,004	38,852	41,229	44,540	50620	52801
Fabric weight	100.2	94.8	95.3	100.7	95.6	94.2	92.1	90.9	91.2	88.7	87.6	87.5
Conversion rate	10.3	10.7	10.6	10.1	10.4	10.5	10.7	10.8	10.8	11.1	11.4	11.4
After adjustments	13,989	20,481	19,846	28,002	33,913	35,114	35,573	36,428	38,703	43,392	47812	49871
Official Estimates	13137	22928	22588	34298	39675	41390	41311	41721	44685	48808	52665	55257
% difference in Estimates	-6.1	11.9	13.8	22.5	17.0	17.9	16.1	14.5	15.5	12.5	10.2	10.8

Source: As derived by the Author using Compendium of Textile Statistics, Various issues, Office of the Textile Commissioner, Ministry of Textiles (G.O.I) and Handbook of Statistics, ICMF and Textile Committee data on Consumer Household and Texprocil data, Man-made Textiles Statistics, Synthetic and Rayon Export Promotion Council and Directorate General of Commercial Intelligence & Statistics (DGCIS), Government of India data.

The above analysis clearly brings out that the weighted conversion rate for a fabrics produced from a given fiber differ significantly over time as count composition of used yarn changes. The problem in is that the conversion rates for working official estimates of production of fabrics is kept same at unscientifically derived conversion rates for more than 30 years. The conversion rates should be different for various count ranges and different sectors (Bedi, 2002a). Moreover, the composition of various sectors also affects the weighted conversion rates, because the fabrics woven in mill sector is denser compared to powerloom and handloom sector. These factors are taken into account in Bedi,

2002a and Bedi & Cororation, IFPRI (DP), 2008 study and same method is adopted here to extend results for the period 2005-06 to 2007-08.

Discrepancies in Estimates of Production of Fabrics at Sectoral Level based on Derived Conversion Rates and Delivery of Yarn to Various Sectors

Bedi & Cororation, IFPRI (DP), 2008, showed that production estimates of fabrics derived this way are comparable with consumption estimates, which include household, non-household consumption and exports. The houshold consumption data is availble from Textile Committee and exports data from TEXPROCIL/DGCI&S. The problem with this analysis is that non-household data on textiles and clothing consumption is not availble after year 1993. Bedi, 2002a used this historical data and found that the availability of fabrics over time matches with household, non-household and export estimates. For the period during 1994 to 2005, the residual left out for consumption in non-household sector matches with the expectations of experts regarding the growth in this segment during 1993-2005 (Bedi & Cororation, IFPRI (DP), 2008).

In this study, NSSO data is also used in addition to Textile Committee data for two point comparison for household sector consumption i.e. year 1993-94 and 2004-05. In Table 2.20, the production, household consumption and exports are used to estimate the residual left for non household consumption for 1993-94 and 2004-05 using two different data sources.

Table 2.20
Production, Consumption, Exports and Non-Household Consumption of Textiles in India
(in million square metre)

Year	Production plus Imports	Exports	Household Consumption Estimates as per		Availbilty for Non-household consumption from	
			NSSO data	Textile committee data	NSSO data	Textile committee data
1993-94	24509	6323	6387	5322	11799	12864
2004-05	45338	10881	14717	13108	19740	21349
growth rate per annum	5.75	5.06	7.88	8.54	4.79	4.71

Source: As derived by the Author using Compendium of Textile Statistics, Various issues, Office of the Textile Commissioner, Ministry of Textiles (G.O.I) and Handbook of Statistics, ICMF and Textile Committee data on Consumer Household and Texprocil data, Man-made Textiles Statistics, Synthetic and Rayon Export Promotion Council and Directorate General of Commercial Intelligence & Statistics (DGCIS), Government of India data.

The estimates on availability of fabric increased from 24509 million square metres in 1993-94 to 45338 square metres in 2004-05. The export of textile and clothing products also increased from 6323 square metre to 10881 square metres during same period. The production and export increased at 5.75 and 5.06 per cent per annum between 1993-94 and 2004-05 respectively. For estimation of the household consumption, we have used two sources of data: NSOO data from 50th and 61st round and Textile committee data on household consumption of textiles and clothing items.

The household consumption increased from 11799 million square metres in 1993-94 to 19740 million square metres in 2004-05 (NSSO data). As per textile committee data, the household consumption increased from 12864 million square metres in 1993-94 to 21349 million square metres in 2004-05. So the annual growth rate of household consumption is 4.79 per cent as per NSSO data and 4.71 per cent as per textile committee data. This means growth rates and actual quantities consumed in both the data sources are not much different. However, there is lots of difference in values terms, which we have not analyzed.

Any surplus not exported and not consumed in household sector is taken as available for non-household consumption purposes. In case, NSSO data on household consumption is taken as base, the balance for non-household consumption left is estimated at 6387 million square metres in 1993-94, which increased to 14717 million square metres in 2004-05. The availability for non-household consumption is estimated at 5322 million square metres in 1993-94, which increased to 13108 million square metres in 2004-05, in case Textile Committee data is taken as base for household consumption. So the annual growth rate of non-household consumption is 7.88 per cent using NSSO data on household consumption as base and 8.54 per cent in case textile committee data is taken as base. Thus both the estimates are not much different.

It is coming out clearly that the growth rate taken place in non-housed consumption are estimated to be much higher compared to household consumption by using both the data sources. The possible reason for high growth rate is very high growth in segments consuming textiles and clothing products in non-household sector such as hotel, restaurant and offices. The hotel and restaurant industry has shown growth more than 10 per cent since last 5 years (Economic Survey. 2007-08).

The overall comparison of production and consumption estimates was also brought clearly in Bedi & Cororation, IFPRI (DP), 2008. The study also highlighted the fact that the overall comparison of production estimates of fabrics derived in this study with consumption estimates conceals wide discrepancies at sectoral and fibre level and then discovered that these are not merely due to errors and omissions in survey or due to wrong identification of fabrics, fibres and sectors, but also due to diversion of hank yarn to powerloom sector. On the basis of conversion rates, Bedi & Cororation, IFPRI (DP), 2008, estimated the estimates of handloom fabrics production in Table 2.21. These estimates of production of handloom fabrics are much higher compared to its consumption estimates. Bedi & Cororation, IFPRI (DP), 2008, clearly pointed out that hank yarn is being diverted to the powerloom sector.

Table 2.21

Sector-wise Official and Revised Estimates of Production of Fabrics: Based on delivery of Yarn to Various Sector

Mn. Sq. M

	Derived Estimates Mn. Sq. Mt		Official Estimates Mn. Sq. Mt		% Share of Various Sectors in total as per Official Estimates					% Share of Various Sectors in total as per Derived Estimates (Handloom Estimates as per delivery of hanl Yarn)				
Year	Total	Cotton	Total	Cotton	Cotton	Mill	Powerloom	Handloom	Hosiery	Total	Mill	Powerloom	Handloom	Hosier
1983	13989	9331	13137	10130	77.1	27.4	-	-	-	66.7	25.8	44.1	23.5	6.
1988-89	18242	11296	20018	13658	68.2	14.5	54.8	19.9	10.7	61.9	15.9	57	18.3	8.
1989-90	18457	11394	20598	13936	67.7	12.9	56.5	19.1	11.5	61.7	14.4	58.6	17.3	9.
1990-91	20481	12390	22928	15431	67.3	11.3	58.2	18.7	11.8	60.5	12.6	61.3	16.4	9.
1991-92	19846	11507	22588	14647	64.8	10.5	58.7	18.3	12.5	58.0	12	61.6	16.1	10.
1992-93	21226	12575	25045	16343	65.3	8.0	58.5	20.8	12.7	59.2	9.4	62.6	16.9	11.
1993-94	24220	13551	27472	17790	64.8	7.2	58.2	21.3	13.2	55.9	8.2	64.3	16.4	11.
1994-95	24546	12918	28175	17019	60.4	8.1	56.7	21.9	13.3	52.6	9.3	62.7	17	1
1995-96	28123	15203	31460	18900	60.1	6.4	54.7	22.9	16.0	54.1	7.2	61.9	17.7	13.
1996-97	28002	14068	34298	19841	57.8	5.7	56.4	21.7	16.1	50.2	7	63	15.9	14.
1997-98	32715	14089	36896	19992	54.2	5.3	56.8	20.6	17.3	43.1	6	66.8	13.9	13.
1998-99	31997	12688	35543	17948	50.5	5.0	58.2	19.1	17.7	39.7	5.6	68.7	12.6	1
1999-00	32461	13267	38627	18989	49.2	4.4	60.0	19.0	16.5	40.9	5.3	68.4	13.3	1
2000-01	33913	13958	39675	19718	49.7	4.2	60.0	18.9	16.9	41.2	4.9	68.6	13.3	13.
2001-02	35114	14025	41390	19769	47.8	3.7	60.9	18.3	17.1	39.9	4.4	69.5	12.9	13.
2002-03	35573	14164	41311	19300	46.7	3.6	62.8	14.5	19.1	39.8	4.2	70.6	10.3	14.
2003-04	36428	13412	41721	18040	43.2	3.4	64.6	13.2	18.8	36.8	3.9	72.5	9.3	14.
2004-05	38703	15431	44685	20655	46.2	3.4	63.4	12.8	20.4	39.9	3.9	70.9	9.1	1
2005-06	43392	17023	48808	23873	48.9	3.4	62.7	12.5	21.3	39.2	3.8	71.2	8.7	16.
2006-07	47812	18803	52665	26238	49.8	3.3	62.4	12.4	21.8	39.3	3.7	71.5	8.4	16.
2007-08	49871	19713	55257	27196	49.2	3.2	62.8	12.6	21.4	39.5	3.6	71.7	8.6	16.

Source: As derived by the Author using Compendium of Textile Statistics, Various issues, Office of the Textile Commissioner, Ministry of Textile (G.O.I) and Handbook of Statistics, ICMF and Textile Committee data on Consumer Household and Texprocil data, Man-made Textiles Statistics, Synthetic and Rayon Export Promotion Council and Directorate General of Commercial Intelligence & Statistics (DGCIS), Governmen of India data.

Diversion of Hank yarn to Powerloom Sector

Bedi & Cororation, IFPRI (DP), 2008, made an attempt to work out the extent of diversion of cotton hank yarn to the powerloom sector and estimated that around 25 per cent of the hank yarn production during 2004-05, despite the fact that the obligations for the hank yarn are being reduced from 50 per cent to 40 per cent of the total delivery of woven spun yarn since 2002-03. The study based on these estimates of diversion of cotton and synthetic hank yarn worked out the revised estimates of sector-wise production of fabrics in Table 2.22. In this study, we have extended the analysis upto 2007-08. The limitation however is that the exports data for handloom sector is not available separately after year 2002-03. In addition, data on consumption in non-household sector is not observed and is derived using experts opinnions. The assumptions taken for the analysis though are reasonable, but may not be absolutely correct. The data in Table 2.22 reflect that diversion of hank yarn meant to be consumed in handloom sector is taking place to other sectors and is rising over time. The hank yarn production after year 2002-03 reduced considerably subsequent to the reduction in obligation on

hank yarn production from 50 per cent to 40 per cent on the total woven yarn delivered to decentralised sector. Despite that diversion is taking plcae on large scale. This is partially because of low demand and partially due to non-availability of hank yarn at remote places. Thus putting obligation on hank yarn production is of no help. The most important issue is to deal with issues related to infrastructural development.

We have done similar analysis for diversion of spun hank yarn after year 2004-05, which was earlier not possible as data on the same is now collected in household consumption survey by Textile Committee. This analysis though also has similar limitations, but pattern is clear.

Table 2.22
Diversion of Hank Yarn (Cotton and Synthetic) as percentage of its Delivery of Hank Yarn

	Diversion of Hank Yarn during the period when Obligation to Deliver Hank Yarn was Reduced to 50 per cent of the Yarn Delivered to the Decentralized Sector														
Year	1983	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
Cotton yarn Diversion %	(-)44.6	(-)39.3	(-)0.8	5.5	(-)23.5	28.0	20.2	30.7	39.6	33.1	25.7	38.1	40.9	55.0	46
Hank Yarn Delivery Mn. Kg	285	315	310	342	328	377	422	438	504	519	540	473	514	530	54
	Diversion of Hank Yarn during the period when Obligation to Deliver Hank Yarn was Reduced to 40 per cent of the Yarn Delivered to the Decentralized Sector														
Year	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08									
Spun yarn Diversion %	15.3	22.0	25.0	33.6	44.2	46.9									
Cotton Hank Yarn Delivery Mn. Kg.	411	364	386	422	461	490									
Spun Yarn Diversion %			20.0	27.5	37.1	42.6									
Spun Hank Yarn Delivery Mn. Kg.	463	421	440	471	504	535									

The anyalsis clearly brings out that the obligations imposed on production of hank yarn, which is meant to be consumed in handloom sector, are not able to ensure the survival of handloom sector. In fact, it was reported in the survey by many handloom units that they are indifferent between usage of hank yarn and cone yarn on handlooms except for their prices and dyeing process. The handloom sector was consuming 45 percent more of then cotton hank production during 1983 and 23.5 percent more in 1991–1992, started consuming 55 percent less in 2000–2001 and 46 percent less in 2001–2002. The situation after 2002-03 is not comparable as the hank yarn production reduced considerably subsequent to the reduction on hank yarn production on mill sector from 50 per cent to 40 per cent of

the total woven yarn delivered to decentralised sector. The consumption of cotton hank yarn was 15.3 percent less during 2002-03, 22 per cent less in 2003-04, 25 per cent less in 2004-05, 33.6 per cent less in 2005-06, 44.2 per cent less in 2006-07 and 46.9 per cent less in 2007-08 than what the mills were producing under obligations.

The analysis for diversion of hank spun yarn was also made possible after 2004-05 as Textile Committee started coming out with information related to consumption of spun handloom fabrics also. The consumption of spun hank yarn was 20 percent less during 2004-05, 27.5 per cent less in 2005-06, 37 per cent less in 2006-07 and 42 per cent less in 2007-08 than what mills were producing under obligations.

The revised estimates of sector-wise production of fabrics are derived on the basis of revised conversion rates and diversion of hank yarn in Table 2.23.

Table 2.23
Sector-wise Official and Revised Estimates of Production of Fabrics: Based on diversion of hank yarn to Powerloom Sector

Mn. Sq. M

Year	Total		Cotton		Mill	Powerloom		Handloom		Hosiery		Cotton	Mill	Poweroom	Handloom	Hosi
	Derived	Official	Derived	Official		Derived	Official	Derived	Official	Derived	Official	% Share of each in Total Derived Estimates of Production of Fabrics				
1983	13989	13137	9331	10130	3604	4917	-	4545	-	923	-	66.7	25.8	35.1	32.5	6
1988-89	18242	20018	11296	13658	2902	9115	10974	4620	3993	1605	2149	61.9	15.9	50.0	25.3	8
1989-90	18457	20598	11394	13936	2667	10803	11632	3215	3924	1772	2375	61.7	14.4	58.5	17.4	9
1990-91	20481	22928	12390	15431	2589	12732	13348	3173	4295	1987	2696	60.5	12.6	62.2	15.5	9
1991-92	19846	22588	11507	14647	2376	11460	13262	3946	4123	2064	2827	58.0	12.0	57.7	19.9	10
1992-93	21226	25045	12575	16343	2000	14276	14644	2594	5219	2356	3182	59.2	9.4	67.3	12.2	11
1993-94	24220	27472	13551	17790	1990	16368	15994	3174	5851	2688	3637	55.9	8.2	67.6	13.1	11
1994-95	24546	28175	12918	17019	2271	16667	15976	2908	6180	2700	3748	52.6	9.3	67.9	11.8	11
1995-96	28123	31460	15203	18900	2019	19358	17201	3034	7202	3712	5038	54.1	7.2	68.8	10.8	13
1996-97	28002	34298	14068	19841	1957	19107	19352	2990	7456	3948	5533	50.2	7.0	68.2	10.7	14
1997-98	32715	36896	14089	19992	1948	23212	20951	3171	7603	4384	6394	43.1	6.0	71.0	9.7	13
1998-99	31997	35543	12688	17948	1785	23710	20689	2342	6792	4160	6277	39.7	5.6	74.1	7.3	13
1999-00	32461	38627	13267	18989	1714	24136	23187	2391	7352	4220	6374	40.9	5.3	74.4	7.4	13
2000-01	33913	39675	13958	19718	1670	25374	23803	2392	7506	4477	6696	41.2	4.9	74.8	7.1	13
2001-02	35114	41390	14025	19769	1546	26075	25192	2823	7585	4670	7067	39.9	4.4	74.3	8.0	13
2002-03	35573	41311	14164	19300	1496	25723	25954	3054	5980	5300	7881	39.8	4.2	72.3	8.6	14
2003-04	36428	41721	13412	18040	1434	26779	26947	3006	5493	5209	7847	36.8	3.9	73.5	8.3	14
2004-05	38703	44685	15431	20655	1526	28121	28325	2863	5722	6192	9112	39.9	3.9	72.7	7.4	16
2005-06	43392	48808	17023	23873	1656	32037	30626	2624	6108	7075	10418	39.2	3.8	73.8	6.0	16
2006-07	47812	52665	18803	26238	1746	35785	32879	2460	6536	7821	11504	39.3	3.7	74.8	5.1	16
2007-08	49871	55257	19713	27196	1781	37683	34725	2382	6947	8025	11804	39.5	3.6	75.5	4.8	16

Source: As derived by the Author using Compendium of Textile Statistics, Various issues, Office of the Textile Commissioner, Ministry of Textiles (G.O.I) and Handbook of Statistics, ICMF and Textile Committee data on Consumer Household and Texprocil data, Man-made Textiles Statistics, Synthetic and Rayon Export Promotion Council and Directorate General of Commercial Intelligence & Statistics (DGCIS), Government of India data.

Apart from the differences in estimates, the growth in production of fabrics also varies substantially between derived estimates and official estimates. The per cent growth rates for derived estimates of cotton and synthetic fabrics are estimated at 5.6, 5.2 and 5.7 per annum 1983-84 to 1990-91, 1990-91 to 2000-01 and 2000-01 to 2007-08 respectively as against growth rate of 8.3, 5.6 and 4.8 per cent for the official estimates of production. The sector-wise analysis on the basis of derived estimates show that share of powerloom sector show continuous rise and is estimated at 75.5 per cent of the total cotton and synthetic fabrics production during 2007-08. The growth rate was highest in hosiery sector production and its share increased rapidly to 16.1 per cent by 2007-08. On the other hand, the share of mill and handloom sector is showing continuous decline and is estimated at 3.6 per cent and 4.8 per cent respectively during 2007-08. However, the continuous decline in mill sector production got arrested after 2003-04 and the production in the sector grew marginally during the period 2003-04 to 2007-08. The production in handloom sector however showed no signs of such reversal and is continuously declining. The derived estimates of production of cotton and synthetic fabrics in the handloom sector is estimated at 2382 million square metres as against 4289 million square metres in case the diversion of hank yarn is not taken into account. The official conversion rates are different and estimates handloom fabrics production at 6962 million square metres.

Variety-wise Estimates of Fabrics Production

The anaylsis undertaken so far and presented in Table 2.24 indicates the estimates of hosiery fabrics, cotton fabrics, handloom fabrics and total fabrics production in the country. However, in order to get an idea of varieties of fabrics produced in the country, Bedi & Cororation, IFPRI (DP), 2008 made an attempt is made to analyse the various varieties of fabrics being consumed in household and export segment. The experts oppinnion is again used to estimate the varieties consumed mainly in non-household sector. The estimates of variety-wise consumption/production are presented in Table 2.25.

Table 2.24
Variety of Various Types of Fabrics Consumed in the household, non-household and exports segment combined together

Mn. Sq. Mt.

	Fabrics Available (Production + imports)	Garment in piece length	Piece length	Household variety	Readymade Garments	Knitted products	Household Consumption	Non-household Consumption	Exports
1983	14004	5254	3808	2248	1771	923	10545	966	2493
1988–89	18353	5430	4041	4077	3200	1605	11104	2092	5157
1989–90	18538	5337	4251	3938	3239	1772	11234	2632	4690
1990–91	20548	5077	4427	5077	3980	1987	10932	3103	6514
1991–92	19933	5612	4343	4224	3689	2064	11721	3608	4605
1992–93	21324	5965	4474	4600	3928	2356	12219	4009	5096
1993–94	24509	6393	4989	5740	4699	2688	13455	4730	6323
1994–95	24756	5950	5188	6049	4869	2700	12873	5422	6461
1995–96	28337	5804	5334	7518	5970	3712	13573	5724	9040
1996–97	28193	5627	5517	7199	5903	3948	13815	6372	8007
1997–98	32947	6656	6204	8530	7173	4384	16671	6820	9456
1998–99	32212	7549	6461	7645	6397	4160	17169	7473	7570
1999–00	32694	8037	6704	7322	6411	4220	18668	7912	6114
2000–01	34163	8725	6626	6954	7381	4477	20088	7857	6218
2001–02	36115	8821	6988	7092	8544	4670	21380	8738	5997
2002–03	37637	9322	6775	8174	8066	5300	22168	7408	8061
2003–04	38045	9714	5799	10490	6833	5209	23360	6726	7959
2004–05	40423	9912	5686	9144	9489	6192	24294	9050	7079
2005–06	45338	10249	5936	11189	10889	7075	25435	11085	8819
2006-07	49956	10955	6712	12460	12009	7821	26761	14256	8939
2007-08	52161	11133	7216	13194	12594	8025	28071	15006	9084

The share of ready-made garments increased from 12.6 percent in 1983 to 19.4 percent in 1990–1991 and then to 21.6 per cent in 2000–2001, before rising steeply to 24.1 percent in 2007–2008. The share of piece length declined continuously during the period when ready-made garments increased. The decline in the share of garments in piece length until 2000–2001 is due to the shift from traditional cloth, such as dhotis, to other types of garments. The shift in favor of garments in piece length after 2000–2001 is due to the rise in consumption of saris by working women. The share of knitted products and household varieties increased until the mid-1990s and then declined marginally due to the steep growth in other varieties.

3

Chapter 3: Analysis of NCAER, 2008-09 Survey Data

This survey work was mainly undertaken to estimate the contribution made by various size units belonging to handloom, powerloom, knitting and garment sector to the overall employment, output, value addition, fabrics production etc. A sample survey has been undertaken during 2008-09 by NCAER. The weighted average ratios per unit for various size classes so derived are then applied on the estimated number of units for each size class to estimates the contribution of powerloom and handloom sector units.

This chapter is divided into four parts. Section 3.1 is devoted to the sampling design framework adopted in this study. Once the sample is drawn and units are surveyed, the next stage should be to analyze the data. However for analyzing the data, the weights or multiplier depending upon the sample design is an important step. Section 3.2 is devoted to estimate the number of population units in each stratum using secondary source of information. In this regard, the universe for manufacturing sector is represented by combining the factory and non-factory sector data. Data on factory sector is available from ASI and for non-factory sector from NSSO unorganized manufacturing sector. Both these data sources are combined together to represent the universe. The unit-wise NSSO data on unorganized manufacturing sector, 62nd round, 2005-06 are used to estimate number of units at NIC five digit industrial classifications. Since ASI unit-wise data for year 2005-06 is not available so far, estimates from last year data are used to estimate the units for year 2005-06. It has also been found that several units were misclassified in these original data sources and they are reclassified as per definition into OAME, NDME, DME, small to medium, medium and large sector units. The estimates of units working on looms partially or completely are estimated by reviewing the industries at NIC five digit. This has been doen for each category such as OAME, NDME, DME, small to medium, medium and large sector as per their definition.

In Section 3.3, the ratios such as value added, looms, fabrics production per square meter etc is estimated for various size units from survey data for each cluster on the basis of sample design and its multipliers. Once the ratios for each size are developed, these are applied on number of units for various size classes across various sectors namely handloom and powerloom in the country using secondary information to derive the sector-wise estimates in Section 3.4. The point to be noted down here is that though NCAER survey was undertaken during 2008-09, 2005-06 in the latest year for which data on number of units is available from NSSO 62nd round data on unorganized manufacturing sector. The per unit ratios in quantity terms are not likely to be much different during the period 2005-06 to 2008-09, but number of Textile and Clothing units are likely to be different. The estimates so derived can be treated as estimates for year 2005-06 and not for year 2008-09. This needs to be kept in mind while interpreting the results.

Section 3.5 analyses the major characteristics of surveyed clusters across different sectors such as handloom, powerloom, hosiery and garment in India.

3.1 A note on Sampling Procedure adopted for selection of Clusters including Artisanal Clusters

- A two-stage sampling procedure has been adopted for selection of Industrial Clusters of Textile sector including Artisanal Clusters and textile units therein.
- The State-wise list of Industrial Cluster separately for Power looms, Readymade garments, hosiery, cotton wear, cotton textile and garments constitute the basic frame for selection of Industrial Clusters.
- Similarly, state-wise list of Artisanal Clusters for textile handloom units served as the frame for selection of Artisanal Clusters.
- The State-wise list of Industrial Clusters, in all, contained 65 Industrial Clusters spread across 14 states, namely, Andhra Pradesh, Delhi, Gujarat, Haryana, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. The selection of different types of Industrial Clusters was done on pro-rata basis and thereafter, the clusters were selected randomly. Due precautions were taken to ensure representation of Industrial Clusters of all types i.e. Powerloom, Readymade garments, etc.
- In all, 40 Industrial Clusters, out of the total 65, were selected for the survey. The State-wise distribution of the Industrial Clusters and number of selected Industrial Clusters are shown in Table 3.1

Table 3.1
State-wise distribution and number of selected Industrial Clusters

States	Powerloom	Ready Made Garments	Hosiery	Cotton Cone Weave	Cotton Hosiery	Cotton Mill (Gauge)	Cotton Spinning	Shoddy Yarn	textile print	Garments	Total	Textile units visited
AP	(1) 4										(2) 4	5
	Guntur											
Delhi		(1) 1									(2) 2	20
		Okhla										
Gujarat	(1) 2	(1) 1		(1) 1							(4) 5	41
	Surat	Ahmedabad		Vijapur (Mahesana)								
Haryana	(1) 2	(1) 1					(1) 1	(1) 1			(4) 5	44
	Panipat	Gurgaon					Panipat	Panipat				
Karnataka	(2) 3	(1) 1									(3) 4	60
	Bangalore	Bangalore										
	Belgaum											
Kerala	(2) 5										(2) 5	2
	Ernakulam											
	Mallappuram											
MH	(4) 6	(2) 3									(7)10	110
	Nagpur	Mumbai										
	Malegaon (Nasik)	Nagpur (Butibori)										
	Sholapur											
	Bhiwandi (Thane)											
MP	(1) 3	(1) 2									(2) 5	22
	Jabalpur	Jabalpur										
Orissa	(1) 3										(1) 3	13
	Ganjam											
Punjab	(1) 1		(1) 1								(2) 3	42
	Amritsar		Ludhiana									
Rajasthan	(1) 1									1	(1) 2	22
	Kishangarh (Ajmer)											
TN	(2) 3	(1) 2	(1) 1			(1)1					(5) 7	115
	Coimbatore, Palladam, Kannam Palayam	Madurai	Tirupur (Coim batore)			Rajapalayam (virdhunagar)						
	Karur											
UP	(2) 5				(1)1					(1) 1	(4) 7	67
	Jhansi				Kanpur					Noida		
	Varanasi											
WB	(1) 1										(1) 3	22
	Ranaghat (Nadia)											
Total	(21) 39	(8) 12	(4) 5	(1) 1	(1) 1	(1) 1	(1) 1	(1) 1	(1) 1	(1) 2	(40) 65	585

Note: Figures in bracket shows the number of clusters selected. The last column shows the number of selected units.
Source: Information collected from Internet, textile Ministry, Associations etc.

- While selecting these Industrial Clusters, proper care was taken to ensure that the clusters having different characteristics such as large unit centered/ vertical/horizontal/both; potential for technology up gradation; export potential; number of employment; annual turnover etc. were selected so as to enable capturing of diverse units to the maximum possible extent.
- The selection of textile units within a selected cluster was done by stratifying the units into big, medium and small units taking the key indicators such as total output, employment, etc. into consideration and units were selected randomly within the strata in order to ensure due representation of units falling across the three categories. However, due to non-availability of requisite information and also lack of desired level of co-operation at a few places, there have been instances where some deviations from the standard procedure have taken place. Nevertheless, such cases have not disturbed the overall pattern of results.
- The information related to number of medium and large units is obtained prior to selecting the sample size from each cluster, which is available from the districts headquarters as well as secondary sources. This information is used as base for selecting the sample size from each cluster. The listing of units in each selected cluster is obtained from representative associations in the cluster or from state headquarters. In case of powerloom units, the units are generally treated as medium sized which belong to factory sector and employ workers in the range of 26 to 50 workers. Any factory sector units employing workers in the range 11-25 and using power is treated as unit belonging to small to medium size range. Any unit employing more than 50 worker is generally treated in such classifications as large units. We adopted this definition for selection of units. Care is taken to represent units from different size classification. Small scale units are treated as those belonging to non-factory sector.
- During our pre-testing of questionnaire, it was felt that there is a need to further break the smaller units into classifications such as OAME, NDME and DME. The available listings at cluster levels was not helpful for this purpose and thus it was decided that listing of smaller units for the entire or partial block of cluster would be done covering this kind of detail. This allowed us to analyze the data for categories such as OAME, NDME, DME, medium and large units. Similar listing is done for all types of clusters such as handloom, powerloom and garment sector.
- The number of textile units visited for canvassing of schedules is mentioned in Table 3.1. The total numbers of powerloom clusters selected are 21 out of the total 39 clusters. The number of powerloom units selected from these cluster account for 363 and are classified as OAME, NDME, DME, small to medium range, medium and large units. In case, the cotton and synthetic units alone are taken into account, which is focus of analysis in this study, the powerloom units surveyed account for 336 units (Table 3.2).

Table 3.2
State-wise sample selected for various powerloom units

State	Number of Powerloom Surveyed units											
	Cotton						Synthetic					
	OAME	NDME	DME	10-50	>50	Total	OAME	NDME	DME	10-50	>50	Total
	1	2-5	6-10				1	2-5	6-10			
West Bengal		22				22						
Gujarat			2	9		11				20		20
Punjab												
Orissa			1	11	1	13						
Haryana			3	1		4		3	3	12		18
Karnataka			1			1		15	16	8		39
Rajasthan		1	9	12		22						
Andhra Pradesh		2		3		5						
Uttar Pradesh		19				19	1	7				8
Madhya Pradesh		8		1		9						
Tamilnadu			1	42	1	44						
Maharashtra		1	1	54		56		4	9	32		45
Total		53	18	133	2	206	1	29	28	72		130

Source: NCAER sample survey, 2008-09.

- There were about 300 Artisanal Clusters spread across 17 states namely, Andhra Pradesh, Assam, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. About 10 per cent of these clusters were selected i.e. numbering 31 by roughly maintaining a ratio of one selected cluster per 10 clusters. While doing so, it was ensured that all the states are given due representation.
- A total of 337 handloom textile units were visited, roughly in proportion of 10 textile units per cluster. The state-wise distribution of clusters, number of selected clusters and number of handloom textile units are shown in Table 3.3.

Table 3.3 State-wise distribution and number of selected Handloom Clusters				
State	**Total No. of clusters**	**Location for Handloom Units**	**Selected Cluster**	**Textile units visited**
ANDHRA PRADESH	43	Bhattiprolu (Dist. Guntur), Warangal, Jangaon (Dist. Warangal)	3	30
ASSAM	14	Sualkuchi (Dist. Kamrup)	1	10
DELHI	2	Khajoori Khas, Nand nagari	2	22
GUJARAT	13	Surendra nagar (in place of Surat)	1	11
HARYANA	8	Panipat, Chandoli	2	20
HIMACHAL PRADESH	7	Shimla	1	10
JAMMU & KASHMIR	9	Udhampur	1	10
KARNATAKA	15	Bangalore, Belgaum (Dist. Belgaum)	2	20
KERALA	13	Chendamanagalam	1	10
M.P.	14	Jabalpur	1	24
MAHARASHTRA	15	Nagapur, Solapur, Thane	3	56
ORISSA	13	Ganjam, Gopalpur (Dist. Ganjam)	2	13
PUNJAB	12	Amritsar, Tarantaran, Ludhiana	3	32
RAJASTHAN	24	Ajmer	1	13
TAMILNADU	54	Coimbatore, Kulithalai, C N Palayam	3	25
UTTAR PRADESH	31	Fatehpur, Banda, Allahabad*	3	21
WEST BENGAL	13	Dakshin Dinajpur	1	10
Total	**300**		**31**	**337**

Note: Mauaima, Lalgopalgunj and Sorav in Allahabad District were visited and most of the handloom units were found either closed or changed to powerloom.

Source: Information collected from Intemet, textile Ministry, Associations etc.

- In case of units belonging to handloom sector i.e. units employing worker in the range of 21 to 35 without power is treated as small to medium size unit. In case a unit uses electricity and employ workers in the range of 35 to 50, it is treated as medium size units. The unit with more than 50 workers is treated as large unit in case unit runs without electricity. Thus units belonging to small to medium range are those which employ 11-25 employees with power and 21 to 35 for units not using power. The small units are classified as those belonging to non-factory sector, which is further divided into OAME, NDME and DME. DME units in case of handloom sector are ones employing workers in the range of 6-20.

Table 3.4
State-wise sample selected for various Handloom units

State	Number of Handloom Surveyed units											
	Cotton						Synthetic					
	OAME	NDME	DME	10-50	>50	Total	OAME	NDME	DME	10-50	>50	Total
	1	2-5	6-10				1	2-5	6-10			
Delhi		12	10			22						
Himachal Pradesh												
Jammu & Kashmir												
Kerala				3	5	8						
Orissa				3	2	5						
Punjab					1	1		2	6	2		10
Tamilnadu	1	3	5	7		16		1		3		4
Uttar Pradesh	11					11	6	3				9
West Bengal				8	1	9						
Assam												
Haryana						0			1	16	2	19
Madhya Pradesh		2	15	4		21						
Karnataka	2	1				3	6	4	2			12
Andhra Pradesh	5	6	2	1		14						
Maharashtra		16	20	13	2	51				4	1	5
Gujarat												
Rajasthan	4	5		2		11						
Total	23	45	52	41	11	172	12	10	9	25	3	59

Source: NCAER sample survey, 2008-09.

- The number of handloom units selected from these clusters account for 231 and are classified as OAME, NDME, DME, medium and large units in Table 3.4 .

3.2 Major Characteristics of Surveyed Clusters across Different Segments of the Industry

The estimates of production for various sizes in powerloom and handloom sector needs to be multiplied by the number of handloom and powerloom units of various sizes. The information related to medium and large size units about the cluster is collected from local associations, district offices and from secondary data. This information related to medium and large units is then compared with the data from annual survey of industries, 2004-05 and gaps are filled accordingly. The errors if any are corrected after cross examining the information.

The information related to smaller non-factory sector units belonging to OAME, NDME and DME category is obtained using NSSO, Unorganized Manufacturing Sector, 62nd round, 2005-06, July-June. There are 5.78 million units belonging to non-factory sector as per NSSO 62nd round (in NIC industry classification 17 &18). OAME units account for 5.08 million, NDME 0.5 million and DME 0.13 million out of this. There are 59491 units, which should have belonged to ASI as per definition, but are listed, in NSSO unorganized manufacturing sector. The distribution of 5.78 million units into those which are run by power and without power could throw an important light on the units which

run mechanically. This become especially important as it is not always easy to segregate the handloom and powerloom units on the basis of NIC classification.

The definition for units running with electricity is taken as those which spend more than 1 percent share on electricity of their total output. One per cent share of output in electricity consumption is taken as base to segregate those units which consume electricity for running their machines from the ones which use only for other regular jobs such as lighting the bulb, fan etc. The analysis shows that 2.55 million units in NIC 17 & 18 industry classification are using power and the remaining 3.23 million are run manually. Thus even by year 2005-06, more than 50 per cent of units were run manually.

NSSO 62nd round analysis is based on sample survey of 27423 units at all India level under NIC classification 17 & 18. Such surveyed units using electricity are 14971. Thus sample size for aggregate level NIC 17 & 18 industry classification is quite reasonable. However when we go to state-wise analysis, the sample size in a few states becomes small especially at five digit NIC industry classification. Thus reliable results are not estimated for most of the states for analysis at NIC five digit levels, but at all India level the results at five digit level are expected to be reliable due to its reasonable sample size. Thus one should take care, while interpreting the results.

Since the purpose of this exercise in this section is to find the estimate of total number of units working on looms in handloom and powerloom sector to produce cotton and synthetic products, the industries at five digits NIC, 2004 classification are scrutinized to identify the ones in which looms are being used and which belong to cotton and synthetic segment. A few industries such as weaving of cotton textiles on handloom and embroidery work by hand etc are easily identifiable. However, identification is not easy in case of products such as manufacture of other textiles/textile products n.e.c. and manufacture of nets (except mosquito net). Even in products in which it is possible to identify the sector of production such as embroidery work by hand, it is not easy to find whether this product is merely value addition after weaving stage or weaving is also covered in this. In order to address all such questions, the survey undertaken from clusters and other information collected from field and experts is taken as a base to identify the industries in which weaving is an activity undertaken partially or fully. Once, such industries are identified, an attempt is made to split these units into those running with power and without power. Any unit in which expenses on electricity/power is made less than 1 per cent of the total output; it is treated as unit run manually. The remaining units are treated as running with power. These units are then split into OAME, NDME, DME, small to medium, medium and large units as per definition. It is important to mention here that several units were misclassified as per the original categorization in NSSO and ASI data and are readjusted in our analysis as per the definition.

After having a brief idea of overall size of NIC industry 17 & 18, the data in Table 3.5 focus on those units which produce cotton and synthetic products and hence are operating on looms mainly. The analysis is undertaken separately for units run manually and on power.

Table 3.5
State-wise Estimation of Cotton and Synthetic Woven Units Associated with Production of Fabrics, Made-ups etc: Total and Those Using Electricity to the Extent More than 1 percent in Their Output

State	Estimated units running looms belonging under NIC classification 17 & 18 using Electricity More than 1 % share of their Output					Total Estimated Units running looms belonging under NIC classification 17 & 18				
	OAME	NDME	DME	ASI units classified under NSSO Data	Total	OAME	NDME	DME	ASI units classified under NSSO Data	Total
West Bengal	110344	6719	5034	207	122304	422163	20730	13413	2823	459129
Uttar Pradesh	41669	8099	3668	717	54153	387159	26668	7777	3098	424702
Tamilnadu	67239	10588	5733	5752	89312	119674	15333	6285	6770	148062
Assam	2098	20	0	0	2118	95078	1399	384	766	97627
Gujarat	29696	4611	8342	3097	45746	63235	4611	8355	3197	79398
Andhra Pradesh	38665	3382	1019	193	43259	62233	4033	1424	536	68226
Rajasthan	4223	102	1291	556	6172	46714	6344	2727	648	56433
Maharashra	10212	15861	10142	9903	46118	18369	16792	10532	10186	55879
Punjab	24073	1493	165	0	25731	39415	1520	224	0	41159
Orissa	7076	0	0	0	7076	39627	119	21	27	39794
Jammu and Kashmir	10822	66	10	0	10898	37378	291	110	53	37832
Kerela	4963	299	252	180	5694	29197	487	778	485	30947
Madhya Pradesh	11342	3483	3555	7	18387	14319	3483	3672	7	21481
Karnataka	3473	2515	100	10	6098	11018	2533	170	10	13731
Himachal Pradesh	4373	148	25	33	4579	11005	183	57	33	11278
Chattisgarh	48	37	0	0	85	9191	37	72	0	9300
Manipur	149	0	0	0	149	5153	74	0	0	5227
Haryana	1623	292	286	249	2450	3657	431	403	253	4744
Uttranchal	119	0	0	7	126	4390	1	0	7	4398
Meghalaya	82	16	0	0	98	1506	36	4	4	1550
Tripura	824	0	0	0	824	1483	10	2	0	1495
Bihar	0	0	0	0	0	704	243	0	78	1025
Nagaland	82	0	0	0	82	881	0	0	0	881
Dadara and Nagar	406	0	0	0	406	406	0	0	0	406
Pondhicherry	28	0	0	0	28	133	0	28	237	398
Delhi	32	4	130	32	198	32	4	131	32	199
Sikkim	0	0	0	0	0	182	0	0	0	182
Mizoram	0	27	0	0	27	50	61	9	9	129
Goa	0	0	0	0	0	88	0	0	0	88
	373661	57762	39752	20943	492118	1424440	105423	56578	29259	1615700

Source: NSSO, employment and unemployment data, 61st round (2004-05)

After carefully estimating the number of units operating on looms, a similar attempt is made to estimate the number of knitting/hosiery units for same is listed in Table 3.6.

Table:3.6
State-wise Estimation of Units Associated with Cotton and Synthetic Knitted Production Belonging to NIC 17 & 18 Industry: Total and Those Using Electricity to the Extent More Than 1 Percent in Their Output

State	Estimated units with running looms belonging under NIC classification 17 & 18 using Electricity More than 1 % share of their Output					Total Estimated Units running looms belonging under NIC classification 17 & 18				
	OAME	NDME	DME	ASI units classified under NSSO Data	Total	OAME	NDME	DME	ASI units classified under NSSO Data	Total
Tamilnadu	571	0	776	3245	4592	1502	1	900	3493	5896
Rajasthan	467	0	0	0	467	4130	0	0	0	4130
West Bengal	2686	8	0	0	2694	2977	91	0	0	3068
Punjab	177	508	95	366	1146	177	528	196	412	1313
Madhya Pradesh	0	0	0	0	0	568	0	0	0	568
Uttar Pradesh	0	34	26	0	60	367	34	26	0	427
Meghalaya	155	0	0	0	155	310	0	0	0	310
Haryana	101	0	0	0	101	102	0	0	4	106
Kerala	74	0	0	0	74	74	0	0	0	74
Maharashtra	0	0	0	57	57	0	0	0	57	57
Karnataka	0	0	56	0	56	0	0	56	0	56
Jammu & Kashmir	22	0	0	0	22	44	0	0	0	44
Orissa	21	0	0	0	21	21	0	0	0	21
Nagaland	0	0	0	0	0	15	0	0	0	15
Mizoram	0	0	0	0	0	0	0	0	4	4
	4274	550	953	3668	9445	10287	654	1178	3970	16089

Source: NSSO, employment and unemployment data, 61st round (2004-05)

In case units manufacturing knitted and woven products are added together, the estimated mill, powerloom and knitting units belonging to this segment are estimated at 5.02 lakh (Table 3.7). Most of these units belong to powerloom sector as units in knitting sector are not much and numbers of units in mill sector are very limited. This means that the general idea that most of the OAME units should belong to handloom sector does not sound correct. We found out that out of total 5.02 lakh mill, powerloom and knitting units (i.e. weaving and knitting units running with power, i.e. spending on power more than 1 per cent of the total output value of unit), 3.78 lakh units belong to OAME segment. Such units in NDME segment are estimated at 58,312 and the DME units at 40,705 (Table 3.7).

Table: 3.7
Estimates of Cotton and Synthetic Woven and Knitted Units Running on Looms Belonging to NIC 17 & 18 Industry

Item	OAME	NDME	DME	ASI units classified under NSSO Data	Total NSSO units classified under unorganised sector
Woven Fabrics					
Powerloom Woven fabrics units	373661	57762	39752	20943	492118
Handloom Woven fabrics units	1050779	47661	16826	8316	1123582
Total Woven fabrics units running with and without power	1424440	105423	56578	29259	1615700
Knitted Fabrics					
Knitted units running with power	4274	550	953	3668	9445
Knitted units running without power	6013	104	225	302	6644
Knitted units running with and without power	10287	654	1178	3970	16089
Woven and Knitted Fabrics					
Powerloom and knitting units running with power	377935	58312	40705	24611	501563
Handloom and knitting units running without power	1056792	47765	17051	8618	1130226
Total units running with and without power	1434727	106077	57756	33229	1631789

Source: NSSO, employment and unemployment data, 61st round (2004-05)

The units, which should have been part of ASI segment, but are listed in NSSO unorganized manufacturing data are estimated at 24611. Most of OAME, NDME and DME units could be treated as small units belonging to unorganized sector, while the units belonging to ASI segment as per definition, but wrongly classified under unorganized sector as per NSSO listing are termed as units belonging to small to medium sector range in this analysis.

The state-wise estimate of various types of units presented above seems quite realistic except in case of a few states. For example in the case of Delhi, the powerloom units are banned, but the data in above tables show powerloom units in Delhi. Further investigation of NSS data on unorganized manufacturing sector reveal that the data at state level may not always represent accurate picture especially for states in which number of surveyed units belonging to particular industry are small. That is what has happened in case of Delhi. This asked for rectification of data which we did using information from field survey and secondary sources. This is the reason for minor difference in data in Table 3.7 and 3.8 and adjustments using state level first hand information rather than relying merely on NSSO data on unorganized manufacturing sector.

The factory sector data from ASI segment is added into NSSO data on unorganized manufacturing sector to represent the entire population of units belonging to weaving segment producing fabrics, made-ups and knitted products. The units belonging to ASI data are represented in Table 3.8 as small

to medium sized units, medium and large units. The small to medium size units falling under both NSSO data on unorganized sector (units wrongly listed in NSSO data) and ASI data add to 24957. The analysis of ASI data shows that there exist 3354 medium size units. These units employ less than 50 workers. There exist also larger units numbering 5590, which employ labour more than 50.

The units classified under small to medium, medium and large segment also have significant presence among units run manually. Among the NSSO data such small to medium range units account for 8618 and among the ASI units these accounts only 222. Among ASI medium size units, the handloom sector accounts for 1,718 and among large units 1715. Hence, we have observed that the total number of units run manually in India are estimated at 11.34 lakh (mainly handloom units) and those run with power are estimated at 5.05 lakh(mainly powerloom units), out of total 16.39 lakh fabrics producing units (i.e. units having at least one loom). The OAME units account for 14.35 lakh, out of which handloom units are estimated at 10.57 lakh and powerloom at 3.78 lakh. This is very significant finding as no serious attempt has been made so far to find out the accurate estimates of handloom and powerloom sector units.

Table: 3.8
Estimates of Cotton and Synthetic Woven and Knitted Units Running on Looms Belonging to NIC 17 & 18 Industry In NSSO Unorganized and ASI Factory Sector Data: Total and Those Using Electricity to the Extent of More Than 1 Percent in Their Output

	OAME	NDME	DME	ASI units classified under NSSO Data	Total NSSO units classified under unorganized sector	Small to Medium	Medium	Large	Total ASI units	All Units
	Units listed in NSSO, unorganized manufacturing sector data					Units listed in ASI data				
Mill, Powerloom and knitting units running with power	379103	59508	41775	25550	505936	124	1283	2315	3722	509658
Handloom and knitting units running without power	1053750	48419	17428	6256	1125853	222	1753	1715	3690	1129543
Total fabrics producing units running with and without power	1432853	107927	59203	31806	1631789	346	3036	4030	7412	1639201

Source: NSSO, unorganized manufacturing sector and ASI data (2005-06)

All of these units though are associated with production of fabrics. Some of them are also associated with value addition activity on fabrics such as embroidery, processing etc. So the units in Table 3.8 are not strictly fabrics producing units, but fabrics and associated activities. The numbers of units of various sizes in Table 3.8 are applied on per unit average weighted production for OAME, NDME, DME, small to medium, medium and large units using NCAER, 2008-09 survey information to estimate the production of fabrics in the units run manually (mainly handloom) and with the aid of power (mainly powerloom).

3.3 Per Unit Ratios for Units Producing Fabrics as one of their products/product

3.3.1 Units run with the aid of power and producing fabrics (Powerloom, Hosiery and Mill Sector Units)

The number of cotton and stnthetic producing units run with the aid of power (powerloom, hosiery and mill sector units running with power) is estimated at 5.09 lakh during 2005-06 (See Table 3.9). Around 54.1 per cent of these units are belonging to non-factory sector as per their definition. This includes a large share of OMAE units accounting for 74.35 per cent of the total units run with the aid of power. NDME units account for 11.67 per cent and DME 8.19 per cent. There were around 5.04 per cent units belonging to small and medium sector range. The share of medium sector is very negligible and accounts for 0.29 per cent. The large unit accounts for 0.45 per cent.

Per unit estimates have been worked out on the basis of NCAER, 2008-09, field data. Number of looms installed per unit varies from average size of 1 looms per unit in OAME to 90 per unit in large units and number of shifts each unit runs vary from 1 to 3 shifts. The employment size varies from 1.5 in an average size OAME units to 63 per large size units. The weighted production production per unit is estimated at 14136 sq. mt for an OAME unit, 40450 sq. mt for NDME unit, 232167 sq mt. for DME units. These weighted averages for each category are derived on the basis of ratios derived from sample, sample size, cluster-wise distribution of units of various categories, population of units of each category etc. For deriving the estimates at all India level, these weighted productions per units so derived are then multiplied by the number of units from Table 3.8 in each category at all India level.

The production per unit for small to medium sized units is almost double than that of DME units. The average production per units for medium sized powerloom unit is around 15.5 lakh sq mt and that of large size units around 43.2 lakh sq mt per year. The weighted production per OAME and NDME powerloom unit is taken higher than what is reported in survey results as it has been widely discovered during the survey that lots of smaller powerloom units tend to be underreporting their production.

3.3.2 Units run without the aid of power and producing fabrics (Handloom and knitted units)

The number of units running manually and producing cotton and synthetic products is estimated at 11.29 lakh during 2005-06 (more than double that of units' run on power) (See Table 3.9). Around 98.6 per cent of these units are belonging to non-factory sector as per their definition. This includes mainly OAME units covering 93.3 per cent of the total handloom units. Thus most of the handloom units are still run as family owned units without any hired worker. NDME units account for 4.3 per cent and DME 1.5 per cent of the total number of handloom units. One per cent share was of small to medium size units. The share of medium size units was only 0.16 per cent and of large units only 0.15 per cent of the total number of handloom units.

The per units loom installed vary from average size of 1 looms per unit in OAME to average size of 94 looms per unit in large units. The employment size varies from 1.5 in an average size OAME units to 94 per large size units. The annual production per units varies from 2500 Sq Mt in average OAME units to 20568 Sq Mt in NDME unit to 45052 Sq Mt. in DME units. The production per units on an average medium size handloom unit is around 196645 sq mt and large around 293233 sq mt. Production of units very much depend on the number of loom installed per units. Thus analysis of these units as per across size is very crucial for proper analysis of finding number of looms, employment, production and value added estimates. The value added per sq mt of fabrics also varies considerably across various sizes of units.

3.4 Estimates of Production, Employment, Looms Installed for Units Producing Fabrics as one of their products/product on the basis of Field furvey data using multipliers

The estimates for overall units run manually (mainly handloom) and with the aid of power (mainly powerloom) are derived using weighted per unit ratios on number of units for each size separately for powerloom and handloom sector.

3.4.1 Units running with the aid of Power (Powerloom, Mill and Hosiery units)

The ratios derived using survey data are mainly of such units, which are primarily engaged in weaving activity. However, the numbers of units derived from NSSO data on unorganised manufacturing sector and ASI sector are those units which are engaged in weaving activity either fully or partially. Thus care has to be taken to factor in this while applying ratios on the number of units. In addition to this, several units remain closed and non-working throughout the year, which also need to be factored in. In order to take care of all these factors, OAME units are multiplied by 65 per cent, NDME by 70 per cent, DME by 80, small to medium size units by 85 per cent, medium units by 90 per cent and large units by 95 per cent. The ratio for small units is low because of their high vulnerability.

Using this data from sample survey results on the number of units and ratios, it has been estimated that smaller unit i.e. OAME powerloom units including knitted units produce on an average 3483 million sq. mts. fabric per year, whereas NDME units produce 1685 million sq. mts and DME units produce 7759 million sq. mts of fabrics during 2005-06 (Table 3.9).

Small to medium unorganized powerloom units produce 15304 million sq. mts of fabric. However, ASI (falling under unorganized sector) powerloom units produce only 104 million sq. mts. of fabric per year. The medium sized powerloom units are estimated to produce 2057 million sq. mts, whereas the large powerloom units including mill sector produce 9501 million sq. mts of fabric per year. It is estimated that total overall production from powerloom sector including knitting and mill sector units is 39893 million sq. mts. of fabric per year.

The value added per square meter is estimated using survey data by subtracting cost of inputs from value of output. The imputed value of cost of labour for family workers was also included. The profit margin varies from 5 per cent to 25 per cent. For smaller units like OAME etc, the margin taken for the producers 5 per cent as most of the benefits are enjoyed by intermediary. For NDME, it is taken at 10 per cent, for medium 20 per cent and for large 25 per cent. The value added is taken weighted average within each category such as OAME, NDME, DME, medium and large. The value added per sq mt of fabrics vary considerably across various size of units and depends quite a lot on the average number of looms used per sq mt production (Table 3.9).

The value added per square meter of powerloom fabrics for OAME unit is estimated at Rs. 7.42, for NDME units at Rs.10.50, for DME units at Rs. 15.77, for small to medium size units at Rs. 6.61 per sq. mt., for medium units at Rs. 5.46 and for large size unit at Rs. 4.58 per sq. mt. The high value addition per sq. mt thus takes place in DME units compared to other ones and large units' charge low margin per sq. mt. compared to other ones.

The estimated value added in the powerloom sector is Rs. 322491 million. DME sector constitutes largest share of 37.9 per cent of the total value added in powerloom sector. The units belonging to NSSO data, but are belonging to factory sector as per definition constitute a large chunk of 19.9 per cent share, thus indicating the kind of underreporting of activity in the powerloom sector. The large scale units account for 21.5 per cent share of the total value addition in powerloom sector.

Employment estimates are derived using per unit employment in various size of units of the sector. The per unit loom installed vary from average size of 1 looms per unit in OAME to average size of looms 90 per unit in large units and number of shifts each unit run vary from 1 to 3 shifts. The employment size varies from 1.5 in an average size OAME units to 63 per large size units. Based on

analysis of primary data and applying the same on number of units, the estimates of employment in powerloom sector are worked out as 1.62 million. The major employment generation is also taking place in OAME, which accounts for 35.2 per cent of the total employment generation in the powerloom sector. DME sector constitutes 20.7 per cent share, large units 9.0 per cent and NDME units 12.10 per cent of the total employment in the sector.

The number of looms per units varies from 1 per OAME unit to 3.3 per NDME units to 8 per DME unit to 15 per 'small to medium' units to 32 per medium sector unit to 90 per large unit. Using this information, it has been estimated that the total looms installed in powerloom sector are 1.55 million.

3.4.2 Units running without the aid of Power (Handloom and Knitted Units)

The ratios derived using survey data are mainly of such units, which are primarily engaged in weaving activity.However, the numbers of units derived from NSSO data on unorganised manufacturing sector and ASI sector are those units which are engaged in weaving activity either fully or partially. Thus care has to be taken to factor in this while applying ratios on the number of units. In addition to this, several units remain closed and non-working throughout the year, which also need to be factored in. In order to take care of all these factors, OAME units are multiplied by 40 per cent, NDME unit by 50 per cent, DME by 80 per cent, small to medium by 85 per cent, medium by 90 per cent and large by 95 per cent.

From our sample survey, it is estimated that smaller units i.e. OAME handloom units including knitted units produce on an average 1054 million sq. mts. fabric per year, whereas NDME units produce 498 million sq. mts. and DME units produce 628 million sq. mts. of fabrics during 2005-06. Small to medium handloom units produced 475 million sq. mts of fabric. However, ASI (falling under unorganized sector) handloom units produced only 17 million sq. mts. of fabric per year. Medium sized powerloom units produced 310 million sq. mts, where as the large handloom units including mill sector produced 478 million sq. mts. of fabric per year. It is estimated that total over all production of fabrics from handloom units is 3460 million sq. mts. per year. In case, the knitted goods produced on units run manually is excluded, the woven handloom fabrics production is estimated at 3145 million square meters during 2005-06. This is as against Textile committee estimates of 6100 million square metres during 2005-06.

These derived estimates of 3145 million square metres are quite comparable with estimates derived in Table 2.24 of 2624 million square metres production in handloom sector. The estimates in Table 2.24 are derived using revised conversion rates on the delivery of hank yarn after considering its diversion. The analysis using two different sets of method thus confirm the fact that hank yarn (cotton and synthetic) is being diverted to a large extent towards the consumption of powerloom sector. The

alternative is that hank yarn is only produced on mill sectors record and infact cone yarn is shown as hank yarn for delivery purposes to meet the mandatory requirements of hank yarn production. Thus mandatory obligations on hank yarn are not serving the purpose to sustain the handloom sector and its production is declining steeply over time.

It has been estimated using survey data that value added per square meter for smaller units i.e. OAME is estimated at Rs. 9.80, NDME at Rs.21.30, DME at Rs. 14.00 per sq. mt., small to medium units at Rs. 13.14 per sq. mt., medium units at Rs. 10.98 and large units at Rs. 10.24 per sq. mt. The estimated value added in the handloom sector is Rs. 44493 million. NDME sector constitutes largest share of 23.84 per cent of the total value added in handloom sector and OAME accounts for another 23.21 per cent share. The large scale handloom units' accounts for 11.0 per cent share in terms of value addition as large co-operatives exist in the handloom sector. The medium sector accounts for 3.43 per cent.

Based on analysis of primary data and applying the same on number of units, the estimates of employment in handloom sector are worked out at 2.21 million. The major emplo yment generation in handloom sector is taking place in OAME units, which accounts for 71.5 per cent of the total employment generated in the sector. NDME units account for 7.7 per cent, DME 5.9 per cent, small to medium 5.0 per cent, medium sector 2.7 per cent and large scale 7.3 per cent share in total handloom sector employment.

The number of loom per units varies from 1 per OAME unit to 3.5 per NDME units to 7.5 per DME unit to 17 per small to medium units to 34 per medium sector unit to 94 per large unit. Using this analysis, it us estimated that 1.68 million looms are installed in handloom sector, which are higher than looms installed of 1.55 million in the powerloom sector.

Table: 3.9 Number of Units and Looms, Employment, Production and Value Addition									
	OAME	NDME	DME	OAME, NDME, DME	Small to Medium unorganized	Small to Medium ASI	Medium	Large	Total
Powerloom, Mill and Hosiery Sector									
No. of powerloom units	379103	59508	41775	480386	25550	174	1474	2315	509899
Per unit looms	1	3.3	8		15	15	32	90	
Installed Looms in Powerloom Sector	379103	196376	334200	909679	383250	2610	47168	208350	1551057
Employment per unit	1.5	3.3	8		13	13	25	63	
Employment	568655	196376	334200	1099231	332150	2262	36850	145845	1616338
Production/ unit/ year in Sq. Mts.	14136	40450	232167	286753	704693	704693	1550325	4320000	7566464
Total production (Mn. Sq. mt.)	3483	1685	7759	12927	15304	104	2057	9501	39893
Value added/ sq. mt.	7.42	10.5	15.77		6.61	6.61	5.46	4.58	
Value added (Mn. Rs.)	25846	17692	122360	165898	101161	689	11229	43513	322491
Handloom Sector									
No. of handloom Units	1053750	48419	17428	1119597	6256	222	1753	1715	1129543
No. of loom per unit	1	3.5	7.5		17	17	34	94	
Number of looms installed in handloom	1053750	169466.5	130710	1353927	106352	3774	59602	161210	1684865
employment per unit	1.5	3.5	7.5		17	17	34	94	
Employment	1580625	169467	130710	1880802	106352	3774	59602	161210	2211740
Production/ unit/ year (Sq.mt.)	2500	20568	45052	68120	89384	89384	196645	293233	736766
Total Production (Mn. Sq. mt.)	1054	498	628	2180	475	17	310	478	3460
Value added/ sq. mt.	9.8	21.3	14		13.14	13.14	10.98	10.24	
Value added (Mn. Rs.)	10327	10606	8794	29727	6246	222	3407	4892	44493
Source- Primary Survey Conducted by NCAER in 2008-09									

3.4.3 **All Units Producing Fabrics as one of product (Fabrics as Main product or small share)**

The powerloom sector here mainly include entire mill sector production and partially knitting sector production as most of knitted production is taking place with the aid of power. The handloom sector mainly includes handloom units and also a production of knitted units, which are run manually.

The data for the powerloom (powerloom, hosiery and mill) sector is combined with handloom (handloom and share of knitted units run manually) sector to estimate the total number of units producing woven and knitted fabrics and made-ups. This adds up to 1.64 million units, out of which 68.9 per cent belong to handloom sector. The highest percentage units belong to OAME segment and most of handloom units are family owned. The share of handloom units in large sector is also high due to presence of large co-operatives. The situation is similar in terms of looms installed and employment. The total employment generation for production of woven and knitted fabrics and

made-ups is estimated at 3.8 million. The numbers of looms installed in powerloom and handloom sector are 3.2 million.

There is large difference in estimates of production of fabrics in quantity terms as derived in this chapter and the official estimates given in Table 2.24. The estimates of total fabrics production as per Textile Committee data for year 2005-06 are 48808 million square metres as against the estimates derived in Table 3.10 of 43353 million square metres. The derived estimates in Table 3.10 are however very close to the derived estimates of total production of fabrics for year 2005-06 of 43392 million square metres in Table 2.24, which were derived using revised conversion rates and delivery of yarn to various sectors after taking into account diversion of hank yarn.

Out of the total 43353 million sq. mts production, OAME account for 4537 million sq. mts. of fabrics, NDME 2183 million sq. mts., DME 8387 million sq. mts., Small to medium units 15901 million sq. mts, medium units 2367 million sq. mts and large units 9979 million sq. mts. of fabric per year.

Table 3.10
Mill, Powerloom, Hosiery and Handloom Sector

	OAME	NDME	DME	OAME, NDME, DME	Small to Medium unorganized	Small to Medium ASI	Medium	Large	Total
Total No. of Units	1432853	107927	59203	1599983	31806	396	3227	4030	1639442
Handloom share	73.5	44.9	29.4	70.0	19.7	56.1	54.3	42.6	68.9
Installed looms	1432853	365843	464910	2263606	489602	6384	106770	369560	3235922
Handloom share	73.5	46.3	28.1	59.8	21.7	59.1	55.8	43.6	52.1
Employees engaged in these sectors in India	2149280	365843	464910	2980032	438502	6036	96452	307055	3828077
Handloom share	73.5	46.3	28.1	63.1	24.3	62.5	61.8	52.5	57.8
Production in Mn. Sq Mt	4537	2183	8387	15107	15779.5	121	2367	9978.5	43353
Handloom share	23.2	22.8	7.5	14.4	3.0	13.9	13.1	4.8	8.0
Value added (Mn. Rs.)	36173	28298	131154	195625	107406	911	14636	48406	366983
Handloom share	28.5	37.5	6.7	15.2	5.8	24.3	23.3	10.1	12.1
Source- Primary Survey Conducted by NCAER in 2008-09									

The value added estimates are worked out on the basis of cost of production plus margin minus input cost. It has been estimated that the value added in textile and weaving for the cotton and synthetic sector is Rs 366983 million, which is 10 per cent lower than NAS estimates of Rs 409310 million for the textiles sector covering all fibres for the year 2005-06. Thus it appears that the estimates derived in this study are on the higher side as compared to NAS data. The reason for this could be that value added per unit derived from survey results are for the current prices 2008-09. The per unit ratios in quantity terms are unlikely to differ much, but these ratio in value terms are at least going to be higher by the margin of inflation during the period 2005-06 to 2008-09.

The estimates of employment derived in this study are 3.8 million, which include 1.6 million employment in powerloom sector and 2.2 million in handloom sector. These estimates are lower than employment of 6.56 million in cotton and synthetic textile sector cotton derived by Bedi & Cororation, IFPRI (DP), 2008. The explanation for this is that estimates derived in this study are confined mainly to weaving activity as ratio used is employment required on loom per square metre production of fabrics. Bedi & Cororation, IFPRI (DP), 2008, estimates include all allied activities such as dyeing, processing and any value addition in textile sector.

NSSO 61st round estimates on employment unemployment in textile sector are 9.64 million, which include employment generation not only in cotton and synthetic fibres, but also in silk, wool and jute textile products during 2004-05. The estimates from NSSO data on unorganized manufacturing sector and ASI data are 7.65 million for the year 2005-06. Employment estimates using household survey information from NSSO data on employment-unemployment are generally higher compared to unit-wise data (NSSO data on unorgaised manufacturing sector and ASI data). The reason is that employment estimates in unit level data provide us the extent to which the potential employment exists throughout the year. In case of NSSO employment unemployment data, the purpose is different and the workers who work only part time in a unit and remain ideal during the remaining part of the year are counted as workers, though his place is actually replaced by someone else for the remaining part of the year. In unit level data, in this particular case, it is going to be counted as one worker on the basis of potential employment throughout the year. In case of household survey data collected by NSSO on employment –unemployment, it is likely to be counted as two employees. This explains the wide difference in these two sets of data on employment for the textile industry.

3.5 Major Characteristics of Surveyed Clusters across Different Segments of the Industry

3.5.1 Powerloom Sector

The Powerloom sector is playing an important role in meeting the clothing needs of the people of India in recent decades. The share of powerloom sector in total production of cloth is consistently increasing and this has been mostly at the cost of handloom sector.

The powerloom clusters are located in diverse geographical boundaries and historically are an outgrowth where handlooms were unable to compete with mill sector. Easy availability of raw material, availability of skilled labour and nearness to ancillary units like dyeing and processing units played a crucial role in determining the location of the powerloom clusters. Many mills sector units also found it in their interest to convert themselves into small fragmented powerloom units, as there were many advantages of running small powerloom units over large mills. As most of the powerloom units lie under unorganized sector they get many benefits in the form of lower power charges per unit

in many states, reduced labour cost as many labour laws are not applicable, lower overhead costs, tax saving and easier to evade taxes, etc.

This study covered 21 clusters from 13 states namely Maharashtra, Tamilnadu, Andhra Pradesh, Karnataka, Kerala, Gujarat, Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Rajasthan, West Bengal, Orissa. Out of these 13 states, around one-half of the powerlooms units are located in Maharashtra and Tamilnadu only.

The various kinds of varieties of fabric (suiting, shirting, made-ups, long cloth, etc.) are manufactured in these clusters. Quality of fabric produced depends upon the loom and yarn used. There is homogeneity in the type of products made within a cluster, product a wide variation across different units in a cluster. In Uttar Pradesh, West Bengal and Madhya Pradesh the average size of the surveyed units is as small as 3, 4 and 6 looms respectively. On the other hand, in Tamilnadu and Maharashtra the average size of surveyed units is comparatively much larger with around 40 looms. Average size in the remaining states varies between these two limits. Some of the reasons for such a large presence of small and medium sized units have been the benefits provided to unorganized sector. In Tamilnadu powerlooms are clustered mostly in Namakkal, Erode, Salem, Coimbatore, Vellore, Cuddalore, Kancheepuram, Thiruvannamalai, Madurai, Karur, Tiruvallur, Tirunelveli and Virudhunagar Districts. Most of the powerlooms situated in Salem, Karur, Tiruppur, Thiruvallur, Pallipalayam and Komarapalayam areas are involved in Export oriented production. Here it has been noticed during the survey that due to differential power tariff policy of the state government, even a few big corporate houses run many small and medium sized powerloom units under different worksheds and under different banners across these clusters. e.g. a person with 80 powerlooms doesn't places all the looms under one work shed but divides it into 5 or more worksheds with no. of looms being 16 or less in each workshed, to avail of the benefits of small scale sector. In Tamilnadu, in case of power use for industrial purposes, power connection upto 10 H.P. is charged with Rs. 2.30 per unit but power connection more than 10 H.P. is charged with Rs. 4.90 per unit. Moreover, it is much easier to get a less than 10 H.P. power connection than a power connection with higher usage from the State Electricity Board. Thus state policy in Tamilnadu indirectly encourages small powerloom units. Andhra Pradesh Government also follows a similar power policy in 2001, and change Rs. 0.87 per unit power tariffs upto 5 HP compared to Rs. 1.74 per unit for more then 5 HP.

In the state of Tamilnadu and Gujarat, powerloom are mainly run around the clock i.e. 24 hours throughout the year. Units in these states are run in two shifts of 12 hours each. In other states, units are generally not running 24 hours a day. In Andhra Pradesh, Karnataka, West Bengal, Madhya Pradesh and Maharashtra powerloom units run only 8-10 hours a day on an average. In Punjab, Uttar Pradesh and Orissa the units run around 12 hours a day.

In most of the states powerloom units lie under both cooperative fold and private sector. In some states like Tamilnadu, Maharashtra, Madhya Pradesh and Kerala, cooperatives are much more successful than in other states. Cooperatives generally provide yarn to its members but the latter have the obligations that they have to prepare certain kind of fabric as per the directives of the state government. For instance, in Tamilnadu Powerloom Weavers Cooperative Societies mainly produce the cloth required under the Scheme of Free supply of Uniforms to School Children and Free Distribution of Sarees and Dhoties Scheme. Similarly, in Madhya Pradesh the Powerloom Cooperative Societies have to supply bedsheets and other made-ups to state government hospitals and government offices. On 31st March, 2005, 133 Powerloom Weavers Cooperative Societies in Tamilnadu were operating with estimated 23,000 looms. The cooperatives in Madhya Pradesh are ridden with problems related to quality and in adequate supply of yarn for the members, delay in getting payment for products made, etc.

Almost all the clusters are facing severe power shortage problem. Only difference is in the extent of the problem. Duration of power cuts is much more in northern states as compared to southern states. In some clusters of Uttar Pradesh and Punjab even six hours of continuous power supply is very rare. Small and household powerloom units are bearing the brunt of this erratic power supply as they can't afford gen-sets for uninterrupted power supply. So they have to be content with lesser hours of production. This affects the level of employment apart from pay us for idle labour at the times of erratic power supply. In states like Punjab and Uttar Pradesh, labour is generally paid on a piece rate basis. Where it has been found that labour prefer to leave the work place in case of schedule/ unscheduled power cut and at times are not available in after the cut even this affects the total production of the units.

As regards labour requirement, powerlooms are not as labour intensive as handloom. When the scale of operations is expanded, labour requirement per loom decreases drastically. It was found that upto size of 10 powerlooms, employee-loom ratio is almost 1 in a unit (taking into account labour involved in all sorts of activities). But when the size of a unit is increases further, employee-loom ratio declines. In a medium sized unit on an average one worker operates 2-3 powerlooms simultaneously and employee-loom ratio varies between ½ and 1/3. This increases the productivity of the labourer as well as his earnings as in most of the clusters workers are paid wages on piece rate basis rather than per day basis. But for preparing a good quality fabric the worker-loom ratio has to be kept low even in a medium sized unit as the worker has to be more cautious and involved in the process.

This is also to be pointed out that the type of looms or in other words the level of modernization also varies across the states and this is a major factor affecting the production per loom and the quality of

fabric produced by the loom across states. Fabrics produced from a shuttleless loom are of much greater width and quality is generally superior than from an automatic or semi-automatic loom. The shuttleless weaving machines ~~are~~ even enable simultaneous weaving of two or more widths. ~~of~~ 400/420 cms width is possible from Air Jet and Rapier looms. Projectile shuttle less loom even can produce two or more width of 540 cms. The weft insertion rates is also very high in case of shuttle less loom and goes upto 1560, 1480, 2850 and 2565 Mtrs./Mt for Projectile, Rapier, Air Jet and Water Jet weaving machines respectively. Thus production per day increases rapidly with the change in technology.

One unique characteristic about Berhampur cluster (Ganjam district) in Orissa is traditional handloom units are fitted with motor and hence, called powerlooms units. They are very rudimentary forms of powerlooms with very less productivity as compared to ordinary powerloom. They are labour-saving also as compared to handlooms. These handloom units retain flexibility and run manually at times as well.

Cost Structure

The quality of fabrics produced across clusters differs due to quality and fibre use. The differences in price even for the same product due to difference in quality are very natural. An attempt is made to estimate the difference in cost of production across cluster due to factors such as cost of yarn, weight of fabric per sq. metre, cost of dying, processing, power, transport & communication, maintenance of looms, labour and overheads, etc.

In manufacturing grey cotton fabric, the cost of yarn varies from Rs. 3.87 in Maharashtra to Rs. 14.94 per sq.mt in Haryana. In Gujarat and Rajasthan it is Rs. 5.07 and Rs. 16.74 per sq. mt respectively (see Table 3.3A). This wide variation in yarn cost is due to differences in weight of fabric per sq. metre and purchase price of yarn. The purchase price of yarn in turn depends on several factors. If the yarn has been purchased from powerloom cooperative it costs less and if it has been purchased/procured from master weaver or middlemen or retailers it costs more. Similarly, if the yarn is procured in bulk directly from spinning mills or wholesalers, it costs less and if it is purchased in small quantities from wholesalers/retailers it costs more. But a large number of units are not able to purchase in bulk quantity directly from mill due to their small size and nonexistent/non-operational cooperatives. Hence, these small and unorganized units can't harness economies of scale in procurement of raw material. Therefore, they have to rely on master weaver/intermediaries/traders for supply of yarn but the latter often indulge in speculative practices, which often leads to increased prices of their products and/or reduced margins (of the weavers) and hence affecting their competitiveness.

Condition of dying and processing in many clusters is in a very bad shape due to redundant dying and bleaching techniques, inadequate technology upgrading, poor yarn quality testing facilities, poor quality of water, inadequate water supply, etc. This affects the quality of dying and processing tremendously. This is particularly the case in Uttar Pradesh, Orissa and Madhya Pradesh. In some states like Tamilnadu and Punjab due to strict observance of effluent treatment laws in dying houses by Central Pollution Control Board many dying units had closed down. Due to this the powerloom owners are facing much difficulty in dying and their cost of dying also has increased.

Power cost and adequate availability power also play a very important role in development of powerloom sector in any cluster/state. Some states like Tamilnadu, Andhra Pradesh, Karnataka and Gujarat provide power subsidy to powerlooms. So powerloom units in these states have an edge over other states. The consumption of power per square mt. of fabric also depends on whether brand new loom or second hand loom is used in the production process. It also depends upon the skill of the labour. In Andhra Pradesh production of one sq. metre of cotton dhoti requires on an average Rs. 0.51, in Uttar Pradesh Rs. 0.62; Tamilnadu Rs. 0.70 and Maharashtra Rs. 1.05 of electricity.

Wage cost per sq. mt. of fabric mainly depends upon the quality of fabric that the worker is making. For making a good quality fabric more labour time and skill is required and hence wages per sq. metre of fabric are higher. Absence or presence of trade unions in the cluster, shortage of labour are the facts affectes wage rates. E.g. At Ichalkaranji and Malegaon (Maharashtra) cost of production of low quality polyester cloth is cheaper due to lower wage rates because of absence of trade unions as compared to Sircilla in Karimanagr district of Andhra Pradesh. It can be seen that wage cost per sq mt. of a cotton saree in West Bengal where the labour is unionized is Rs. 2.51 as compare to Rs. 1.10 in Tamilnadu (Table 3.3A).

Profit margin/overhead costs vary in the range of 5 to 35% across clusters. This is much subject to market conditions and the order got from the buying party.

In most of the clusters units produce on the basis of jobwork, both in small and medium sized units. Under jobwork a powerloom unit does not produce on its own initiative but produces fabric only when it gets order form a buyer or buying house. The buyer supplies the unit grey yarn or dyed yarn as per requirement and get the job work done and pace for the same. In clusters like Sircilla in Karimnagar district of Andhra Pradesh, job work is mainly done through master weavers, who work as middlemen markets. Master weavers are very few in number as compared to total number of the units in this cluster. The master weavers use many manipulative practices to increase their margins. Most of the time they don't pass on the higher price of fabric to the jobworkers. Similarly, when the yarn prices are decreased in the market they don't pass on the benefit of reduced prices of yarn to small units. In the

process, even if market conditions are favorable to the industry these small units don't receive the profits that they deserve.

In clusters like Jabalpur cluster in Madhya Pradesh, the supply of yarn units is entirely dependant on the MP State Powerloom weavers Co operative Federation. But the cooperative is not able to timely supply yarn to the units in adequate quantity. So many times they have no yarn to run powerlooms and the alternative sources are very costly. Similarly, in Somanur cluster of Coimbatore, powerloom units complain the non-availability of yarn in local market at reasonable price due to excessive exports of yarn. The smaller size units also suffer due to lack of storing capacity. The larger units have that advantage to store yarn when conditions are condusive. Thus supply availability of yarn at reasonable price is very crucial for the growth of small scale sector. The association co-operative should work in close co-ordination to make it success.

Problems and Policy Implications

In clusters such as Sircilla in Karimnagar district of Andhra Pradesh the weavers produce a single product (cheap polyester) because of the traditional machinery for which the demand has become unsteady. Diversification to high value polyester cloth, value addition on plain polyester cloth produced, and switching to high count cotton cloth requires investment in modernized looms, dyeing, printing units and sizing units. The "Textile Park" established in Sircilla has facilitated big investors to invest in jet looms and semi-automatic looms by availing of the TUFS and by giving other incentives and credit subsidies. Thus special schemes for modernization of small powerloom units are needed, which can include strengthening the cooperatives self-help group model of microfinance in clusters etc.

Many of the powerloom owner units are unable to avail of the TUFS as they work on a jobwork basis, and most of them don't maintain proper books of account. So they don't fulfill the accounting requirements of bankers for loans. The small sized units also don't qualify the working capital availability requirement of banks. The requirement to contribute 35% of the project cost for getting TUFS loan is also not easy to satisfy.

Arranging for supply of yarn and marketing of the products are other important challenges which require further strengthening the cooperatives. Government should facilitate the sale mela, `saller buyer interaction and help development of new varieties/ products, and technology, create infrastructure and R&D.

To mitigate the power problem in the short term small powerloom units in a cluster should pool their resources to establish a captive power plant or common gen-set on a shared basis. In this collaborative

effort of the units government should provide some financial and technical help. But in the medium to long term government will have to invest in the power infrastructure enormously to make the existing firms competitive internationally and attract new firms in the industry.

There exist some gaps in fiscal policy also viz. some products alone are exempted from sales tax. This serves as a disincentive to enlarge the product mix toward more value added products. Therefore, powerloom units in Solapur, Maharashtra focus on production of conventional products such as terry towels and not other market oriented value-added products (e.g. aprons). Similarly, in other states also certain clusters make some conventional products due to fiscal policy incentive toward certain product and disincentive toward other product. This anomaly needs to be corrected.

3.5.2 Hosiery Sector

Traditionally 'Hosiery' is knitted products used for covering of the legs and feet i.e. stockings. But 'hosiery' is now used in wide and sense and covers all knitted fabric such as, T-shirts, undergarments, knitted trousers, socks, stockings, etc. The thickness knitted of fabrics produced and weight is defined in terms of denier or opacity. Hosiery garments are those garments that are made from knitted fabric Tirupur and Ludhiana are the leading knitted fabric and garments making clusters in India. Some other important clusters of knitwear are Kanpur, Kolkata and Kota. In this study Tirupur, Ludhiana and Kanpur clusters have been covered. In Tirupur cluster T-shirts, undergarments, vests, trunks, knitted pyjama, kidswear, ladies wear, etc. are made. Ludhiana is mainly producimg woolen knitwear, apart from other knitwear goods. In Kanpur mainly underwear, vest and socks are mainly products produced (Table 3.4A-3.5A).

Tirupur

There are about 1500 knitting units, 2500 knitted garment making units, 700 dying and bleaching units, 500 fabric printing units, 250 embroidery units, 300 compacting and calendering units and 500 other ancillary units in Tirupur. Presently, most of the hosiery production activities in the cluster take place in non-composite segment. The number of integrated units is very low as compared to total number of units in Tirupur. In addition, within integrated units also there is much heterogeneity in terms of operation, size and scale. For example, in some units knitting, embroidery, stitching and printing are done, in other units only knitting, stitching and embroidery are done. Further, in some units only knitting and stitching are done. There are very few units where all the operation of the value chain, from knitting to packaging of garment is undertaken. In Tirupur, more than 90% of the knitting and knitted garment units are export oriented units. It contributes to 80% of the country's cotton hosiery exports. During 2007-08 exports from Tirupur amounted to Rs. 9950 crore which decelerated from Rs 11000 crore in 2006-07. During 2008-09 (Apr-Sept) it is estimated at Rs. 5050 crore.

The production of hosiery product, involve various processing stages. First, grey yarn or dyed yarn is obtained from spinning mils for knitters. This knitted fabric is sent for bleaching, dying and processing. Now this processed fabric goes for calendering and compacting (i.e. proper rolling). This fabric goes through cutting and stitching. Now some printing and/or embroidery work is done on this stitched fabric garment as per demand. This finished product is packed and dispatched for sale to final consumer. In Tirupur, most of the knitting is done by circular knitting machine. The productivity of the machine depends on the diameter of it. The production of knitted fabrics 24 hours on 30" diameter circular knitting machine is 30-40 kg., on 40" diameter machine is 200-250 kg., on 50" and 60" diameter machine is 1000 kg. These productivity indicators are for single-jersey knitted fabrics and are likely to vary for double-jersey. The machines with 50" and 60" diameter run only for six months as there exist seasonality in demand of the fabric knitted on these machines. Flat knitting machine is used for making of collar of T-shirts. Knitting units knitting is done 24 hours in three shifts in almost all the clusters. Fabric from the yarn wastage is very low at around 1% to produce knitted fabrics. Knitting is very capital intensive and labour saving activity and knitting machines cost is very high. The cost of circular knitting machine is as high as Rs. 80 lakh. To save on labour, one worker operating 3-5 machines simultaneously, which is not very quality affection, as one worker can't pay proper attention to 5 machines at the same time and result is so supply of different colours goes unfeeded by the feeder (worker) at times, which affects the quality. The poor quality of fabrics is discarded for mainly garment, at the time of cutting.

After dying, processing, calendering and compacting of the fabric, it goes to garment making unit/division. Most of the cutting operation is either manual or semi-mechanized. Fully mechanized cutting is rare in Tirupur. After cutting, stitching of fabric is done. Most of the stitching machines used in Tirupur are power driven. They use very modern stitching machines imported from S. Korea, Taiwan, Japan, China, etc. One piece of garment goes through different stitching processes, undertaken on various stiching machines for various parts and applying accessories. The stitched clothes then under 90 checking process. In some high value garments dying is done after stitching. In some other garments printing and /or embroidery has to be done as per order. Once stiching process is over, labeling, ironing and packaging are undertaken before dispatcheing it to the buying/export houses.

In contrast to knitting units, garment units work 10-12 hours a day and runs only in one shift. A worker with no work experience in the sector firstly has to work as a helper. After a few years experience, he is then assigned the jobe of tailor or supervisory. The wages differ according to type of work, skills and productivity. The piece rate wages is mainly adopted practice for most of activities.

The most of the manufacturers are local people either from Tirupur or its adjoining areas. So they are not very large firms or limited liability companies. Most of them are under either single proprietorship

or partnership. Most of the units do only jobwork. In most of the cases product specification and design is given by the buying houses/export houses to value chain upstream (i.e. to knitting units, dying units, processing units, compacting units, etc.) according to the product specification and quantity. Thus very few units in Tirupur sell garments in their own brand name, rather they work for major brands in clothing industry. All leading brands like Nike, Cutter & Buck, Adidas, GAP, Tommy Hilfigure, Katzenberg, Van Heusen, Fila, Arrow etc., and leading chain stores like C&A, Wal Mart, Target, Sears, C&A and Mothers Care, H&M are sourcing from Tirupur. In fact one of the garment manufacturers in Tirupur supplied T-Shirts to FIFA World Cup also.

The problem of power availability is one of glaring problem in Tripur also. Three to four hours power cut is very common and often this is very erratic and unscheduled. To overcome this problem, hosiery units especially large and medium sized units have gen-sets for uninterrupted power supply. But this increases their cost of operations. Another problem is labour availability. Units reported that they have in general 20-30% of labour supply shortage compared to their labour demand. Due to this many units feel difficulty in expanding their scale of their operations. Further, there is lack of proper infrastructure e.g. water, roads, rail, drainage, residential facilities, etc. in Tirupur. In the last two decades the capacity of the cluster has outgrown so much that infrastructure has not been able to keep pace with it. The labour problem is associated with the problem of accommodation and this explainthe fact why despite the unemployment in other regions. The region is unable to attract those workers. Lack of training centre for workers is another problem. Next, after implementation of strict emission norms by Central Pollution Control Board (CPCB) on dying units many dying units have closed as they are not able to purchase and maintain costly water treatment plant. This is affecting the value chain severely. To overcome this problem many dying units are installing water treatment plants on a shared basis. Many units feel that zero percent emission will still not be possible and they may again face this sort of problem in future, as they are not able to access such type of technology which could make zero percent emission possible. CPCB officials also are not helping them in this regard.

Ludhiana

This is most important cluster of woolen and acrylic knitwear in India. About 70% of woolen garment exports from India are made from Ludhiana. It also uses cotton and blended fibre to produce hosiery, knitwear and various readymade garments. The knitwear products can be divided in two parts-winter wear and summer wear. Winter wear includes sweater, woolen socks, pullover, cardigans, thermal wear, gloves, muffler, shawls, jackets, jersey, etc. Summer wear includes T-shirts, cotton and blended socks, under garments, knitted bedsheet, knitted skirts, knitted top, sports wear and night suits, etc. During 2006-07 the value of exports of hosiery and readymade garments were of the order of Rs. 1306 crore. On March 31, 2006 there were about 5503 small-scale units and 25 large/medium scale hosiery and garment units in Ludhiana. The cluster has about 275 small and medium process houses. Most of

them are traditional dying plants using hank dying. The number of package and fabric dying units is very low. Although most of the process houses used local machines, however around 25 units used fully imported machines. Here the average hosiery unit size is much small as compared to Tirupur. There are about 4000 circular knitting machines, out of which 1500 are fully automatic, 500 are computerized flat machines, 120 are fully fashion flat machines and about 60,000 flat knitting machines (hand flats).

It is found that a handful of spinning mills supply yarn to knitting units in this cluster often through their agents. Apparently there is no shortage of yarn supply, but the price of yarn is frequently raised. It happened that the yarn price is re-negotiated during period between placing order and delivery of yarn. Imposition of anti-dumping on the import yarn from Thailand aggravated the problem of escalating yarn prices.

In order to improve the quality of product, production and productivity, modernization is essential. This prompted knitting and garment units to install automatic and computerized knitting machines. Majority of these machines are imported. Government of India has introduced incentives for technology upgradation in the form of interest subsidy through Technology Upgradation Fund Scheme (TUFS). These units largely benefited from this scheme. Second hand machines with good technology are imported at half the prices of new ones. As managers of the units interviewed there is not much difference in the productivity or product quality of second hand machines in quit good as per response from managers.

Deficiency in availability of skilled workers is a major problem particularly in the garment industry. Traditional manually operating skills are ineffective in modern garment industry. Shortage of these skills is affecting production and productivity of garment industry in particular.

The strong presence of various associations is helpful in this regard.The units do not face any hurdle in getting finances from banks. The major problem is that of frequent increase in interest rates, upset.The main complaint of SMEsunits is that they are discriminated by the banks and are charged much higher interest rates compared to larger units.

Except a few, as in case of Tirupur, most of the garment manufacturers are selling their products without their own brand.The moderanisation has helped them achiveing quality standards as per specification. The SMEs are facing a major problem in dealing with large buyers that is getting payment. Although by law they should be paid within 45 day of delivery of products, but this law is not honoured. The producers cannot seek legal respite due to the fear of losing customers. Only in cases of long pending payment, the complaints are lodged to their associations.

A manufacturer gets yarn on 7 days credit, but he has to sell the product to a buyer on 45 days credit that often is extended. With increasing interest rates his cash flow is severely squeezed and balance sheet gets upset. However, the price of yarn frequently increases as per the arguments made by knitwear association.

Many of the problems faced are similar to Tirupur but magnitude differs e.g. power supply problem, inadequacy of infrastructure, problem of labour availability and labour skill. There need for improving testing centre, design institute, and technical training institutes in Ludhiana cluster as well.

Kanpur

Kanpur is very old cluster of hosiery. But this cluster is not so well developed as Tirupur and Ludhiana. There are about 100 knitting, 270 stitching and 30 processing units in Kanpur. The cluster in the past was mainly known for the production of vest and underwear. But with the advancement of technique and development of infrastructure, the industry has gradually expanded to other wears such as winter inner garments with good bleaching & dyeing technique. Kanpur hosiery is now known for their value for money - cheap and best products. Most of the hosiery production presently takes place in non-composite small sized units. Most of the small/tiny units are run by entrepreneurs themselves. Most of the units in Kanpur also operate on jobwork. They mainly cater to the domestic market.

Here the grey yarn is imported from other states through traders / brokers and non-availability of yarn locally is major constraints. The yarn price fluctuates heavily. The units have very old conventional circular knitting machines like Sinker Body, Interlock Knitting Machine and Rib knitting machines. The speed of the machine is very low. The general housekeeping and maintenance of machine is not done properly. The unit owners are not showing much interest in high speed knitting machines and modernization. The bleaching system used is very old conventional type (Roller & Pond type).Very few do bleaching on Winches and without scouring. As the Central Pollution Control Board is not much strict, there is no problem of dying (with regard to pollution control regulations) here.

Marketing techniques adopted by many hosiery units are rather conventional and majority of the small/tiny units depend on middlemen. There is severe competition and tiny and small units invariably try to adopt undercutting to get orders, which benefits the trader. It is estimated that approximately 200 crores worth knitwear products are manufactured in Kanpur Hosiery cluster of which only 1 % is exported to Middle-East and Russia. Some brands like Jet, Shilpa, Udget, and Gaylord etc. are manufactured in Kanpur.

Cost Structure in Hosiery sector

As pointed out earlier in a hosiery unit knitting and garment making are the two most important operations as most of the other operations are given on jobwork to respective specialized units. Moreover, often knitting and garment making operation is also not integrated in one unit but done by separate units. Hence, here separate analysis will be done for knitting and garment making operations.

Coming to cost structure it can be seen that per kg cost of knitted cotton fabric is lowest in Kanpur at Rs. 176.59 and the highest in Tirupur at Rs. 182.78. The average yarn cost at Rs 151.72 in Tirupur also is the highest among the three clusters. Here the major reason for this is that quality of the knitted fabric produced in Tirupur is much higher as compared to other two clusters as most of the units located there are export oriented units. But it is to be pointed out here that this is only average cost and it will vary for different varieties of knitted fabric. It can be noted that wages per kg of fabric is lower in Tirupur than in Ludhiana but higher than Kanpur. There is also much variation in dying and processing cost. Besides, the units maintain a profit margin/overhead, which varies from 10 to 25% across units (not across clusters).

Summing up

Despite an early beginner in hosiery industry Kanpur could not take advantage of this. Similarly, hosiery industry started off in Ludhina during 1950s, this also is a as compared to Tirupur which took off in late 1970s. One of the reasons for sluggish growth in method of production and machinery used, which is mostly manually operated. In Ludhiana computer-aided designing/manufacturing is done of clothes for the domestic market are generally copied from magazines or from the samples provided by the buyers and there is not much originality involve in it. Tirupur, the proportion of women workers in comparison to men workers has another advantage low in case of Ludhiana and Kanpur, especially in the factories. It is attributed to lower availability of skilled women, the poor working environment in industries and availability of cheap migrant labour. Tirupur boasts of at least 70 per cent women workers in this segment. Women workers are more sincere, keep away from disputes and more efficient and promote a cordial working environment.

In case of knitting it was found that in Tirupur knitting is most capital intensive and while in Ludhiana it is most labour intensive. But as pointed out earlier Kanpur cluster uses the least modernized machines among the three clusters, this doesn't seem to be supported by the survey data. The units in Ludhiana are multi product firms, which in addition to cotton also produce woolen and synthetic fabric. In case of woolen fabrics, flat knitting machines are employed which needs higher amount of labour as compared to circular knitting machines. The productivity and labour intensity in using circular knitting machines used in both Ludhiana and Tirupur are almost same. That is why knitting in Ludhiana comes out to be more labour intensive as compared to the other two clusters. Besides labour productivity, productivity per machine is also much higher in Tirupur as compared to Ludhiana and

Kanpur. But if we come to wages to labour, this is higher (Rs.125) in Ludhiana as compared to Tirupur (Rs 110) for 8 hours (Table 3.4A). In Tirupur, knitting units run 24 hours a day but in the other two clusters they work for lesser number of hours.

From time to time, exports from Tirupur came under threat on issues of environment pollution and child labour. The slow pace of infrastructure development (it has picked up momentum now, fortunately) has been an obstacle to the town maturing into an international knitwear centre. Many entrepreneurs are content with catering to the lower end of the market on a contract-manufacturing basis. Its water sources are heavily polluted or have dried up altogether, unable to meet the demand. Fortunately, various projects are underway to improve the town's infrastructure. Things are definitely looking better now. One of these projects, just commissioned in 2006, is an innovative private / public partnership that has brought water and sewerage connections to the businesses and homes in Tirupur. A new town, called New Tirupur has been developed 12 km from the town.

3.5.3 Handloom Sector

In the textiles sector handloom segment enjoys a very special status. As this is the segment which provided the highest amount of employment in the non-farm sector before independence. The reasons behind this were that it required relatively less investment, provided individuals with gainful employment and was seen as ensuring self-sufficiency to people and it utilized the centuries of accumulated artisanal skill base of the weavers dispersed across the country. In the post independence period its share in both total fabric production as well as total employment in the textiles sector is declining. But it still supports the livelihood of a very large number of people. The decline in the share of handlooms in total production is associated with the rise of the powerloom sector.

Major difference in the product mix of handloom and powerloom is that piece materials for end use such as sarees, bed sheets, table mats, table linen, curtains, dusters, etc. are prepared at handlooms while yardage materials such as long cloth are produced at powerlooms. But many times powerlooms also produce the piece materials for end use. In this study we have covered 17 states producing handloom products. In these artisanal clusters a vast range of products are made from different varieties of fibres. Presently, synthetic fibres/yarns like viscose, polyester, acrylic, polypropylene fibres and filament, etc. are used along with the yarns of natural fibres like cotton, silk, wool and jute.

Most of the clusters/states have some specialization in specific products e.g. Nuapatna (Orissa) and Pachampally (Andhra Pradesh) in Ikat Sarees, Karur (Tamilnadu) and Bijnore (Uttar Pradesh) in home furnishings, Panipat (haryana) in Khes, Amritsar (Punjab) in woolen furnishings, Chennimalai-Erode (Taminadu) and Nalbari (Assam) in silk sarees.

Average size of the handloom units in most of the clusters is generally small or medium except Kerala where only medium and large sized units were found (large size is mainly due to existence of cooperatives). In Uttar Pradesh, Andhra Pradesh, Rajasthan and Karnataka mainly OAME and NDME operated units were found in the survey. Most of the surveyed units in Tamilnadu, Madhya Pradesh, Haryana, and Maharashtra were found to be either DME or medium sized units. In the states of Orissa, Kerala, Assam and Tamilnadu handloom cooperatives are found, which have very large membership due to which some very large size of the units are shown.

In case of cooperatives, members have their looms at their homes and operate from there. Their entire yarn requirement whether dyed or grey is met by the cooperatives. Similarly, the members don't have to worry about the marketing of their products as they have to supply the finished product to the cooperative itself. In the states like Tamilnadu and Kerala where the cooperatives are functioning very well, payment is made at the moment of supply of the product to the cooperative. But in other states like Orissa, the payment for the products is often made latter have to take recourse to local buyers or middlemen for making their needs. In these states cotton yarn is procured by cooperatives from National Handloom Development Corporation and some other agencies. For silk yarn handloom cooperatives in Tamilnadu depend on Tamilnadu Silk Producer Coop. Federation. In Delhi it was found that there are units that were earlier used to be cooperatives but now they don't function like cooperatives but are owner managed and operating under one shed. Other members either remain dormant or work as a labourer. But these units are still registered as a cooperative and receiving all the benefits provided by government cooperatives.

In Tamilnadu some household units were found which were earlier member of some cooperative but later left the membership. As over a period of time they seem to have graduated to work independently and in fact earn more profit by independently doing job work. Being processing the trade secrets, they can get the hank yarn easily and market their products. However, they can't avail the loan facility that is provided by cooperatives to its members.

A few handloom units in Coimbatore, cluster Tamilnadu are engaging themselves to prepare models of some products e.g. bedsheets, towel, saree, etc. with various designs on a jobwork basis, which are latter on replicated on a large scale in powerloom sector. These models (products) are made in a very limited quantity in the handloom units. The buyer will select from the models and then production of it takes place on a large scale in powerloom sector. This is a cost saving mechanism as, model is on a powerloom can't be produced in one or two pieces rather it will make 10-12 pieces that will not be cost effective.

This is to be pointed out that no handloom unit in the survey had awareness about TUF scheme which provides 25% capital subsidy on purchase of the new machinery and equipments for the pre-loom & post-loom operations, handlooms/up-gradation of handlooms and testing & Quality Control equipments for handloom units. Therefore, efforts are not yielding results in case of handloom sector. The government should popularize this scheme through the mass media and various government agencies and repackage the scheme to have better reach and accessibility.

As pointed out earlier handloom sector are a very labour intensive sector, quality and production per day from a loom very much depends upon the skill of the labour. Labour intensiveness can be seen from the main worker required per loom in the Table3.7A which is 1. In addition at least one supplementary worker is also required per loom to do pre and post-loom activities. But even if a labour is very skilled they hardly can meet their both ends meet, the reason behind this being low wages. In most of the product ranges they have to compete with powerloom units which have a very high productivity per loom and so cost of the products becomes very low. Therefore, handlooms also have to offer prices of the products in the similar range to remain in the market. In the cost cutting exercise the handloom units end up with very low wages as compared to powerloom units. In OAME and NDME kind of units low wages means low income of unit. In many clusters, the units are also employing female weavers and helpers due to scarcity of male weavers, at prevailing low wages. The female workers change less then male workers. Large variation in the wage rate has been observed across states and quite often estimated to price rate payments. The data in Table 3.7A show the estimated wages per day even for the cases where price rate in the wages of payment. In case of family labour, opportunity cost is taken into account. The estimated wage rate is Rs. 156 in case of Tamilnadu, Rs 80 per day in case of Orissa, Rs.50 per day in case Andhra Pradesh (Table 3.8A).

The biggest problem is lack of any formal training courses/ programme or institute for the aquaring skill in hanloom sector. Most of training is thus through informal process on job trining from father to son or to other family member. As child grows up in a weaver family the informal training process starts as he watches the process of fabrics production both at home and in the neighborhood. At times he has to do certain handloom related errand and over time becomes a skilled weaver. The child however is legally allowed only in a family owned unit. However information gathered from Delhi, Karur and Erode (Tamilnadu) clusters indicate that in handloom weares family members are not interested to carry over the family tradition nor or handloom weares interested to pass it on the business to their young generation.

In clusters like Karur in Tamilnadu, handlooms units are coming up with new products that are not made the powerlooms units. e.g. using both cotton yarn along with khas (a plant product) to make

durries and curtains. Similarly, smaller pieces of products like dusters, gamachhas, etc. are produced as hanloom have a comparative advantage over powerlooms in such products of small length.

In most of the clusters handloom units work per 8-10 hours a day, and at least stressed to12 hours. The weares who possess agricultural land, 8-10 hours work a day is not a regular phenomenon in rural areas during agricultural season. During those periods their weaving activity becomes very irregular. In Ernakulam (Kerala) the weavers run handlooms when they are not able to find any other work, hence average working hours a day comes out to be only 4 hours. Number of days devoted to weaving activity is less than 253 days in a year in Kerala states.

The production of fabric per loom per day made varies fibres-wise. Generally production per loom for cotton and cotton-synthetic blended fabric is higher compared to silk and wool fibres (Table 3.7 A). Average production of silk saree per loom a day found from the surveyed units is 7 sq. mt. in Tamilnadu and Gujarat while in case of cotton sari it is 19 and 13 sq. mt in West Bengal and Maharashtra respectively. Accordingly, the annual production per unit varies across clusters subject to size of the unit and other constraints.

The most important component in the handloom fabrics cost structure is yarn cost and wages. Auxiliary material is also important, which includes warping, dying, processing, packaging cost etc. Apart from difference in fibre, the source of purchase of yarn, quality of yarn, quantum of purchase, are important. also matter a lot. In the states where handloom cooperatives are well functioning e.g. in Tamilnadu and Kerala, members have no problem in getting grey yarn/dyed yarn and the prices are also comparatively lower than that from open market or middlemen/master weaver. As regards wages, per sq. mt. wages for woolen and silken products are higher compared to cotton products. The former require more time and skill. Many other factors also contribute to wage differences across units, clusters and products. As handloom is manually operated, no electricity is required in running the looms.

In recent years, silk producing handloom units are facing very severe competition from powerloom sector especially because of cheap availability of imported silk yarn from China, which is better suited for production in powerloom sector compared to handloom sector. Apart from competition from powerloom sector, silk fabric is also imported from Chinna which on an average costs $1.15 per meter compared to Indian handloom costs of $2.5-4 per meter (The Hindu, Feb. 1, 2009). Earlier, in Banaras (Uttar Pradesh) cluster, most of the weavers in Banaras were earlier using Bangalore silk. Now, 60% of the silk used is importd from China. The local Banarsi sari traders in Varanasi called *gaddidars* prefer to sell cheap powerloom sarees and earn higher profits to by selling more. Many of these *gaddidars* own their powerlooms also. The skills of the traditional handloom weaver are not valued

and they are forced to sell at low rate. The stiff competition from importers and powerloom sector is costing the handloom weavers dearly.

The problem faced by export oriented handloom clusters, is the stiff non tariff barriers restriction. The buyers make frequent objections to even use of family child labour, livestock rearing is near the location of looms in household unit. On the suspension that it can affect quality. The other problem faced by handloom weavers include non properly implementation of Government scheme, dormant members taking benefits of handloom cooperatives schemes in the states of Tamilnadu and Delhi by those who no longer own looms.

If handloom sector is to withstand the competition from powerloom sector there is an urgent need for handloom upgradation. There is also need to increase the varieties of designs and modernize the dying and processing activities. It is also required to strengthen the handloom cooperatives and remove the loopholes in government schemes in the states where it is not properly functioning.

3.5.4 Apparel

The estimates derived using ASI and NSSO data on unorganized manufacturing sector show that 1.585 lakh units are involved in commercial apparel activity, while 16 lakh are involved in custom tailoring. The segment has been playing a very important role in meeting the clothing needs of the people. Presently, market share of Indian readymade garments in total apparel exports is about 3.4% with the rank of fifth largest garment exporter in the world. The Apparel Sector alone contributes to 8% of India's total exports (Source: Apparel Export Promotion Council). However, if we compare between woven and knitted apparel, export share of woven apparel is much less than that of knitted apparel.

Woven garments are made in almost every city and town of the country through custom tailoring. But these units are very small (with number of machines less than 5 in most of the units) with manually driven stitching machines. These are mostly run by local tailors as small enterprises. They cater to very small number of individuals/families. They don’t supply to wholesalers/retailers. The use of knitted fabric by small enterprises is very rare. Knitted garments are mainly produced in medium and large garment units. This is particularly important as wastage is high in case of one-two pieces production, which got minimised/economised when scale increases. As discussed earlier, this study focuses on commercial apparel activity undertaking place on reasonably large scale.

The estimates derived using ASI and NSSO data on unorganized manufacturing sector show that 1.585 lakh units are involved in commercial apparel activity. Most of the commercial apparel activity is also carried out in small scale units. Out of the total 1.585 units, OAME units account for 1.05 lakh

enterprises, NDME 23973 and DME 17850. Thus only 12035 units belong to small to medium, medium and large segment involved in commercial apparel manufacturing. Out of these 12035 units, 1126 are run without the aid of power and remaining 10909 are run with the aid of power. The focus of this section is on the analysis of these 10909 commercially owned small to medium, medium and large units, which are run with the aid of power and are involved in commercial apparel manufacturing activity.

Out of the total turnover of wearing apparel units for both factory and non-factory sector of Rs 65060 crore during 2005-06, the turnover excluding custom tailoring accounts for Rs 50850 crore. However in case, the production by OAME, NDME, DME units is excluded, the turnover of the remaining small to medium, medium and large units for commercial apparel related activity accounts for Rs 44520 crore. In this the production of 1126 units running without the aid of power is estimated at approximately 520 crore. Thus the production of 10909 commercially owned small to medium, medium and large units, which run with the aid of power and are involved in commercial apparel manufacturing activity is estimated at Rs 44000 crore during 2005-06.

The estimated turnover of wearing apparel units for both factory and non-factory sector is estimated at 105165 crore during 2008-09.

The estimates derived using ASI and NSSO data on unorganized manufacturing sector show estimates of employment of around 5.47 million in apparel sector during 2005-06. The estimates derived using NSSO data on employment and unemployment using 61st round are 7.34 million people engaged in garment sector. In case, the custom tailoring is excluded, commercial apparel activity accounts for only 1.28 million employees (ASI & NSSO data on unorganised manufacturing sector). The employment generation among 10909 commercially owned small to medium, medium and large units, which run with the aid of power and are involved in commercial apparel manufacturing activity is estimated at only 0.685 million.

In the present sample survey, the seven major woven garment clusters namely- Okhla (Delhi), Noida (Uttar Pradesh), Bangalore (Karnataka), Ahmedabad (Gujarat), Mumbai (Maharashtra), Jabalpur (Madhya Pradesh), and Madurai (Tamilnadu) were covered. Among these clusters, Noida, Okhla and Bangalore significance presence of export oriented units. Knitted garment clusters included in our sample survey are Tirupur (Tamilnadu), Ludhiana (Punjab) and Kanpur (Uttar Pradesh). Among the knitted garment clusters Tirupur is the most important exports among clusters producing knitted products. This is followed by Ludhiana. Kanpur mostly caters to the domestic market.

The garment clusters produce different varieties of readymade garments e.g. shirt, pant, ladies suit, salwar, skirt, top, blouse, T-shirt, brief, vest, socks, pullover, stockings, kids wear etc. (Table 3.10A) . Quality of garment varies across different clusters depending upon the quality of fabric and accessories used. Generally, in the same cluster there is homogeneity in the type of products made. Most of the units seem to be of large size. But relatively smaller sized units are found in Madurai, Jabalpur, Mumbai having average size of the surveyed units being 38, 7 and 22 machines respectively.

The employee per machine ratio is estimated at 1.25 on an average. Generally, one worker runs one machine. The others work as a helper, cloth cutter and for ironing and packaging of cloths etc. In a typical garment unit various types of machines are used for stitching fabric and putting accessories. The capacity into utilization is a trichy concept. Even if a unit has adequate work, to its capacity all the machines can not be engaged troughout. Only single needle and multiple-needle machines can run full time. Other machines like overlock machine, cauze machine, button machine, etc. are engaged as per their requirement. The most of machines (as per information collected) are survey data power driven. The medium and large garments units are engaged from in assembly line work by stitching various parts of a piece of garment and fixing accessories on these. This raises the productivity of units by increasing number of pieces made per machine, while small unit end up due slow labour intensive work. The average number of pieces made per machine also depends on the quality of the garment being produced. Higher quality garment pieces require more time. Labour skills and machine productivity (here pieces made per machine in 8 hours) also matter in this regard. Variation in pieces made per machine can be seen in the Table 3.10A.

It is observed that productivity per machine in knitted garment unit is much higher than in woven garment units (Table 3.10A). On an average, in 8 hours per machine, shirt pieces made are 8 in Karnataka and 13 in Tamilnadu, pant piece made are 6 in Gujarat and 11 in Tamilnadu, kids wear made 11 in Delhi and 13 in Uttar Pradesh. Production in Tamilnadu, Delhi and in Uttar Pradesh is on the high side as compare to other states.

In most of the clusters workers are paid wages per piece basis rather than per day basis and rate vary for different products and different parts of garment. Variations in average wage rate exist across clusters in the data in Table 3.10A. Most of the surveyed woven garment units work for 8-10 hours a day while knitted garment units work around 12 hours a day with one labour shift, this is unlike powerloom and knitting units which in many cases run 24 hours a day. A few units recruit worker trained through ITI or other institutions. In Noida cluster it was found that some skilled workers impart training to new labourers on payment during their leisure time at home. This is an informal arrangement of training. In most of the units the workers are getting on job training by first joining work as helper and then graduated within 2-3 years as skilled workers. The lack of properly trained

worker after the productivity, but due to scarcity of workers during peak season, units functions with the given constraints.

Most of the units are found to be working on jobwork basis. Under this arrangement they receive the fabric and design etc. from the buyers and receive a pre-decided amount per piece. This amount also covers the cost of accessories and packaging cost in addition to labour cost and overheads. Sometimes, the fabric is not supplied by the buyer but a sample piece of garment is given to the garment unit, and accordingly the latter makes purchases of fabric from wholesalers/powerlooms. In this arrangement garments are supplied with the buyers' label (brand). Some large units in Bangalore and Ahmedabad cluster sell with their own brand name also. There is another category of small units also in Madurai and Okhla, which make garments on their own initiative according to their capacity and sell locally to wholesalers/retailers of garments. Further, there are units, which work on both jobwork and on their own also. Many of the knitted garment units in Tirupur and Ludhiana are integrated units, hence they don't have to purchase fabric from outside but these units have to get dying and processing work on fabric done from outside. They do both knitting and garment making work on the basis of jobwork.

In Noida, Tirupur, Ludhiana, Okhla and Bangalore clusters, most of garment manufacturers use modernized machines. It was also found that bigger units use more advanced technology as compared to small size units and are major beneficiaries of the TUF scheme. The modalities for availing TUFS are better suited for large size units compared to small size units. Many large units have separate designing department and get support from institutions like National Institute Fashion Technology (NIFT). These larger units use Computer Added Design (CAD) and Computer Added Manufacturing (CAM) to improve the quality of their garments. Some other units rely on internet for getting modern designs. Medium and small units mainly depend on buyers for supply of design.

Cost Structure

The average cost of production among various clusters of differ as quality of fabric, design, accessories used, quality of labour differ. The other factors affecting the cost of production such as cost of power, transport & communication, maintenance on machines, etc also differ.

In manufacturing a modal shirt, fabric cost varies from Rs. 119.2 per piece in Tamilnadu to Rs. 136.4 per piece in Gujarat, whereas in making a trouser fabric cost varies from Rs. 124.1 per piece in Karnataka to Rs. 145 in Maharashtra. Similarly, in making T-shirt, fabric cost varies from Rs. 64 per piece in Tirupur to Rs. 35 in Ludhiana; whereas in manufacturing an undergarment, fabric cost varies from Rs. 5 in Tirupur to 10 per piece in Kanpur. In preparing a vest fabric cost varies from Rs. 6 in Tirupur to Rs. 11 in Kanpur. The fabric cost of T-shirt is higher in Tirupur as most of the surveyed units are engaged in exports for which they need superior quality fabric. Fabrics cost per piece depends

on the quality and weight of the fabric. Wage cost per piece much depends upon the product that the worker is making and skill required for that (Table 3.11A).

The purchase price of fabric depends on several factors. If the fabric has been purchased from powerloom units it costs less and if it has been purchased from agent or retailers it costs more. Similarly, if the fabric purchased in bulk directly from mills or wholesalers it costs less and if it is purchased in small quantities from wholesalers/retailers it costs more.

Wage cost per piece much depends upon the product that the worker is making. For making a trouser more labour time and skill is required and hence wages per piece becomes higher as compared to labour cost in making the other product like shirt and kids wear. The secracity of labour is another important factor determining the labour cost. The presser of trade unions in the cluster is another important factor in determining the wage rates.

Power cost per unit also varies across clusters. In case of shirt it varies from Rs. 2.5 per piece in Tamilnadu to Rs.3.5 in Delhi (Table 3.11A). Similarly, variation in transport & communication and machine maintenance cost also affect per piece cost (Table 3.11A). Profit margin/overheads vary from 15-30% across clusters, which in turn depend upon market conditions.

Problems and Policy Implications

Almost all the clusters are facing severe power availability problem, which is affecting the total production of the smaller units not having power backup. In the case of large units more power cuts affects their profit margins and hence their competitiveness in the international market as they have to resort to their own power generating resources which are generally costlier than power supply from State Electricity Boards.

Modernization of machines is major issue in most of the clusters particularly with the small units. Many operations are still performed manually in most of the units which leads to variation in the quality of different pieces. This leads to increase in rejections in export consignments. In this regard TUFS has not as successful toward small units as compared to large units. Lots of paper work and formalities discourage small units to approach banks for availing TUFS. These need to be taken into consideration as small scale sector seems to have definite edge in Textile and Clothing sector and modernization in this sector is crucial for the overall growth of this sector.

In some clusters like Jabalpur manufacturers are facing problems of availability of good quality accessories. In Madurai small units are much scattered geographically and they also face problem of limited space. So, even if they are eager to pool some of their resources for installing a common gen-

set or procurement of raw material in large quantity or economics or reduce some other negative externalities, they can't do so because of distant locations. So there is a need for apparels park for small unit as well as on the line of larger units through which homogeneous units can be located together at one place.

Some medium sized units in Madurai despite being keen on selling their product in the export market, they are not able to export due to not having information about proper channel of export. Hence, they are confined to domestic market. Such types of units should be given proper assistance by set up like Apparel Export Promotion Council (AEPC). The problem of non-recovery of dues after delivery the problem of cancellation of orders due to delay caused due to lack of infrastructure are some of important issues. AEPC should guide the units trapped in such types of problem.

The government should develop infrastructure for massive tranining programmes. This should be on a public-private partnership module so that it can run on a sustainable basis. In this regard the government should also consult the industry associations of both large as well as small units. Developing hostels for labourers could address the accommodation problem in labour deficient clusters. Government should build hostels with the help of small sector industry associations. It will also help reduce the expansion of slums in urban areas.

Table 3.11
Production Related Information in Powerloom Sector at India Level

Number of worker	1						2-5					
Type of fabric	Synthetic			Silk			Cotton			Synthetic		
Varieties produced	Dhoti, saree			Saree			Dhoti, saree, long cloth, bedsheet			Saree		
Parameter	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
number of loom	1	1	1	1	1	1	3	2	4	3	2	5
Pro sq. mts./ year/ unit	9018	3900	14136	13671	12834	14508	45069	17550	132000	28600	7800	52000
pro sq. mts./ day/ unit	29	12	46	44	41	47	136	59	528	93	24	173
pro sq. mts./ loom/ year	9018	3900	14136	13671	12834	14508	14093	4500	33000	9657	2600	26000
pro sq. mts./ loom/ day	29	12	46	44	41	47	43	15	132	31	8	87
pro sq. mts./ worker/ shift/ day/ unit	17	12	23	22	21	23	41	17	132	31	8	87

No. of worker/ unit	1	1	1	1	1	1	3	2	4	3	2	5
No. of worker required / loom/ day/ shift	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
working days/ year	305	300	310	310	310	310	332	250	365	311	300	325
Wage/ day/ shift	175	100	250	100	100	100	89	55	150	250	250	250
working hrs/ day	13	10	16	16	16	16	10	8	16	10	10	10
Number of units	2			2			53			14		

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Table 3.11
Production Related Information in Powerloom Sector at India Level

Number of worker	2-5								
Type of fabric	Wool			Cotton blended			Silk		
Varieties produced	Blanket, shawl			Dhoti, towel, lungi			Saree		
Parameter	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
number of loom	3	2	5	4	2	5	3	2	4
pro sq. mts./ year/ unit	136232	43576	305633	66576	29016	144000	40585	23469	84456
pro sq. mts./ day/ unit	453	141	1019	208	94	400	131	94	235
pro sq. mts./ loom/ year	49974	10894	90000	19439	11136	36000	13949	10800	21114
pro sq. mts./ loom/ day	166	35	300	60	38	100	46	36	59
pro sq. mts./ worker/ shift/ day/ unit	166	35	300	56	21	100	30	20	59
No. of worker/ unit	3	2	5	4	2	5	3	2	4
No. of worker required / loom/ day/ shift	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
working days/ year	303	300	310	315	290	360	301	250	360
wage/ day/ shift	148	133	150	99	50	200	96	65	150
working hrs/ day	10.91	10	14	10.91	8	16	15.14	12	16
Number of units	11			11			7		

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Table 3.11
Production Related Information in Powerloom Sector at India Level

Number of worker	6-10											
Type of fabric	Synthetic			Cotton			Wool			Cotton blended		
Varieties produced	Saree			Dhoti, bedsheet, gamchas, gray fabric			Blanket, loi, shawl			Saree, lingi, dhoti		
Parameter	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
number of loom	8	6	10	8	6	10	8	6	10	8	6	10
pro sq. mts./ year/ unit	49364	4550	147068	271831	40500	472245	163615	68796	286990	97788	66600	144000
pro sq. mts./ day/ unit	159	15	474	969	135	1816	544	246	957	330	222	480
pro sq. mts./ loom/ year	5930	569	16341	32946	4050	59031	21043	10496	32486	12402	10752	14400
pro sq. mts./ loom/ day	19	2	53	118	14	227	70	35	108	42	37	48
pro sq. mts./ worker/ shift/ day/ unit	19	2	53	67	14	114	68	20	108	42	37	48
No. of worker/ unit	8	6	10	8	4	10	8	6	10	8	6	10
No. of worker required / loom/ day/ shift	1.0	1.0	1.0	0.9	0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0
working days/ year	314	300	350	286	260	310	300	280	310	297	280	300
wage/ day/ shift	235	120	250	162	100	275	139.27	100	150	136	100	200
working hrs/ day	10	10	10	18.12	8	24	10.73	10	16	8.67	8	10
Number of units	19			17			11			6		

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Table 3.11

Production Related Information in Powerloom Sector at India Level

Number of worker	11-20											
Type of fabric	Synthetic			Wool			cotton			cotton blended		
Varieties produced	Saree, bedsheet, gray fabric			Blanket			Dhoti,saree, bedsheet, dress material, long cloth, gamcha			Saree, long cloth		
Parameter	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
number of loom	14	12	20	13	12	15	16	11	20	16	12	20
pro sq. mts./ year/ unit	202013	9100	405918	251765	59510	632549	337039	123420	720000	195600	130680	273600
pro sq. mts./ day/ unit	688	28	1353	832	198	2108	1152	411	2724	652	436	912
pro sq. mts./ loom/ year	14816	569	27220	18028	4959	42170	22555	7443	58718	12429	10500	15300
pro sq. mts./ loom/ day	51	2	95	60	17	141	77	25	214	41	35	51
pro sq. mts./ worker/ shift/ day/ unit	31	2	53	60	17	141	53	25	107	41	35	51
No. of worker/ unit	14	12	16	13	12	14	12	11	14	12	12	15
No. of worker required / loom/ day/ shift	1.0	1.0	0.8	1.0	1.0	0.9	0.8	1.0	0.7	0.8	1.0	0.8
working days/ year	300	280	325	304	300	310	297	250	320	300	300	300
wage/ day/ shift	159	90	250	167	150	233	156	90	220	154	100	180
working hrs/ day	16.72	10	24	10.2	9	12	14.87	8	24	9	8	10
Number of units	25			5			39			10		

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Table 3.11

Production Related Information in Powerloom Sector at India Level

Number of worker	21-50											
Type of fabric	Cotton			Wool			Synthetic			cotton blended		
Varieties produced	Dhoti, saree, bed sheet, dress material, long cloth, gamcha			Blanket, shawl			Bedsheet, gray fabric			Bedsheet, dhoti, saree		
Parameter	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
number of loom	35	21	50	25	21	30	28	21	48	34	22	48
pro sq. mts./ year/ unit	637033	120000	1560000	390049	287599	669375	594991	326817	1074857	435711	261360	673920
pro sq. mts./ day/ unit	2131	400	4875	1278	928	2231	2042	1054	3839	1462	871	2246
pro sq. mts./ loom/ year	19043	4800	46263	15610	13073	22313	20874	16341	28355	12625	10560	14136
pro sq. mts./ loom/ day	64	16	154	51	42	74	71	53	95	42	35	47
pro sq. mts./ worker/ shift/ day/ unit	47	15	104	51	42	74	45	36	56	42	35	47
No. of worker/ unit	25	21	46	22	21	22	22	21	25	24	21	35
No. of worker required / loom/ day/ shift	0.7	1.0	0.9	0.9	1.0	0.7	0.8	1.0	0.5	0.7	1.0	0.7
working days/ year	293	200	320	307	300	310	295	280	310	298	260	310
wage/ day/ shift	147	90	220	158	116	233	125	100	200	138	100	200
working hrs/ day	13	8	24	10	10	10	19	10	24	9	8	10
Number of units	82			6			12			18		

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Table 3.11

Production Related Information in Powerloom Sector at India Level

Number of worker	>50					
Type of fabric	Cotton			Cotton blended		
Varieties produced	Dhoti, dress material, long cloth, bed sheet			Dhoti		
Parameter	Avg.	Min.	Max.	Avg.	Min.	Max.
number of loom	78	52	120	78	75	80
pro sq. mts./ year/ unit	1187473	597168	4320000	820650	712500	928800
pro sq. mts./ day/ unit	3894	2059	13500	3145	2850	3440
pro sq. mts./ loom/ year	14139	10511	36000	10555	9500	11610
pro sq. mts./ loom/ day	47	35	113	41	38	43
pro sq. mts./ worker/ shift/ day/ unit	42	35	56	54	52	55
No. of worker/ unit	63	51	80	59	55	62
No. of worker required / loom/ day/ shift	0.8	1.0	0.7	0.8	0.7	0.8
working days/ year	300	290	320	260	250	270
wage/ day/ shift	144	100	180	125	120	130
working hrs/ day	11	8	24	10	10	10
Number of units	11			2		

Source: Primary survey conducted by NCAER in 2008-09

Table 3.12
Production Related Information in Handloom Sector at India Level

Number of worker	1											
Type of fabric	Cotton			Cotton blended			Silk			Synthetic		
Varieties produced	Bedsheet, durrie, saree, duster			Bedsheet, durrie			Saree			Saree		
Parameter	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
number of loom	1	1	1	1	1	1	1			1	1	1
pro sq. mts./ year/ unit	2500	1000	14040	2496	1920	2880	2381			11050	7800	11700
pro sq. mts./ day/ unit	14	3	40	8	6	9	7			32	22	33
pro sq. mts./ loom/ year	2500	1000	14040	2496	1920	2880	2381			11050	7800	11700
pro sq. mts./ loom/ day	14	3	40	8	6	9	7			32	22	33
pro sq. mts./ worker/ shift/ day/ unit	14	3	40	8	6	9	7			32	22	33
No. of worker / unit	1	1	1	1	1	1	1			1	1	1
No. of worker required / loom/ day/ shift	1	1	1	1	1	1	1			1	1	1
working days/ year	321	300	350	320	320	320	320			350	350	350
wage/ day/ shift	74	40	150	68	60	70	200			52	50	60
working hrs/ day	11	8	16	12	10	12	8			11	10	12
Number of units	24	-	-	5	-	-	1	-	-	6	-	-

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Table 3.12
Production Related Information in Handloom Sector at India Level

Number of worker	2-5											
Type of fabric	Cotton			Wool			Synthetic			Silk		
Varieties produced	Bedsheet, duster, gamchas, durrie, saree			Shawl, blanket, muffler			Saree			Saree		
Parameter	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
number of loom	4	2	5	3	2	5	3	2	4	4	2	5
pro sq. mts./ year/ unit	20568	2000	41172	7964	2147	20022	22740	15600	39000	12672	3250	39000
pro sq. mts./ day/ unit	74	7	179	32	8	77	70	45	111	37	11	111
pro sq. mts./ loom/ year	5409	1000	10293	2614	1073	5400	7970	6700	9750	3659	780	7800
pro sq. mts./ loom/ day	19	3	45	11	4	23	24	22	28	11	3	22
pro sq. mts./ worker/ shift/ day/ unit	19	3	45	11	4	23	24	22	28	11	3	22
No. of worker / unit	4	2	5	3	2	5	3	2	4	4	2	5
No. of worker required / loom/ day/ shift	1	1	1	1	1	1	1	1	1	1	1	1
working days/ year	289	230	350	250	240	260	330	250	350	323	300	350
wage/ day/ shift	92	40	160	110	100	120	72	60	120	87	50	180
working hrs/ day	9	8	16	8	8	10	11	8	12	10	8	12
Number of units	53	-	-	14	-	-	5	-	-	6	-	-

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Table 3.12
Production Related Information in Handloom Sector at India Level

Number of worker	6-10											
Type of fabric	Cotton			Wool			Synthetic			Silk		
Varieties produced	Bedsheet, long cloth, durrie, duster			Shawl, loi			Bedsheet, long cloth, saree			Saree		
Parameter	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
number of loom	7	6	10	8	6	10	8	6	10	10	10	10
pro sq. mts./ year/ unit	45052	7000	102931	21087	14063	26917	51823	36622	70875	11965	7800	23808
pro sq. mts./ day/ unit	170	23	448	88	59	112	188	134	239	39	26	74
pro sq. mts./ loom/ year	6421	1000	16703	2607	2344	2785	6626	4566	7875	1196	780	2381
pro sq. mts./ loom/ day	24	3	45	11	10	12	24	18	30	4	3	7
pro sq. mts./ worker/ shift/ day/ unit	24	3	45	11	10	12	24	18	30	4	3	7
No. of worker / unit	7	4	10	8	6	10	8	6	10	10	10	10
No. of worker required / loom/ day/ shift	1	1	1	1	1	1	1	1	1	1	1	1
working days/ year	272	220	325	240	240	240	278	250	350	305	300	320
wage/ day/ shift	105	40	230	120	120	120	107	60	120	88	50	200
working hrs/ day	9	8	12	8	8	8	10	8	12	10	8	10
Number of units	56	-	-	3	-	-	9	-	-	4	-	-

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Table 3.12

Production Related Information in Handloom Sector at India Level

Number of worker	11-20											
Type of fabric	Cotton			Cotton blended			Cotton, silk			Silk		
Varieties produced	Saree, bedsheet, durrie, long cloth			Bedsheet, durrie, saree			Saree			Saree		
Parameter	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
number of loom	15	11	20	18	12	20	16	12	20	17	12	20
pro sq. mts./ year/ unit	76773	10000	146565	103587	37760	167025	33460	14800	47616	17674	13000	28570
pro sq. mts./ day/ unit	264	33	412	349	126	557	105	49	149	58	43	89
pro sq. mts./ loom/ year	5136	909	8142	5503	2266	8351	2032	987	2381	1117	650	2381
pro sq. mts./ loom/ day	18	3	28	19	8	28	6	3	7	4	2	7
pro sq. mts./ worker/ shift/ day/ unit	18	3	28	19	8	28	6	3	7	4	2	7
No. of worker / unit	15	11	20	18	12	20	16	12	20	17	12	20
No. of worker required / loom/ day/ shift	1	1	1	1	1	1	1	1	1	1	1	1
working days/ year	294	250	360	296	260	300	315	300	320	304	300	320
wage/ day/ shift	104	30	170	134	90	150	146	80	185	76	50	180
working hrs/ day	9	8	10	9	8	10	9	8	10	9	8	10
Number of units	29	-	-	9	-	-	4	-	-	5	-	-

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Table 3.12

Production Related Information in Handloom Sector at India Level

Number of worker	21-50											
Type of fabric	Cotton			cotton blended			Silk			cotton, silk		
Varieties produced	Saree, durrie, bedsheet, dress material			Bedsheet, durrie, saree			Saree, dress material			Saree, dress material		
Parameter	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
number of loom	33	23	50	37	25	50	38	25	50	33	26	45
pro sq. mts./ year/ unit	196645	75613	305344	162170	67968	472000	49260	39000	59520	45063	29950	59850
pro sq. mts./ day/ unit	619	252	956	542	227	1573	158	130	186	150	100	200
pro sq. mts./ loom/ year	6076	1936	10178	4231	2266	10489	1580	780	2381	1422	998	2302
pro sq. mts./ loom/ day	19	6	30	14	8	35	5	3	7	5	3	8
pro sq. mts./ worker/ shift/ day/ unit	19	6	30	14	8	35	5	3	7	5	3	8
No. of worker / unit	33	23	50	37	25	50	38	25	50	33	26	45
No. of worker required / loom/ day/ shift	1	1	1	1	1	1	1	1	1	1	1	1
working days/ year	315	250	360	299	289	300	310	300	320	300	300	300
wage/ day/ shift	104	65	220	130	75	150	123	80	165	80	80	80
working hrs/ day	9	8	12	10	8	10	8	8	8	11	10	12
Number of units	13	-	-	12	-	-	2	-	-	4	-	-

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Table 3.12

Production Related Information in Handloom Sector at India Level

Number of worker	51-100									>100		
Type of fabric	Cotton			Cotton blended			Silk			cotton		
Varieties produced	Saree, durrie, dress material			Durrie, gamchas			Saree, dress material			Durrie, dress material		
Parameter	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
number of loom	76	55	90	78	55	100	79	57	100	128	106	150
pro sq. mts./ year/ unit	242470	120400	371542	243736	215600	271872	64786	38000	91572	293233	246625	339840
pro sq. mts./ day/ unit	830	401	1429	838	770	906	216	127	305	977	822	1133
pro sq. mts./ loom/ year	3386	1505	5359	3319	2719	3920	791	667	916	2296	2266	2327
pro sq. mts./ loom/ day	12	5	18	12	9	14	3	2	3	8	8	8
pro sq. mts./ worker/ shift/ day/ unit	12	5	18	12	9	14	3	2	3	8	8	8
No. of worker / unit	76	55	90	78	55	100	79	57	100	128	106	150
No. of worker required / loom/ day/ shift	1	1	1	1	1	1	1	1	1	1	1	1
Working days/ year	305	260	360	290	280	300	300	300	300	300	300	300
wage/ day/ shift	126	75	230	105	80	130	80	80	80	105	80	130
Working hrs/ day	9	8	10	10	10	10	12	12	12	11	10	12
Number of units	4	-	-	2	-	-	2	-	-	2	-	-

Source: Primary survey data conducted by NCAER in 2008-09

Chapter 4: Domestic Demand Pattern of Textiles and Clothing

This chapter analyses the changes in pattern of domestic demand for textiles & clothing goods. In order to understand the responsiveness of the consumer to income and price changes the income (or more specifically expenditure) and price elasticities are estimated. The chapter is divided into six sections: In Section 4.1, the change in consumption of various textiles items is anlysed using Textile committee data on household purchase. In Section 4.2, the estimates of per capita purchases of various textile using textile committee data are compared with similar estimates using NSSO (61st round) data. In Section 4.3, the expenditure and price elasticities are estimated using NSSO consumption expenditure survey, 61st round data for year 2004-05. In Section 4.4, these elasticities are applied on the base year data 2007-08, to estimate projections for domestic demand for the period 2007-08 to 2011-12 and 2007-08 to 2015-16. Section 4.5 studies the retailing activity in Textile and Clothing sector in India. Section 4.6 studies the average number of intermediaries involved and their margins at each stage based on small NCAER field survey data.

4.1 Trend in Consumption of Various Textiles Items

4.1.1 Concepts and definitions - for Various Categories of Textiles

The data used in this section analyse the per capita purchases of different textile products over time using Consumer Purchases of Textiles data, Volume II, for year 1990, 2000 and 2006.

Household purchases of various textile items are broadly classified into three categories:

Woven Items

Household Items (Made-ups)

Items that are meant for the common use for all members of the family are categorized as household items. In other words, the items, which are not purchased for a particular family member but are generally used by all members for furnishing, tapering etc. are, called household items. The prominent items are towels, bedsheets, mattresses, decorative items, wall hangings etc and is also popularly known as made ups.

Fabrics

Items purchased for further stitching falls under this category. Fabric purchased for stitching of pants, shirts, petticoats etc can be classified into

- Piece length items
- Garment items
- Garment in piece length items

Piece Length Items
The items that are bought in running length are defined as piece length items. Piece need to be stitched before it can be used for dress. For example, shirting, suiting, long cloth etc that are purchased in meters or yards and their got stiched.

Garment Items
These are ready to use items and are sold after stitching process. These items are purchased in numbers and the size of the item varies according to the age and physique of the individual. For example, readymade shirts, pants, Baba suits, banians, etc.

Garment in Piece length
The items which are purchased in numbers but of varying running length and width are classified as garment in piece length items. These items do not require stitching for further use. For example Saree, Dhoti, etc.

Knitted or hosiery Fabric/Garments
The textile items in general can be classified into woven or knitted products. A fabric produced by the process of weaving i.e., fabric constructed by the interlacing of wrap and weft is woven fabric. A fabric produced by the process of knitting i.e. to form a fabric by the intermeshing of loops of yarn is knitted fabric. Most of the above items i.e. made-ups, fabrics in pieceleangth, garment and garment in pieceleangth can be produced in either woven or knitted form.

4.1.2 Pattern of Changes in Consumption Using Textile Committee Data for the year 1990, 2000 and 2006

The data on household purchases, for various items are given in numbers and or / metres etc. These are converted into common unit i.e. square metre by applying conversation rates as suggested by Bedi & Cororation, IFPRI(DP), 2008, study and Bedi, 2000.

Cotton Textiles
The estimates of per capita consumption of all variety of cotton textile and clothing are estimated at 8.3 sq. mts. in 1990, 7.76 sq. mts. in 2000 and 8.92 sq. mts. in 2006.

The share of all hosiery varieties in this total consumption of cotton textiles and clothing items consumed is estimated at only 6.14% in 1990, which steadily rose to 17.01% in 2000 and further to 20.04% in 2006.

The actual amount of all varieties of woven cotton textiles was 7.79 sq. mts. in 1990, 6.44 sq. mts. in 2000 and 7.1 sq. mts. in 2006. The share of made-ups (including both Household Varieties and Furnishing Material) in woven cotton textiles has increased from 10.01% in 1990 to 17.55% in 2000 and further to 19.15% in 2006.

Total Textiles

The consumption for all variety of total textiles is estimated at 15.73 sq. mtrs in 1990, 19.64 sq. mts. in 2000 and 23.67 sq. mtrs in 2006. The actual amount of all varieties of woven textiles is estimated at14.98 sq. mtrs in 1990, 18.06 sq. mtrs in 2000 and 21.22 sq. mtrs in 2006. The share of Hosiery varieties in total of all varieties of textiles is 4.77% for 1990, 8.04% for 2000 and 10.35% for 2006. The share of made-ups (Household Varieties and Furnishing Material) in woven textiles is estimated at 7.74% in 1990, 6.98% in 2000, and 7.4% in 2006.

This purchase of these total textile and clothing item could broadly be discussed into five broad groups namely:

- Woven Textiles in Piece Length
- Woven Garments in Piece Length
- Woven Readymade Garments
- Woven Household Varieties
- All Knitted Varieties

4.1.2.1 Woven Textile in Piece Length

Cotton Textiles: It may be seen from data in (Table 4.1A) that per capita consumption of Long cloth/sheeting/Grey Cloth decreased steadily from 0.74 sq. mt in 1990 to 0.18 sq. mt in 2000 and further to 0.04 sq. mt in 2006. Similarly Poplin/shirting/Patta Cloth consumption decreased from 0.46 sq. mt in 1990 to 0.18 sq. mt in 2000 to 0.16 sq. mt in 2006. For Coating/Suiting Drill the per capita consumption remained more or less constant over the period whereas for Furnishing Material the per capita consumption increased during the 1990s by almost 40% but remained constant thereafter. In case of Ladies Dress Material, per capita consumption decreased by 25% in the 1990s and then increased by 30% to reach the initial level in 2006.

The per capita overall piece length consumption of cotton items rapidly declined by around 44% during the 1990s and then by around 19% during 2000 to 2006. The gross consumption (i.e. overall piece length consumption multiplied by population) decreased over the entire period from 1990 to 2006 despite substantial increase in population. It decreased by around 33% from 1990 to 2000, 12% from 2000 to 2006. The share of Piece length in woven cotton was 23.23% in 1990, which declined to 15.68% in 2000 and further to 11.55% in 2006.

Total Textiles

The overall per capita consumption of Piece Length for all Textiles decreased from 1990 to 2000 by 14% and thereafter show slight decline from 2000 to 2006. The Gross Value for all textiles in Piece Length increased by around 4% during 1990s and then by 9% during 2000 to 2006. The share of

Piecelength in woven textiles steadily declined over this period from 30.84% in 1990 to 21.98% in 2000 to18.66% in 2006.

It may be seen in (Table 4.1A) that there was a decreasing trend in the per capita consumption of Long cloth/sheeting/Grey Cloth during 1990 and 2006 by around 30% during 1990 to 2000 and then by 75% during 2000 to 2006. Furnishing material consumption per capita witnessed an increasing trend over the entire period. It increased by 90% in the 1990s and then by much slower rate 10% during 2000 to 2006. For Poplin/Shirting/Patta Cloth, the per capita consumption decreased by 26% from 1990 to 2000 and then increased by 15% from 2000 to 2006. In case of Ladies Dress Material, the per capita consumption decreased marginally by 5% from 1990 to 2000 and then increased by 11% from 2000 to 2006. Similarly, opposite trend was noted in case of Coating/Suiting Drill during the two periods under study. The per capita consumption first increased from 1990 to 2000 by around 9% and then decreased marginally from 2000 to 2006.

4.1.2.2 Woven Garments in Piece Length

Cotton Textiles:

The per capita consumption of Garments in Piece Length decreased from 1990 to 2000 by 33% and then increased marginally from 2000 to 2006. The household consumption at all India level forever decreased by 18% from 1990 to 2000 and then increased by 10% from 2000 to 2006. The share of Garments in Piecelength in woven category is estimated at 56.10% in 1990, 45.50% in 2000 and 41.55% in 2006.

Items wise consumption of different garments in Piece Length is presented in (Table 4.2A). Per capita consumption of Dhoti, Lungi, Wearable Chadder, and Saree (8 Mtrs) shows declining trend from 1990 to 2006. Dhoti consumption decreased by 37% from 1990 to 2000 and then by 36% during 2000-2006. In case of Lungi per capita consumption decreased from 1990 to 2000 by 52% and then by 15% from 2000 to 2006. For Wearable Chadder, per capita consumption decreased by 40% from 1990 to 2000 and then by 30% during 2000-2006. In case of Saree (8 Mtrs), the per capita consumption decreased by 40% from 1990 to 2000 and then by 50% from 2000 to 2006. In case of Odhni/Dupatta, per capita consumption remained constant over the period. In case of Saree (5 Mtrs), the per capita consumption first decreased by 22% from 1990 to 2000 and then increased by 24% from 2000 to 2006.

Total Textiles

The per capita consumption first increased from 1990 to 2000 by 10% and then decreased by 42% from 2000 to 2006 (Table 4.2A). In case of Wearable Chadder, the per capita consumption increased by 35% and then decreased by 15%. Similarly, for Saree (8 Mtrs), the per capita consumption increased by 40% during the 1990s and then decreased by a huge margin of around

75% during 2000 to 2006. For Odhni/Dupatta, the per capita consumption increased marginally by 10% from 1990 to 2000 and then decreased by the same margin of 10% from 2000 to 2006. For Lungi the consumption declined by 63% during nineties and then increased marginally by 3% during 2000-06. In case of Turban the decline was by around 60% during first period and then increased by around 50% during the second period. In case of Saree (5 Mtrs), there was an increasing trend over the entire period. From 1990 to 2000 its consumption increased by around 47% and then by around 26% from 2000 to 2006.

The overall per capita consumption of garments in Piece Length showed an increasing trend. It increased by 26% in the first period and then by 13% in the second period. The aggregate household consumption also increased by more than 50% in the first period and then by around 24% in the second period. The share of piecelength garment in woven products is estimated at 50.13% in 1990, 52.49% in 2000 and 50.85% in 2006.

4.1.2.3 Woven Readymade Garments

Cotton Textiles

As presented in Table 4.3A, the per capita consumption of Shirt/Bush Shirt Manila, Trouser, Payjama salwar Chudidar/Kurta Zubba Kameez/ Kurta Payjama/ Salwar Kameez/ Night Suit/Dressing Gown, Skirt/Midi, Petti Coat and Baba Suit/Baby Jable witnessed an increasing trend during the entire period. For Shirt/Bush Shirt Manila consumption increased by 45% from 1990 to 2000 and further by 60% during 2000 to 2006. In case of Trouser, the increase was 50% during 1990 to 2000 and then increased drastically during 2000 to 2006 by a whopping margin of 135%. In the category of Pajyama /Kurta/Night Suit/Dressing Gown, the increase during1990 to 2000 was substantial at a rate of around 235% whereas during 2000 to 2006 it was around 50%. For Skirt/Midi, the consumption increased by 100% during 1990 to 2000 and then remained stagnant during the second period. In case of Petti Coat, the per capita consumption increased by 60% during 1990 to 2000 and then by around 73% during 2000 to 2006. In case of Baba Suit/Baby Jable, the per capita consumption increased by 30% during the first period and then by 50% during the second period. For half Pant/Shorts/Quarter Pants and Maxi, it increased by 35% during first period and then decreased by around 40% in the second period. For Blouses/Choli, the per capita consumption remained the same during 1990 to 2000 and then decreased by 15% during 2000 to 2006. In case of Frock the per capita consumption first decreased by 65% during first period and then increased by 50% during 2000 to 2006.

The overall per capita consumption of readymade garments showed an increasing trend during both the periods of study. It increased by 63% in the first period and then by 41% in the second period. The consumption at aggregate household level almost doubled from 1990 to 2000 and then rose by

around 54% from 2000 to 2006. On the whole, the share of readymade garments in cotton woven products increased from 11.55% in 1990 to 22.83% in 2000 to 29.15% in 2006.

Total Textiles

The overall per capita consumption for readymade garments almost doubled from 1990 to 2000 and then increased by 45% from 2000 to 2006. The share of Readymade Garments in woven products steadily rose from 11.75% in 1990 to 19.27% in 2000 and further to 23.75% in 2006.

From Table 4.3A, we observe that Shirt/Bush Shirt Manila, Trouser, Payjama salwar Chudidar/Kurta Zubba Kameez/Kurta Payjama/Salwar Kameez/ Night Suit/ Dressing Gown, School Uniform, Petti Coat, and Baba Suit/Baby Jable have witnessed an increasing trend since 1990 to 2006. In case of Shirt Bush/Shirt Manila, per capita consumption increased by 60% during 1990 to 2000 and then by around 68% during 2000 to 2006. For Trouser the increase was around 75% for the first period and in the second period it more than doubled. In case of Payjama/Kurta/Night suit/dressing Gown, the per capita consumption increased drastically by around 550% during 1990 to 2000 and then by around 79% during 2000 to 2006. For the category of School Uniform, consumption went up by 125% during 1990 to 2000 and then increased by 35% during 2000 to 2006. For Petti Coat, it almost doubled during1990 to 2000 and then increased by 68% during 2000 to 2006. For Baba Suit/Baby Jable the increase was 30% during 1990 to 2000 and 20% from 2000 to 2006. In case of Skirt/Midi, the per capita consumption first increased during 1990 to 2000 by around 195% and then remained constant during the second period. In case of Brassier, the per capita consumption remained constant during 1990 to 2000 and then doubled during second period. For Maxi, the per capita consumption remained constant initially and then declined by 25% during 2000 to 2006. For the items like Half Pant/Shorts/Quarter Pants and Blouses/ Choli, the per capita consumption first increased and then decreased. For Half Pant/Shorts/Quarter Pants the increase was around 37% during 1990 to 2006 and then decrease by around 18%. In case of Blouses/Choli, the consumption went up by exactly 50% during 1990 to 2000 and then diclined by around 32% during 2000 to 2006. For some items like Frock, the per capita consumption first decreased by around 36% during 1990 to 2000 and then increased by around 10% during 2000 to 2006.

4.1.2.4 Woven Household Varieties

Cotton Textiles

The overall per capita consumption of Household Items showed an increasing trend during 1990 to 2006. It increased by 45% during 1990 to 2000 and then by 22% during 2000 to 2006. The gross value of consumption increased over the years as expected due to increasing per capita consumption and population. The gross household consumption of

woven household varieties first increased by around 75% during 1990 to 2000 and then by around 34% during 2000 to 2006. The share of Household Varieties in woven cotton textiles items increased from 9.11% in 1990 to 15.99% in 2000 and then to 17.75% in 2006.

The per capita consumption of Chadder increased from 1990 to 2000 by around 7% and then doubled during 2000 to 2006 (Table 4.4A). In case of Towel/Tr.Towel, the consumption doubled during 1990 to 2000 and then by 29% during 2000 to 2006. For Bedsheets/Bed Cover, the per capita consumption remained constant during 1990s and then increased during second period by around 28%. For Mats and Matting and Satranji, the per capita consumption doubled during 2000 to 2006 whereas for Curtain it increased by 200%. The consumption for gaddi first more than doubled during 1990 to 2000 and decreased thereafter.

Total Textiles

The per capita consumption of household items increased marginally by around 5% during the 1990s and then by 26% during 2000 to 2006. The aggregate household consumption of woven household varieties increased by 26% during 1990 to 2000 and then by 38% during 2000 to 2006. The share of household varieties in woven products change from 7.28% in 1990 to 6.26% in 2000 to 6.74% in 2006.

The per capita consumption of Chadder, Bedsheets/Bed cover and Towal/Tr.Towal increased during the period 1990 to 2006 (Table 4.4A). In case of Chadder the consumption increased by around 15% during 1990 to 2000 and then almost doubled during 2000 to 2006. In case of Bedsheets/Bedcover consumption increased marginally during first period and then increased by around 29% during the second period. For Towal/Tr.Towal per capita consumption increased by around 92% during 1990 to 2000 and then by around 29% during 2000 to 2006. For Blanket/Rajai per capita consumption remained constant during the 1990s and then increased by 50% during the period 2000 to 2006. The per capita consumption in case of Pillow Case/Rajai Cover decreased by around 85% during 1990s and remaine unchanged during the second period. For items like Gaddi/Carpet Matt. Matting Satranji and Mosquito net, the per capita consumption first decreased and then increased. For Gaddi/Carpet Matt. Matting Satranji per capita consumption decreased by 50% and then doubled during first and second period respectively. In case of Mosquito net, the per capita consumption decreased by 50% during 1990 to 2000 and then increased by 80% during 2000 to 2006.

4.1.2.5 Hosiery Varieties (knitted varieties)

Cotton Textiles: It may be seen from Table 4.5A, that the per capita consumption of Banian, Underwear/Nicker and T-shirt had a rising trend from 1990 to 2006. In case of Banian consumption

increased from 0.33 to 0.88, an increase of almost 167% from 1990 to 2000, and then by around 33% from 2000 to 2006. For Underwear/Nicker the consumption increased by around 70% from 1990 to 2000 and then by around 30% from 2000 to 2006. In case of T-shirt the per capita consumption increased 15 times from 1990 to 2000, but during 2000 - 2006 it increased by around 55%. In case of Sweater per capita consumption remained unchanged during the 1990s and then it doubled from 2000 to 2006.

The overall per capita consumption for Hosiery goods increased from 1990 to 2000 by around 160% and from 2000 to 2006 it increased by 38%. The gross value of consumption was increasing over the years as expected. From 1990 to 2000 gross consumption increased rapidly by 214% and from 2000 to 2006 it increased by around 51%.

Total Textiles: As shown in Table 4.5A, per capita consumption of Banian, Underwear/Nicker and T-shirt have increased over the periods. In case of Banian the increase was 162% from 1990 to 2000 and 33% from 2000 to 2006. For Underwear/Nicker, consumption increased by 70% from 1990 to 2000 and then by 35% from 2000 to 2006. For T-shirt consumption increased almost 8 times from 1990 to 2000 and from 2000 to 2006 it increased by 30%. In case of Socks/Stockings the per capita consumption remained constant from 1990 to 2000 and then doubled from 2000 to 2006. For the category of Sweater per capita consumption first decreased from 1990 to 2000 by 12% and then increased from 2000 to 2006 by 135%.

The overall per capita consumption of Hosiery goods showed an increasing trend over the periods - it increased by 110% from 1990 to 2000 and then by 55% from 2000 to 2006. The gross value of consumption also increased due to increasing per capita consumption and population growth. Gross consumption increased drastically by 158% from 1990 to 2000 and then by around 70% from 2000 to 2006.

Summary of the Consumption Trends of Cotton and Total Textiles

Amongst the five major categories of various textiles, the following major trends are observed:

- In case of Textiles in piece length, there was a decreasing trend both in case of cotton and total textiles. In case of total textiles most of the items showed a declining trend except furnishing material which increased drastically from 1990 to 2000.

- In case of Readymade Garments both cotton and total textiles showed an increasing trend over the periods. In case of cotton textiles major change took place for trouser which increased drastically from 2000 to 2006 and for skirt/midi which showed a drastic increase from 1990 to

2000. For total textiles major changes took place in school uniform, skirt/midi and petticoat which showed a major increase from 1990 to 2000.

- For Household Varieties also there was an increasing trend for both cotton and total textiles over the periods with chadder showing major changes in both categories of Textiles over the period 2000-2006.

- As for hosiery (knitted varieties) again an increasing trend is observed for both cotton and total textiles with major increase occurring in items like banian and T-shirt in the first period. Also there was a major increase in Sweater consumption in case of Total textiles for the period 2000-2006.

- If we compare cotton textile vis-a-vis total textile, we find that the share of cotton textiles in total textiles has declined from being over 52.77% in 1990 to 39.51% in 2000 and 37.68% in 2006.

4.1.3 Change in the Consumption of Various Items in Clothing Expenditure Using NSSO Data for year 1993-94 and 2004-05

In this part we will analyze the change in the consumption and their share in terms of share of various items in the clothing expenditure, per capita quantity in square metre and per capita value (expenditure) by using the consumer expenditure survey, 61st round, NSSO. The percentage share of various items for 50th and 61st round of NSSO consumer expenditure is given in (Table 4.6A).

Consumer spends 4 per cent and 4.5 per cent on clothing items of his total expenditure (reference period 30 days) in urban and rural India respectively. If we take the reference period as 365 days , which is better reference period for analysis of durable goods then these ratios turn out as 5.96 per cent for urban and 7.07 per cent for rural India. But the per capita expenditure/income is 6712 rupees for rural India and 12610 rupees for urban India in 2004-05. So consumer in urban areas spends more compared to rural consumer in absolute value. It is clear from (Table 4.6A) the share of clothing in total expenditure/income has increased from 6.50 per cent in 1993-94 to 6.65 per cent in 2004-05 at all India level (365 days as reference period). Its share has increased in rural India from 6.57 in 1993-94 to 7.7 per cent in 2004-05 and declined for urban India from 6.33 in 1993-94 to 5.9 per cent in 2004-05 (365 days reference period). If we take 30 days as reference period, we will find that share of clothing for all India has declined from 5.14 per cent in 1993-94 to 4.32 per cent in 2004-05.

If we look to the share of various items with respect to expenditure on clothing, as shown in Table 4.6A, we could identify five items as major items in consumer basket. These items are: 'Sari', 'cloth for shirt, pyjama, salwar, etc', 'cloth for coat, trousers, overcoat, etc', 'hosiery articles, stockings, under-garments, etc', and 'ready-made garments'. The share of these five items together is remaining constant at 77 per cent between 1993-94 and 2004-05. But there is significant change within these 5 items group. The share of sari, cloth for shirt, pyjama, salwar, etc and cloth for coat, trousers, overcoat, etc has declined in 2004-05 compared to the 1993-94. The fall in these three items could be explained by the increase in the share of expenditure of hosiery articles, stockings, under-garments, etc and ready-made garments. The share of hosiery articles, stockings, under-garments, etc has increased by 34 per cent and the share of ready-made garments has increased by 45 per cent. So consumer preference is shifting towards 'ready-made garments' and hosiery items.

The share of dhoti decreased from 5.67 per cent in 1993-94 to 2.73 per cent in 2004-05 for rural India. For urban India, the share of dhoti declined from 1.85 per cent in 1994-95 to 0.88 per cent in 2004-05. The pattern of change is more or less similar in the urban and rural India.

In Table 4.6A, we compare the per capita quantity purchases in square metres between 1993-94 (50^{th} round) and 2004-05 (61^{st} round). The per capita fabric purchase was 18.62 square metres for India in 2004-05 compared to 13.27 square metres in 1993-94. Per capita fabric purchase increased at 3.12 per cent annually. The per capita purchases for rural India increased from 13.06 per square metre in 1993-94 to 17.67 square metres in 2004-05. For the urban India, it increased from 13.94 square metre in 1993-94 to 21.44 square metre in 2004-05. For in rural India, per capita purchase increased at 2.78 per cent annually, whereas it increased at 3.99 per cent for urban India. Per capita purchase increased at higher rate in urban India compare to rural India.

As shown in Table 4.7A, the per capita value of purchases increased from Rs. 278.37 in 1993-94 to Rs. 530.55 rupees in 2004-05, showing 6 per cent annual growth between 1993-94 and 2004-05. For rural India, the per capita value increased from Rs. 246.75 in 1993-94 to Rs. 461.12 rupees in 2004-05. For urban India, the per capita value increased from Rs. 373.25 in 1993-94 to Rs. 734.94 rupees in 2004-05. In terms of per capita value, the growth rates are 5.84 and 6.35 per annum for rural and urban India respectively. Therefore, like per capita purchase, annual growth rate of per capita value of fabric is also higher for urban India compare to rural India.

4.2 Changes in consumption demand across income groups using NSSO data

This section analyzes the per capita quantity purchases across income range at the all India level, both in rural and urban India by using the data from consumer expenditure survey, 61^{st} round, NSSO. Income range wise changes in per capita purchase and per square metre price of various

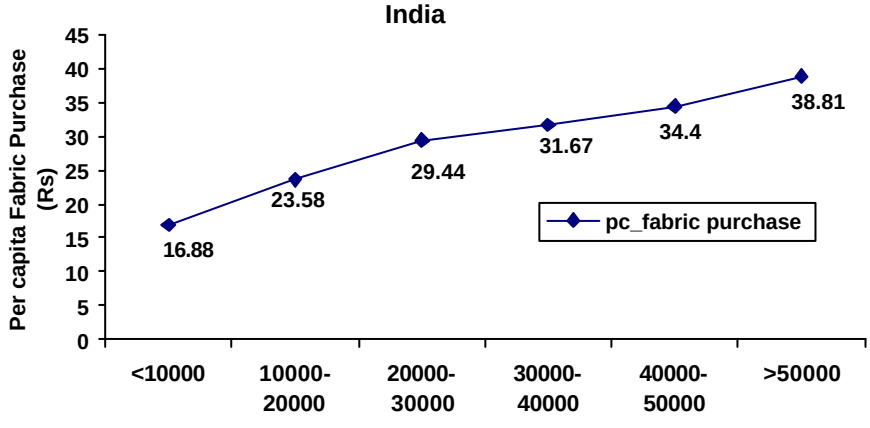
items are looked into. We have used per square metre price as an indicator for the quality of product because as the quality of product increases, the price of the product also increases. Economists use the expenditure as a proxy of household income because of following reasons (Gamtessa 2003).

- In examining the energy use pattern of households, budget shares of different sources of energy are computed using expenditure as a base.
- Expenditure data appears to be more reliable due to possible under-reporting by the households, and the errors that might be committed while pooling all the possible sources of individual household incomes together due to the diversity in the sources of income.
- In demand analysis, it is expenditure rather than income, which is the appropriate variable for analyzing the effect of income.
- Data on households' expenditure captures monthly, quarterly and annual information.

Thus, it is the most reliable data for information on expenditure groups since monthly information could be obtained from the annual or quarterly data with greater accuracy. So we also use expenditure data as a proxy variable for income level. Table 4.8A presents per capita purchases of differenet items.

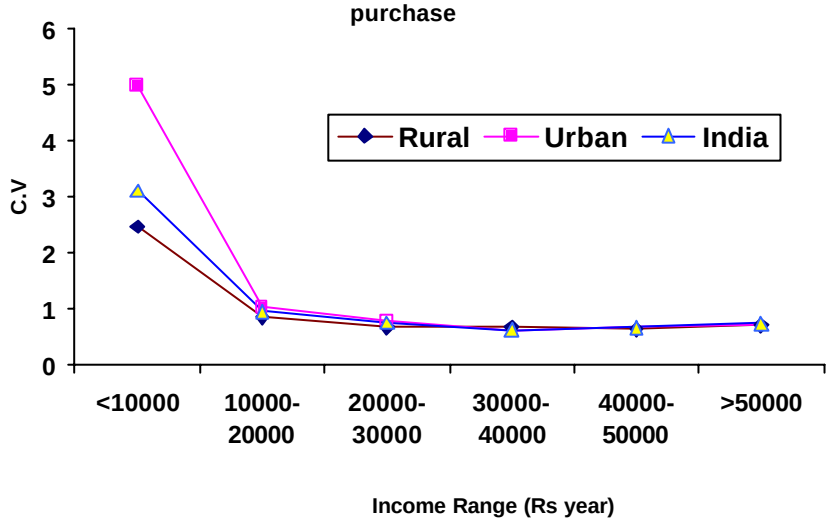
Per capita fabric consumption is estimated to be 18.62 square metres at all India level. Per capita fabric consumption increases as income level increases. But the rate of growth of per capita quantity purchases as income increase falls up to 'Rs.30000-Rs.40000' income group but after that it increases. The per capita quantity purchase is increased by 39.67 per cent in 'Rs.10000-Rs.20000' income group compared to '<Rs.10000' income group. In the higher income group "Rs.20000-Rs.30000', it has increased by 24.85 per cent. After that, there is sharp decline in growth rate. For income group 'Rs. 30000-Rs. 40000' growth rate declines to 7.57 per cent. The growth rate again starts to increase as income level rises. For the highest income group, it is 12.81 per cent. It shows that when income increases, initially consumer spends the increased income on textile items. But after certain level of income, textile items will lose their importance and consumer will start to spend the increased income on the other items.

Fig-1 Per Capita Fabric Purchase (Square metre)-All India



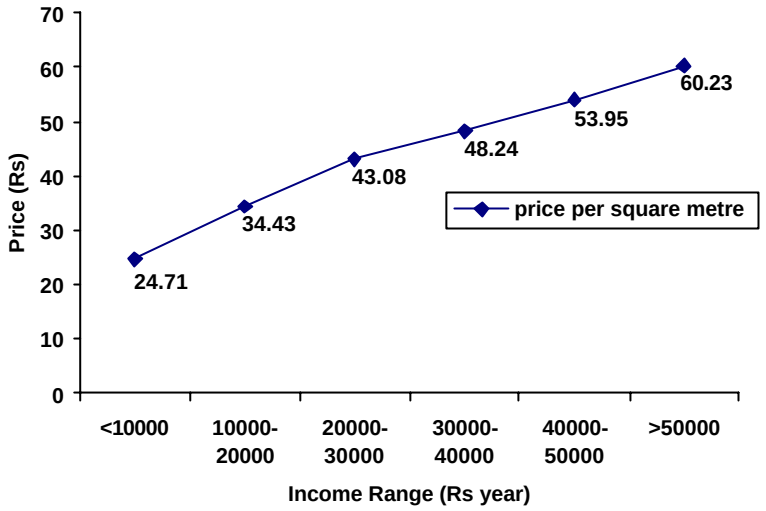
As shown in the Fig-1, the per capita fabric purchase is increased as we move to higher income group. But it is interesting to note (Table 4.8A) that the there is more inequalities in poor people at all India level. In rural and urban India, trends are similar. The coefficient of variation (C.V) is 3.107 for lowest income group "<Rs.10000'. But for higher income group 'Rs10000-Rs.20000', the CV is much lower at 0.95. CV falls up to 'Rs30000-Rs.40000' income group and then starts to increase marginally at all India level. For income group >50000, CV is 0.74 and the average C.V. for the entire country is 2.64. The high C.V for the lowest income class reflects the high degree of relative income differentiation within group member compared to high income group i.e. there are more inequality in poor people compared to the rich people for per capita purchase (despite the fact that the upper income range is kept open ended). Similar kind of trend can be observed in rural and urban India (Fig-2). There is more inequality in urban than rural areas as indicated by the CV which is 2.26 for rural and 3.33 for urban area.

Fig 2- Coefficient of Variation (CV) for per capita quantity purchase



Generally we expect that quality of product used will improve as we moves to higher income classes. In the fig 3, the price per square metre is shown. The price per square metre increases as we move toward higher income groups.

Fig 3- Price Per Square Metre-All India



As shown in Figure-3, the price per square metre for the lowest income groupat Rs.24.71 is almost 2.5 times compared to highest income group price of Rs. 60.23.

Table 4.9A provide statistics in regard to price per square metre for various items (for all India) of cloth. For most of the items, the price per square metre increases as we move to higher income range. For dhoti and lungi, the price falls for highest income group compared to lower income group. But these two items don't have much importance in the consumer basket, as their share is about 5 per cent.

Comparative analysis between rural and urban India reveals the following:

- Per capita purchase for urban India is 21.44 square metre compared to 17.67 square metre for rural India by 2004-05, so the urban per capita purchase is 21.33 per cent higher for urban India compared to rural India
- Dhoti is relatively more important item for rural India compared to urban India. In rural India, consumer purchases 0.58 square metres (per capita) and for urban India, 0.23 square metres. In urban India, the per capita purchase fluctuates around 0.21-0.30 square metre for all income group, it shows that dhoti don't have importance for urban consumer, irrespective of income level. But the situation is different in case of rural India. In rural India, the consumption of dhoti for income range '>50000' is higher compare to lower income group, but exception is income

range ‘Rs.40000-Rs.50000’ through highest income group (>50000), the purchase of dhoti again increases.

- The per capita purchase of readymade garments for urban India is 4.41 square metres and it is 3.29 square metres rural India in 2004-05. So the per capita purchase of readymade garment is 21 per cent higher in urban India compared to rural India.
- ‘Cloth for upholstery, curtain, table-cloth, etc’ and ‘mats and matting’ items are more than 100 per cent for urban India compared to rural India. But both the items don’t have importance because their combined share is 2.8 per cent of urban India and 1.1 per cent for rural India respectively.

Table 4.10A presents per square metre price for urban India. For urban India, the price per square metre increases as we move toward higher income group. So the quality improves as we move from lower income group to higher income group in urban India.

4.3 Expenditure and Price Elasticity of textile items

Knowledge of demand structure and consumer behaviour is essential for a wide range of development policy questions and macroeconomic policy. The expenditure and price elasticity are very helpful in characterizing the demand situation in markets. In this section, expenditure elasticity and price elasticity derived with data from the consumer expenditure survey, 61st round, NSSO. This survey is for the year 2004-05.

4.3.1 Methodology of estimation for expenditure elasticity

The expenditure elasticity measures the proportionate change in spending on the product as income changes. Thus Income elasticity measures the proportionate change in quantities demanded as income changes. The total expenditure is used here as proxy variable for income level, and thus expenditure elasticity is measured as the proportionate change in spending on the product as total expenditure changes. The methodology for estimation of expenditure elasticity is largely drawn from Deaton (1988).

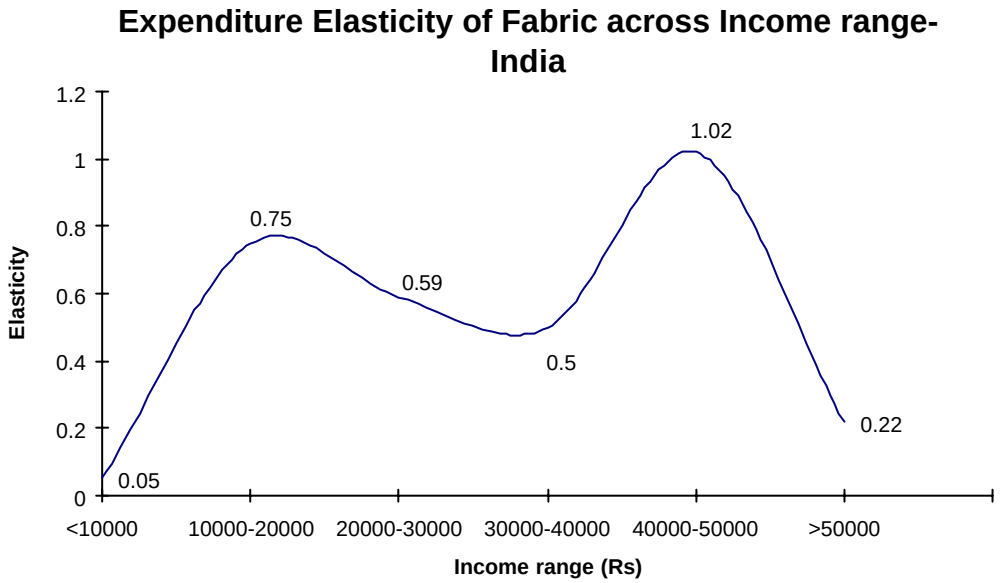
$$Wi = a + b \log PCE$$

Where Wi=Ei (share of expenditure on commodity .i in total expenditure)
PCE= Per capita Expenditure of household on all commodities
It can be simplified in the following formats drive expenditure elasticities.
Expenditure elasticity= $1+\beta/Wi$

The estimated expenditure elasticity for India is given in Table 4.1 (following).

Table 4.1
Expenditure and Price elasticity of Fabric

Income group →	Expenditure elasticity of fabric							Price Elasticity
	<10000	10000-20000	20000-30000	30000-40000	40000-50000	>50000	All	
Rural	0.05	0.67	0.12	0.54	4.74	-0.01	0.38	-0.93
Urban	-0.08	0.82	0.71	0.38	0.32	0.34	0.64	-0.91
India	0.05	0.75	0.59	0.50	1.02	0.22	0.51	-0.97



- Expenditure elasticity increases as we move from lowest income group to the next income group, then it starts to decline. It peaks up again for the income group Rs.40000-Rs.50000 and then declines substantially for the highest income group. It shows poor people are more responsive to the income changes as income increases; they start spending higher part of there income on consumption items including textile & clothing. But as income increases sufficiently, these priorities for consumption of other items (like education, health etc) improve. Once the demand for extra items is also met at the further rise in income lead to higher quality &quantity product purchase of all verities including textile item till some stage.

The expenditure elasticity on clothing for income group 'Rs10000-20000' declines from 0.75 to 0.50 for income group 'Rs 30000-40000', then it increase to 1.02 for income group 'Rs 40000-50000'. For income group 'Rs>50000', the expenditure elasticity decline to 0.22. The estimates on expenditure elasticities for various items are shown in Table 4.11A.

- The income group 'Rs. 40000-Rs.50000' is more responsive to changes in income.

- For many items like 'cloth for coat, trousers, overcoat, etc', ready-made garments, etc the expenditure elasticity is negative for the lowest income group.

- The expenditure elasticity is increased for income group 'Rs. 40000-Rs.50000' income group but then it declines for higher income group.

- Expenditure elasticity is negative in rural India for 'readymade garments' and 'rug, blanket' but for Urban India, the expenditure elasticity is 0.78 for readymade garments and 1.14 for 'rug, blankets'.

- Elasticity is higher for dhoti, 'cloth for shirt, pyjama, salwar, etc', 'chaddar, dupatta, shawl, etc', 'lungi', 'knitted garments, sweater, pullover, cardigan, muffler, scarf, etc' and 'pillow, quilt, mattress' in rural area compared to urban India.

- For the lowest income group, the expenditure elasticity is higher for urban India compared to rural India.

4.3.2 Price Elasticity

Price elasticity measures the degree of responsiveness of demand for a product following change in own price. For the estimation of price elasticity we need the data on price level and quantity purchase. But in most of developing countries (including India), the time series data on the price and quantity purchase are not available. So given these constraint we have estimated the own & cross price elasticities by using Deaton (1990) model (for theoretical modelsee appendix to chapter 4 at the end of this chapter)

Model

Following the Deaton (1990) model, we have estimated price elasticities in following way. The estimation takes place in two stages

Stage I

Because prices are not directly observable so we estimated the following statistics,

Cov (w_i, lnv_j), and var (lnv_j) for .i and .j (1)

Where w - share of good .i in total expenditure

v - Unit value.

Cov (w_i, lnv_j)- covariance between the w_i, and lnv_j

var (lnv_j)– variance of lnv_j

We define the ratio (1) = $\dfrac{\text{Cov}\,(w_i, \ln v_j)}{\text{var}\,(\ln v_j)}$

If there are no quality effects, no cross price effects, and no measurement error, this ratio (1), divided by the budget share, would be one plus own price elasticity, (Deaton 1990).

Stage II

In the Second stage, we basically try to remove the effect of measurement error, quality effect and cross price effect in order to estimate own price elasticity. In the survey data set, expenditures and quantities are inevitably measured with error, so that when unit values are calculated by expenditure divided by quantity purchases, there will be generally be a correlation between the residuals from budget share equation (equation 2) and from unit value equations (equation 3). The unit value also incorporates the quality effect and cross price effect, so we have to make some kind of adjustment in the covariance and variance to remove measurement error, quality effects and cross price effect. For this purpose, we estimate the following equations,

$$W_{Gic} = \alpha^0_G + \beta^0_G \ln X_{ic} + \gamma^0 Z_{ic} + U^0_{Gic} \qquad (2)$$

$$\ln V_{Gic} = \alpha^1_G + \beta^1_G \ln X_{ic} + \gamma^1 Z_{ic} + U^1_{Gic} \qquad (3)$$

Where the X stand for per capita expenditure, Z stands for the household characteristics. .c stand for cluster and .i for household and G stand for good, U stands for error term.

To remove the cluster effect from the data set, cluster means are removed from all variables. We regress the shares and logarithms of unit value on the logarithm of household per capita expenditure, the logarithm of total household size, a set of household characteristics (the number of household member in less the 13 year age, the ratio of number of female to household size and nine education dummies).

Take $\sigma 00$ as variance of error term from equation 2 and $\sigma 11$ as variance of error term from equation 3 and $\sigma 10$ as covariance between the U^0_{Gic} and U^1_{Gic}. To make the adjustment, we estimate the following ratio (Deaton 1990), say ratio (2).

$$\text{Ratio (2)} = \frac{\text{Cov}(w_i, \ln v_j) - \sigma 10/ta}{\text{var}(\ln v_j) - \sigma 11/t+} \qquad (4)$$

where ta= average number of households per cluster in total

t+= average number of households per cluster reporting purchases of the good.

By using ratio (2), we can estimate the price elasticity as defined below.

Price elasticity (e2) = (ratio (2)/w)-1 (5)

Result

The estimated own price elasticities is given in Table 4.2

Table 4.2 Estimated Price Elasticity of Various textile items - 2004-05

(Reference period-365days)

	India	rural	urban
dhoti	-0.80	-0.75	-0.85
sari	-0.88	-0.80	-0.89
cloth for shirt, pyjama, salwar, etc.	-1.04	-0.98	-1.09
cloth for coat, trousers, overcoat, etc	-0.89	-0.89	-0.88
chaddar, dupatta, shawl, etc	-0.46	-0.47	-0.44
lungi	-0.40	-0.44	-0.19
gamchha, towel, handkerchief	-0.63	-0.67	-0.58
hosiery articles, stockings, under-garments, etc	-0.81	-0.82	-0.75
ready-made garments	-0.53	-0.54	-0.46
headwear	-0.08	-0.09	-0.04
knitted garments, sweater, pullover, cardigan, muffler, scarf, etc	-0.52	-0.52	-0.46
bed sheet, bed cover	-0.48	-0.40	-0.53
rug, blanket	-0.43	-0.43	-0.37
pillow, quilt, mattress	-0.35	-0.39	-0.28
cloth for upholstery, curtain, table-cloth, etc	-0.56	-0.50	-0.63
mosquito net	-0.30	-0.27	-0.31
mats and matting	-0.29	-0.14	-0.55
Fabric	-0.97	-0.93	-0.91

Source: calculated from consumer expenditure survey, 61st round, NSSO (2004-05)

Table 4.2 provides the statistics in regard to price elasticity of various textile items. The own price elasticity for fabric is more or less the same in both rural and urban India. It is -0.97 for fabric at all India. The price elasticity for 'cloth for shirt, pyjama, salwar, etc' is more than 1, so they are elastic good at all India level. The demand for headwear is more or less perfectly inelastic both in rural and urban India. The demand of the most of the items is inelastic at all India level, as absolute value of

the price elasticity is less than 1. We expect that the demand of various textile items should be complementary .i.e. the cross price elasticity should be negative. The estimation for cross price elasticity is shown in Table 4.3 for India.

Table 4.3 Cross price elasticity- India

Items	Dhoti & Lungi	cloth for shirt, pyjama, salwar, etc	cloth for coat, trousers, overcoat, etc	ready-made garments
Dhoti&Lungi	-0.47	-1.10	-1.10	-1.11
cloth for shirt, pyjama, salwar, etc	-0.90	-1.04	-0.95	-1.06
cloth for coat, trousers, overcoat, etc	-0.99	-0.97	-0.89	-0.98
ready-made garments	-0.92	-0.86	-0.93	-0.57

Source- Consumer expenditure survey, 61st round, NSSO

Table 4.4 and Table 4.5 presents the cross price elasticity for rural and urban India respectively.

Table 4.4 Cross price elasticity-Rural India

Items	Dhoti & Lungi	cloth for shirt, pyjama, salwar, etc	cloth for coat, trousers, overcoat, etc	ready-made garments
Dhoti&Lungi	-0.56	-1.01	-1.03	-1.02
cloth for shirt, pyjama, salwar, etc	-0.85	-0.99	-0.91	-1.00
cloth for coat, trousers, overcoat, etc	-0.99	-0.95	-0.88	-0.94
ready-made garments	-0.93	-0.84	-0.92	-0.54

Source- calculated from consumer expenditure survey, 61st round, NSSO

Table 4.5 Cross price elasticity-Urban India

Items	Dhoti&Lungi	cloth for shirt, pyjama, salwar, etc	cloth for coat, trousers, overcoat, etc	ready-made garments
Dhoti&Lungi	-0.24	-1.11	-1.12	-1.04
cloth for shirt, pyjama, salwar, etc	-1.06	-1.07	-0.99	-1.08
cloth for coat, trousers, overcoat, etc	-1.00	-0.97	-0.88	-0.99
ready-made garments	-0.89	-0.89	-0.96	-0.54

Source- calculated from consumer expenditure survey, 61st round, NSSO

4.3.3 Projection of Domestic Demand for 2011-12 and 2015-16 based on Elasticities derived in Bedi & Cororation, IFPRI(DP), 2008

The estimates of fabrics equivalent domestic demand in terms of household and non-household consumption is estimated at 43079 million sq. metres during 2007-08. The elasticities derived above in this study could not be used due to lack of knowledge on the income range-wise expected growth till 2011-12 and 2015-16.

Method used for projections is therefore price and income elasticities from Bedi & Cororation, IFPRI(DP), 2008, on the base year 2007-08 data. Bedi & Cororation, IFPRI(DP), 2008, estimated the following elasticites.

$Cottq_t = -1.237*Rp_t + .3643*PCGDP_t + .2049*e_{t-1}$
(t=-9.322) (t=2.746) (t=3.655)

R2bar=8.9998 DW=1.97208

Where
$Cottq_t$ is per capital household's demand of cotton textiles and clothing in quantity
Rp_t is relative wholesale price of cotton/price of man-made products
$PCGDP_t$ is relative pre capita gross domestic product
e_{t-1} is one lag error term

$Manq^*_t = -.2260*MANP^*_t + .7509*PCGDT_t$
(t=2.43) (t=2.746)
R2bar=.9772 DW=1.90

Where
$Manq_t$ is per capita households demand of synthetic textiles and clothing in quantity
$MANP_t$ is wholesale price of synthetic products,
$PCGDP_t$ is per capita gross domestic product,
This equation is transformed using ? to solve the problem of autocorrelation in the initial model.
$Manq^*_t = Manq_t - ?Manq_t$
$MANP^*_t = MANP_t - ?MANP_t$

$PCGDT_t = PCGDT_t - ?PCGDT_t$
µt=et-?et
B0=?- ??

Scenario A has been projected on the assumption that GDP is likely to grow by 8% per annum and relative prices of cotton are likely to increase by 10 per cent. The domestic consumption of fabric is projected at 59228 million sq. meters and 81434 million sq. metres respectively by 2011-12 and 2015-16 (Table 4.6). Thus the aggregate domestic consumption of textiles is projected to grow at 8.28 per cent between 2007-08 and 2015-16.

Table 4.6
Aggregate domestic consumption (Household & non-household) of fabric
(million square meters)

2007-08	43079
2011-12 (proj.)	59228
2015-16 (proj.)	81434

4.3.4 Summary

The share of readymade garments indicates an increasing trend since 1990 but the share of textile piece length has decreased during the same period. The poor people generally purchase the low quality product as indicated by the low per unit value. The quantity purchased increases as we move toward higher income group.

4.4 Retailing

Retail is very important activity these days. The simple act of selling goods and services to the end-consumer by retailers is becoming complex by the consumer driven highly competitive market of the day. The complexity gets reflected in all prominent aspects of retailing from procurement to billing and checkouts, from the backend to front end operations etc. Innovation and differentiation have become the watchword in retail and newer retail formats are being evolved to meet the aspirations of the modern day consumers (IMAGES KSA TECHNOPAK, 2005). Retailing is important sector in terms of employment and income generation.

4.4.1 Apparel Retailing in India

During 2006 total consumption of fabric and garments including exports is estimated at Rs 2813 billion, out of which amount of spending on textiles and clothing items by the household sector was estimated at Rs 1,556 billion and exports were of the order of Rs.561 billion. In 2006 exports constituted 20 percent, household expenses 55 percent, and non household expenses 25 percent of the total sales value of cloths in 2006. Total value of production of fabric and garments for the same year was Rs.1294 billion. Thus average sales margin in 2006 comes out to be 117.35%. Table 4.7 indicates

that the average margin on textile and clothing products was 109 percent in 1999, 126 percent in 2003, 139 percent in 2004, and 127 percent in 2005. Such a high margin is mainly due to the long chain of wholesalers and retailers involved from the production stage to the final consumer stage. The comparison of production and consumption estimates, along with the NSSO data on per unit margin for wholesaler and retailer in Table 4.8, indicates that on average, two wholesalers and two retailers, along with duties, could add up to a margin that is close to 100 percent. The margin for two wholesalers and four retailers will add up to 122.74 percent for cotton textile products and 106.72 percent for garments.

Table 4.7
Comparison of Production and Consumption of Total Fabrics and Garments Estimates (in Rs billion)

Year	Consumption Expenditure in				Production: Total Fabrics and Garments	Value of Consumption /Production	Margin (%)
	Household Sector	Nonhouse hold Sector	Exports of Fabrics and Garments	Total Fabrics and Garments			
1999	908.7	366.7	399.4	1,674.80	800.7	209.17	109.17
2003	1,179.70	455.1	490.9	2,125.70	942.1	225.63	125.63
2004	1,337.90	598.3	473.3	2,409.50	1,008.70	238.87	138.87
2005	1,435.10	641.8	506.1	2,583.00	1,137.50	227.08	127.08
2006	1,555.84	695.8	561.2	2,812.78	1,294.10	217.35	117.35

Source: Bedi & Cororation, IFPRI(DP), 2008.

Table 4.8 Average Trade Margins and Extent of Wholesaler and Retailers (average trade margin, %)

Commodity Group	Wholesaler Trade Margin	Retailer Trade Margin	One Wholesaler and One Retailer	Two Wholesalers and Two Retailers	Two Wholesalers and four Retailers
Cotton textiles	9.4	16.8	27.78	63.28	122.74
Other textiles	10	17.6	29.36	67.34	131.43
Hosiery goods	13.3	17.4	33.01	76.93	143.86
Ready-made garments	13.2	12.7	27.58	62.76	106.72

Source: Bedi & Cororation, IFPRI(DP), 2008.

4.4.2 Structure of Retailing in India

The high average sales margins are due to most of the retailing concentrated in traditional small and medium sized retailers. Direct sale by producers or through their franchises is very limited. But over the years there is a gradual shift toward modern retailers with single and/or multi brand outlets. But textiles and garments retailing is still dominated by traditional retailers. The structure of retailing can be broadly classified into three heads.

Small Traditional Retailers

- Shops are small and cramped, display system is primitive and ranges are limited.
- No fitting room because of the space problem,
- Generally computers are not used in the shop and few accept debt cards & credit cards.
- Costs are low, competition is intense, margins are wafer-thin and profit expectations are modest.
- Focus on the selling cheap apparel to large number of middle class customers.
- They don't stock the foreign or premium brand due to its high prices**.**

Organised Modern Retailers

We can describe it as retailer who operated relatively large and spacious stores, employ at least 6 people, adopt modern retailing business practices, display apparel attractively, offer a wide choice of clothing, create a pleasant ambience for shoppers and make special efforts to attract fashion-conscious consumers by stocking fashionable and well-know brands. Most Indians like to compare brands carefully in terms of prices, fit, and styles- before they purchase, so Multi Brand Outlets (MBOs) have major advantage. But most MBOs stock only popular and fast moving clothing products and many focus on budget conscious customers and stock cheap brands. So MBO are not especially attractive for foreign companies. But foreign and Indian clothing companies sell a substantial proportion of their output through MBOs. In addition there many single brand outlets operating also.

Malls and Departmental Stores

A number of upscale shops are established in the malls. Mostly single brand outlets are there in the malls. In the clothing sector, these included the franchised stores of both India and foreign retailers, e.g. Levi's, Pepejeans, Wrangler, United Colour of Benetton, Parx, Puma, Arrow, Marks & Spencer, etc. The first shopping mall of international standards was set up in Mumbai in 1999. Each mall has an anchor store to increase visitor numbers and some have entertainment complexes.

There are fewer than 150 departmental stores in India. Yet they constitute major retailing channels for many foreign clothing brands and have been growing at a much faster pace than traditional retailers do in recent years. Before liberalization departmental stores were not so developed due to limited availability of products. The first departmental store, which conformed to international standards, was set up as recently as 1992-93 by Shoppers' stop in Mumbai. Since the 1990s, the variety of consumer goods available in India -including clothing brands-has grown enormously, and there has been a rapid spread of consumerism. Today there are about 8 major department store chains in India, namely- shoppers' shop, Pantaloons, Big Bazaar, Vishal Mega Mart, lifestyle, Ebony; Westside, and Globus.

4.4.3 Retail Location in India

For entry into the Indian market to be viable foreign companies have to focus on those parts of the market that are potentially the most attractive. In fact it is possible to identify 7 major cities where large number of rich sections of the population are located, who can afford to pay the relatively high prices charged for these foreign apparel brands-Mumbai, National capital Region (NCR), Chennai, Bangalore, Hyderabad

Some major pull factors for these major retail centres are-

- Large populations size,
- Relatively high income levels
- Consumerist culture
- It is easy to generate the funds for development of new malls in these cities due to availability of other infrastructure facilities that made it quite economical.

4.4.4 Growth of Retail Market in India

Bedi & Cororation, IFPRI(DP), 2008, estimated that the expenditure on clothing expanded by 10.05 per cent in nominal terms or 6.55 per cent in real term from 1990-91 to 2005-06. Because of the continued importance of tailoring, Indian consumers purchase many fabrics directly. As a result, a large number of shops concentrated on selling textiles rather than clothing.

4.4.5 FDI Policy in Retail

So far FDI is not completely allowed in Indian retail sector because of fear that the entry of foreign companies into retailing would adversely affect existing business and also a large number of people who are employed in the sector. Currently, India does not allow FDI in multi-brand retail but permits up to 51 per cent FDI in single brand retail and 100 per cent in cash-and-carry wholesale trading. Though there is a ban on FDI in big multi-brand retail stores, there is no restriction on companies accessing the foreign equity market through the American and global depository receipts. It will increase the quality and variety of products, keep prices competitive, expand manufacturing, besides generating employment and also it will be helpful in modernizing the retail sector in the country.

4.5 Value Chain Analysis

The purpose of value chain analysis undertaken in this study by conducting NCAER, 2008-09 survey is to assess the various intermediary stages involved and have a feel of number of the intermediaries like wholesalers, retailers, distributors, etc from ex-factory to the final consumers/users, value addition at varying stages and shortcomings in the supply chain for textiles and clothing products. The analysis is based on a primary survey undertaken by NCAER, during 2008-09 in Delhi-NCR and some small cities and towns with sample size of around 200 units.

4.5.1 Purchase of fabrics/ garments by the traders

The traders at the wholesale level purchase fabrics/ garments through factory agent, directly from powerloom and readymade garments household units. Whereas a small wholesaler purchases directly from any other large wholesaler some times an agent exist between big wholesaler and small wholesaler. Main cause of purchasing fabric through agent is that the factory does not sell directly to a wholesaler because the latter purchases in small quantities; the agent provides fabric to wholesaler at factory price against a commission, which is provided by the factory. An agent usually has contacts with more than one factory.

Table 4.9
Distribution of Traders Surveyed For Fabric/ Garments Units (Percentage)

Respondent	Directly from factory	Directly from powerloom	Directly from readymade garments household units	Agent	Through any other wholesaler	Total
Wholesalers	21.43	7.14	7.14	50.00	14.29	100.00
Retailers	12.00	12.00	12.00	20.00	44.00	100.00

Source: Primary survey conducted by NCAER, 2008-09

Table 4.9 provides the statistics based on primary survey data in regard to fabric purchase. On an average a wholesaler deals with 2-3 products and has 20-40 varieties in each product. Some wholesaler purchase from single source and some others purchase from 2-3 sources. Twenty two percent of the wholesale traders surveyed for making purchase directly from factory, 7 percent directly from powerloom units, 7 percent directly from readymade garments household units, 50 percent through agent and the remaining 14 percent of the wholesalers purchase from other wholesalers.

A retailer deals with 4-5 products each with 6-7 varieties. Some retailers purchase from single source and some other purchase from 3-4 sources. 12 percent of the retailers surveyed purchased directly from factory, 12 percent directly from powerloom, 12 percent from readymade garments household units, 20 percent through agent and the remaining 44 percent purchase through wholesalers. Whereas a large retailer in malls has 6-7 or more products and 10-15 varieties in each product line. Some large retailers (mall) reported that their products are produced in their own factory.

Sometimes some value addition work is also done by wholesalers after purchase of fabric/ garments, it increase the value of fabric/ garments on an average by 34 percent.

Table 4.10
Percentage of Traders Purchase From Same Source or Different Sources and Purchase in Cash, Credit or Both

Respondent	Same source	Change source	In cash	In credit	Cash and credit both
Wholesalers	38	62	12	25	63
Retailers	46	54	8	38	54

Source: Primary survey conducted by NCAER, 2008-09

Table 4.10 presents the percentage of respondents' purchasing from same source and purchasing on cash, credit or in both. It is not necessary that wholesalers/ retailers always purchase fabric/ garments from same source, it depends on price, variety and quantity of fabric/ garments it wants to purchase. Around 38 percent of the wholesalers respond that they purchase fabric/ garments from the same source, where as the remaining 62 percent of the traders change sources. In case of retailer around 46 percent of the retailers respond that they purchase fabric/ garments from the same sources, where as the remaining 54 percent of the retailers change the sources.

Most of the wholesalers purchase fabric/ garments on cash and credit both. It is also noted that 12 percent of the wholesalers purchase in cash, 25 percent purchase in credit and the remaining 63 percent purchase in cash and credit both. It is also noted that in case of retailer 8 percent of the retailers purchase fabric/ garments in cash, 38 percent purchase in credit and the remaining 54 percent purchase in cash and credit both. In the case of credit purchase wholesalers/ retailers maintain on average of 60 days' credit.

Table 4.11
Percentage of Traders Purchase with Frequency

Respondent	Weekly	Fortnightly	Monthly	Not fixed	Total
Wholesalers	-	-	63	37	100
Retailers	23	15	31	31	100

Source: Primary survey conducted by NCAER, 2008-09

Table 4.11 provides information with regard to frequency of fabric/ garments purchase. The frequency of purchase is however not fixed it may be weekly, fortnightly, monthly or even seasonally. Sixty three percent of the wholesaler purchase fabric/ garments monthly and the remaining 37 percent have no fixed frequency. Similarly, twenty three percent of the retailers purchase fabric/ garments weekly, 15 percent purchase fortnightly, 31 percent purchase monthly and the remaining 31 percent of the retailers have no fixed frequency. However, large retailers (in malls) procure 50 percent of their inventory of garments weekly and the remaining 50 percent fortnightly.

Eighty seven percent of the wholesalers, 85 percent of the retailers and all the large retailers (in malls) in the survey reported that they also buy seasonally. All the wholesalers and 85 percent of the retailers reported that they buy on demand also, whereas all the large retailers (in malls) said that they do not purchase on demand.

Table 4.12
Percentage of Traders Face Problem of Over Stock and Under Stock

Respondent	Over stock	Under stock	Both	None	Total
Wholesalers	37	-	13	50	100
Retailers	23	15	8	54	100

Source: Primary survey conducted by NCAER, 2008-09

Table 4.12 presents the percentage of traders facing problems of over stock and under stock. Some traders reported to have faced the problems like over stock, under stock/ shortage and both. It is also noted that for some traders there happened to be over stock of some products and under stock of other products; each trader wants to economize on stock maintained and at the same time don't wants to lose customers. Thirty seven percent of the wholesalers faced problem of over stock and 13 percent of the wholesalers faced both the problems (over stock, under stock), whereas 50 percent of the wholesalers said that they have not faced any problem like over stock or under stock. Twenty three percent of the retailers faced problem of over stock, 15 percent faced problem of under stock and 8 percent of the retailers faced both the problems, whereas the remaining 54 percent of the retailers said that they have not faced any problem like over stock or under stock. Twenty five percent of the large retailers (malls) faced problem of under stock, while 75 percent of the large retailers (malls) do not faced problem of over stock and under stock. Over stock problem arises due to unexpected change in fashion, unexpected reduction in demand, entry of new players etc.; whereas under stock problem arise due to shortage of product in market, non-availability of enough capital, etc. On an average a wholesaler maintains 2 months stock of fabric/ garments, a retailer maintain two and half months' stock and a large retailer (mall) maintain one month stock.

There are no fixed criteria for forecasting demand for fabric/ garments. Almost all the traders forecast demand based on trend of the market.

Traders generally are not encountering much problems of contract failure, renegotiations after contract, breach of forward contract on the part of buyers/ sellers; in rare case contracts failed. Eighty eight percent of the traders said that they did not face any problem of contract failure while 12 percent of the traders encountered some problems of contact failure.

Producers have a major say in determining the price of fabrics/ garments, while in case of quantity of purchase of fabrics/ garments and their quality traders play the determining role. All the traders in the sample reported that the major role in determining the price of fabrics/garments is played by producers, major decisions in determining the quality of fabrics/garments are taken by traders. Sixty four percent of the traders have reported that the major role in determining the quality of fabrics/garments is played by traders, 24 percent of the traders said that major role in determining the quality of fabrics/garments taken by producers while the remaining 12 percent reported joint (producers and traders) determination of quality. Major role in determining, how much quantity you have to purchase taken by traders, 84 percent of the traders said that major role in determining, how much quantity you have to purchase taken by them, 8 percent of the traders said that the major role in determining, how much quantity you have to purchase taken by producers and 8 percent joint (producers and traders) determining, how much quantity you have to purchase.

4.5.2 Sale of fabrics/ garments

Table 4.13
Percentage of traders sold fabric/ garments to different sources

Respondent	Agent	Small wholesaler	Readymade garments units	Retailer/ small retailer	Final consumer	Total
Wholesalers	18	35	12	35	-	100
Retailers	-	-	-	19	81	100

Source: Primary survey conducted by NCAER, 2008-09

Table 4.13 provides the percentage in regard to fabric/ garments sold. A wholesaler sold their fabric/ garments to 3-4 further intermediaries e.g. agent, small wholesaler, readymade garment unit and the retailer in the market. Eighteen percent of the wholesalers sold fabric/ garments to market agent, 35 percent sold to small wholesalers, 12 percent sold to readymade garments household units and 35 percent sold to retailers. Almost all the retailers sold to final consumers, 81 percent retailers sold to final consumers and the remaining 19 percent respondent sold to final consumers as well as to small retailers in the market. All the large retailers (malls) sold their products to final consumer. Some wholesalers of fabrics gave some discount to readymade garment units as compared to other customers.

Most of the traders deal with homogeneous clientele (product) every time, 80 percent of the traders said that they generally deal with homogeneous clientele.

Table 4.14
Percentage of traders sold their products on cash, credit or both and receive payment after average number of days

Respondent	In cash	In credit	Cash and credit both	Receive payment after average number of days
Wholesalers	-	25	75	101
Retailers	69	-	31	127

Source: Primary survey conducted by NCAER, 2008-09

As per Table 4.14, wholesalers sold their products in cash, credit and both. Twenty five percent of the wholesalers sold on credit and the remaining 75 percent of the wholesalers deals in cash and credit both; Sixty nine percent of the retailers sold on cash and the remaining 31 percent of the retailers deals in cash and credit both; Seventy five percent of the large retailers (malls) sold on cash and the remaining 25 percent of the large retailers deals in cash and credit both. When the traders sold in credit, on an average a wholesaler receive the payment after 101days, a retailer receive the payment after 127days and a large retailer receive the payment after 3 days only.

Table 4.15
Percentage of Traders Adopting Sales Strategies to Increase Their Sale

Respondent	Adopt	Not adopt	Total
Wholesalers	12	88	100
Retailers	31	69	100

Source: Primary survey conducted by NCAER, 2008-09

Table 4.15 presents the percentage of traders adopting sales strategies to increase their sales. Around 88 percent of the wholesalers do not adopt any major sales strategy like discount, gift, target fixing and selling by force; similarly, sixty nine percent of the retailers do not adopt any major sales strategy, while 31 percent of the retailers adopt strategies like discount to increase their sale. All the large retailers (in malls) adopt strategies like discount, gift and target fixing to increase their sale.

Some traders who sold on credit faced the problem of not receiving payment for long for their supplies. Sixty seven percent of the traders reported that they have not received payment (for long) for their supply of some items.

The supply chain that exists in the marketing of fabric/ garment is as follows:

(i) Factory to 1st intermediate agent to 2nd intermediate wholesaler to 3rd intermediate retailer to final consumer. It is noted that 31 percent of the supply chain lie under this category.

(ii) Factory to 1st intermediate agent to 2nd intermediate wholesaler to 3rd intermediate small wholesaler to 4th intermediate retailer to final consumer. Thirty one percent of the traders lie under this type of chain.

(iii) Factory to1st intermediate agent to 2nd intermediate wholesaler to 3rd intermediate agent to 4th intermediate small wholesaler to 5th intermediate retailer to final consumer. Eight percent of the traders exist in this type of chain.

(iv) Factory to1st intermediate agent to 2nd intermediate wholesaler to 3rd intermediate agent to 4th intermediate Small-wholesaler 5th intermediate retailer to 6th intermediate small-retailer to final consumer. No any even case noted in this type of chain.

(v) Factory to 1st intermediate agent to 2nd intermediate retailer to final consumer. Eight percent of the traders exist in this type of chain.

(vi) Factory to 1st intermediate wholesaler to 2nd intermediate retailer and to final consumer. Fifteen percent of the traders exist in this type of chain.

(vii) Factory to 1st intermediate retailer and to final consumer. Seven percent of the traders exist in this type of chain.

(viii) Factory to own retailer (factory outlets) and to final consumer, no any intermediate exist between them and they supply their products directly to final consumer. All the large retailers (in malls) adopt this type of chain.

In the study we have seen that the maximum number of intermediates exist between factory and final consumer is 5 in metro cities, average number of intermediate in the supply chain are 4. This chain may vary in small town or in interior areas. Managing such a complex supply chain requires coordination through excellent managerial practices, technology and facilitating policies.

4.5.3 Prevailing price at various stages

Price of fabric/ garments generally increased with the number of intermediates in the chain. As compared to ex-factory, consumer price increased about 83 percent. Major cost components of the respondents are storage cost in terms of rent/ imputed rent, transportation/ loading/ unloading/ labor cost, cost on hiring of employee.

Table 4.16
Percentage of Average Percentage Margin Charged by Intermediaries Existing in the Supply Chain

Agent	Wholesaler	Small wholesaler	Retailer	Large retailer (mall)
2	15	20	30	100

Source: Primary survey conducted by NCAER, 2008-09

Table 4.16 provides the information with regard to average margin taken by traders. In case of 4 intermediaries the price to consumer is 183 percent of the ex-factory price. Bedi & Cororation,

IFPRI (DP), 2008, estimates on average trade margin of wholesalers and retailers, which is much similar to our survey results (217.35 per cent).

On an average agent takes 2 percent margin, wholesaler takes 15 percent margin, small wholesaler takes 20 percent margin and retailer takes 30 percent margin. Large retailers who have own outlet in malls etc. takes average 50 percent margin. On an average trader spent 8 percent of the total sale value on storage cost in terms of rent/ imputed rent, transportation/ loading/ unloading/ labor cost and cost on hiring of employee. It is not necessary that if the supply chain is large, the consumer will pay more for fabric/ garments. It was observed that there is no other intermediary between factory and final consumer in case of large retailers and factory outlets in malls and still they charge very high margin for their products, which in percentage terms is less than the chain of small retailers and wholesaler in case of retail outlets the quality of fabric also depends and is good in case of mall. For example a retailer sold a shirt at Rs. 399/- and a large retailer (malls) sold the same type of fabric shirt at Rs. 1599/-; A retailer sold a pant at Rs. 599/- and a large retailer sold the same pant at Rs. 1799/-; a retailer sold a T-shirt at Rs. 299/- and a large retailer sold the same T-shirt at Rs. 699/-; a retailer sold a blazer at Rs. 1599/- and a large retailer sold it at Rs. 4999/-; a retailer sold a tai at Rs. 299/- and a large retailer sold the same tai at Rs. 999/-; a retailer sold a handkerchief at Rs. 40/- and a large retailer sold the same type of fabric handkerchief at Rs. 125/-; i.e. the large retailer (mall) takes 3-4 times high margin than a retailer in the market.

4.5.4 Conclusion

Textile firms need to develop managerial capabilities required to manage large work force and design an appropriate supply chain. There is need for emergence of specialized firms that will consolidate orders, book capacities, manage warehouses and logistics of order delivery. The high retail property prices and high channel margins in India will restrict growth of this market. Firms need to make their supply chain leaner in order to overcome these disadvantages. The new market will be won on the basis of capabilities across the supply chain. Policy will need to facilitate this building of capabilities at the firm level and the flexible strategies that firms will need to devise periodically.

However, these factors notwithstanding, the industry can certainly put its own house in order by focusing on quality control, to make their products world class. This calls for building up a highly skilled work force which can bring about a change throughout the supply chain and execute the task with precision. The upper management and middle management, including merchandiser, should be able to make sound plans, make realistic deadlines, procure right shade and texture of material timely. The designers should be such who can understand international consumers' requirements; and skilled and semiskilled workers

The exporters have to contend with logistical issues too. For example, there could be a six-month gap between samples being sent to the buyer country and the final order being placed. In this time period, the cloth, buttons etc could have been exhausted and prices could have spiraled, leading to a need for revision of prices. Thus a seamless supply chain, control over retail and distribution, meticulous attentions to quality are issues that manufacturers will have to address.

Appendix to chapter 4

Deaton (1990) Theoretical Model

Deaton (1990) has given the model for estimation of own and cross elasticites from the survey data survey. The basic model estimated here is one in which market prices are treated as unobservable variables, which directly determine quantity purchases and are indicated by unit value. The key assumption is that there is no variation in market prices within each cluster, so that within cluster estimators of unit value and quantity equations can identify Engal and quality effects without contamination by the (unobservable) variation in market price.

Data requirments

- data are required on household expenditures on a range of goods, as well as on physical quantities purchased.
- households be geographically "clustered" within the sample

The model that Deaton(1990) estimated is as follow. For household .i in cluster c, there are two equation for good G;

$$W_{Gic} = \alpha^0_G + \beta^0_G \ln X_{ic} + \gamma^0 Z_{zic} + \sum_{H=1}^{n} \theta_{GH} \ln P_{Hc} + f_{GC} + U^0_{Gic} \quad (1)$$

$$\ln V_{Gic} = \alpha^1_G + \beta^1_G \ln X_{ic} + \gamma^1 Z_{zic} + \sum_{H=1}^{n} \psi_{GH} \ln P_{Hc} + U^1_{Gic} \quad (2)$$

Where

W_{Gic} is the budget share of good G in household i's budget, defined as expenditure on the good divided by total expenditure on all goods and services X_{ic}

V_{Gic} =unit value of good G,

Z_{zic} is household characteristics,

P_{Hc} is Price of good H in cluster C

f_{GC} is stand for cluster fixed effect for good G

U stand for residual

For each cluster c, I shall denote by n_c the number of households in the cluster, and by n^+_{cG} the number of households that have observations on both the budget share and the unit value of good G.

One non-standard feature of the equations (1) and (2) is that the prices for the goods, lnpGc, are not observed, so that it is not possible to estimate the equations directly. Note that prices are assumed to be the same for all households in cluster c, so that there is no i suffix on these variables.
The budget share in equation (1) is observed for all households, but the unit value for good G in equation (2) is observed only for those households that record at least one purchase in the market for that commodity. Households with zero budget shares do not generate a corresponding unit value, just as in the labor supply literature, individuals who do not work do not have recorded wage rates. However, in the current case there will also be households with a positive budget share but for whom there is no recorded unit value. This occurs if households consume own-produced goods whose value has to be imputed.

The parameters β^0_G in (1) and β^1_G in (2) determine the total expenditure elasticities of quantity and quality. Since $\beta^1_G = \partial \ln v_G / \partial \ln x$, and since unit value is price multiplied by quality, the parameter is simply the expenditure elasticity of quality. From the defination V_G and W_G,

$V_G = X_G / Q_G$

$W_G = X_G / X$

Therefore

$W_G = V_G Q_G / X$

Taking the logarithms of W_G

$$\ln W_G = \ln V_G + \ln Q_G - \ln X \qquad (3)$$

If (1) is differentiated with respect to lnx, and ε_G is the (quantity) demand elasticity, we have

$$\partial \ln w_G / \partial \ln x = \beta^0_G / w_G = \varepsilon_G + \beta^1_G - 1 \qquad (4)$$

since the logarithm of the share is the sum of the logarithms of quantity and quality less the logarithm of expenditure (using equation 3, Deaton (1987)). Rearranging,

$$\varepsilon_G = 1 - \beta^1_G + \beta^0_G / w_G \qquad (5)$$

If ε_{GH} is the standard matrix of own and cross price elasticities of quantities, the differentiating (1) with respect to $\ln p_H$ we have

$$\partial \ln w_G / \partial \ln p_H = \varepsilon_{GH} + \Psi_{GH} = \theta_{GH} / w_{GH} \quad (5.1)$$

So that , $\varepsilon_{GH} = -\Psi_{GH} + \theta_{GH} / w_{GH}$ (6)

Given that prices are not observed, all of the parameters cannot be estimated without further prior information. The basic result that yields identification is a formula that links the effects of prices on quality choice to conventional price and total expenditure elasticities. Given a separability assumption about the basic good that comprise each heterogeneous commodity, it is shown in Deaton (1988) that

.

$$\Psi_{GH} = \delta_{GH} + \beta^1_G \varepsilon_{GH} / \varepsilon_G \quad (7)$$

According to 7, the price of good H only effects the quality of good G to the extent that there is cross-price quantity elasticity $\varepsilon_{GH.}$ Assuming that 7 holds at the sample means, 4 and 6 can be used to substitute for ε_{GH} and ε_G in 7, we obtain a relationship linking the underlying parameters,

$$\Psi_{GH} = \delta_{GH} + \frac{\beta^1_G (\theta_{GH} / w_{GH} - \Psi_{GH})}{(1-\beta^1_G) + \beta^0_G / w_G} \quad (8)$$

It is convenient to define the vector ξ by

$$\xi_G = \beta^1_G / \{(1-\beta^1_G) w_G + \beta^0_G\} \quad (9)$$

So that, in matrix notation, 8 becomes

$$\Psi = I + D(\xi)\theta - D(\xi)D(w)\Psi \quad (10)$$

where I is the (NxN) identity matrix and D(x) denotes a diagonal matrix with the vector x on its diagonal.

Now we are in the position to discuss the methods of estimation.

The estimation takes place in two stages. At the first, equation 1 and 2 are estimated equation by equation by OLS with cluster means subtracted from all data. The subtraction of cluster means removes not only the fixed effects in 1 but also the cluster invariant prices in both the equations. The resulting "within" estimates of b^0_G, γ^0_G, b^1_G and γ^1_G are consistent in spite of the lack of

information on prices and fixed effects. Denote these parameter estimates as $\bar{b}^0_G$, $\bar{\gamma}^0_G$, $\bar{b}^1_G$ and $\bar{\gamma}^1_G$. Although we are not be dealing here with a "complete set" of demand equations, in which the budget shares of the goods add to unity. These parameter estimates respect the adding-up conditions in the sense that, for a complete system the vectors of parameter estimates b^0_G and γ^0_G add to zero. Denote the residuals from the two sets of regressions as e^0_{Gic} and e^1_{Gic}. These can be used to give consistent estimates of the variances and covariances of the residuals in (1) and (2) as follows:

$$\bar{\sigma}^{00}_{GH} = (n\text{-}c\text{-}k)^{-1} \sum_c \sum_i e^0_{Gic}\, e^0_{Hic} \qquad 11a$$

$$\bar{\sigma}^{11}_{GG} = (n^+_G\text{-}c\text{-}k)^{-1} \sum_c \sum_i (e^1_{Gic})^2 \qquad 11b$$

$$\bar{\sigma}^{10}_{GG} = (n^+_G\text{-}c\text{-}k)^{-1} \sum_c \sum_i e^0_{Gic}\, e^1_{Gic} \qquad 11c$$

Where n^+_G is the sum of n^+_{CG} over clusters and *n* is the total number of households. In (llb) and (llc) the summation is taken over all households that record unit values, while in (lla), it runs over all households. Note that equations (llb) and (llc) estimate only variances and covariances within goods, and that the covariances of the residuals between goods are assumed to be zero both within the unit value equation and between the two equations.

Expenditures and quantities are inevitably measured with error, so that when unit values are calculated by dividing one by the other, there will be generally be a correlation between the residuals in the budget share and unit value equations.

The second stage of estimation begins by using the first stage estimates to calculate the parts of mean cluster shares and unit values that are not accounted for by the first-stage variables. Define

$$\bar{y}^0_{GC} = w_{Gc} - (\bar{\alpha}^0_G + \bar{\beta}^0_G \ln X_c + \bar{\gamma}^0 Z_{zc}) \qquad 12a$$

$$\bar{y}^1_{GC} = w_{Gc} - (\bar{\alpha}^1_G + \bar{\beta}^1_G \ln X_c + \bar{\gamma}^1 Z_{zc}) \qquad 12b$$

Define the matrix Q as the variance covariance matrix across clusters of the theoretical magnitudes y^0_{GC}, defined as above but using the true parameters β^0 and γ^0. S is the corresponding matrix for y^1_{GC}, and R the covariance matrix.

Denote the population counterparts corresponding to (lla), (llb) and (llc) by Σ, Ω, and Γ respectively. From the population version of (12), and taking probability limits over all clusters,

$$S=\Psi M\Psi' +\Omega N_{+}^{-1} \quad (14)$$

$$R=\Psi M\theta' +\Gamma N^{-1} \quad (15)$$

Where M is the variance covariance matrix of the unobservable price vector, $N+=plim C^{-1}\sum_C D(n^{+}_C)^{-1}$,with $D(n^{+}_C)^{-1}$ a diagonal matrix formed from the elements of n^{+}_{CG} and N^{-1} is the corresponding matrix for the n_C's. Equating sample moments to their population counterparts, calculate the matrix $\bar{B}$ according to

$$\bar{B} =(S-\Omega T_{+}^{-1})^{-1}(\bar{R}-\bar{\Gamma} T_A^{-1}) \quad (16)$$

where a superimposed "-" denotes an estimate and the diagonal matrices T_A and T_+ are the sample counterparts of N and N+, and are given by

$$T_A^{-1} = C^{-1}\sum_C \{D(n_C)\}^{-1}$$

$$T_{+}^{-1} = C^{-1}\sum_C \{D(n^{+}_C)\}^{-1} \quad (17)$$

And C is the total number of clusters in the sample. As the sample size goes to infinity with cluster sizes remaining fixed, B will tend to its population counterpart, i.e.

$$plim\ \bar{B}=B=(\Psi')^{-1}\theta' \quad (18)$$

It is not required that the cluster size become large; by pooling across clusters at the first stage, the first stage parameters are consistent as the number of clusters increases. Similarly, the estimation of price effects rests entirely on the between-cluster variation, and the estimate of B will tend to its true value, as the number of clusters grows large.

Estimates of B do not allow direct recovery of Ψ and θ. However, equation (10) together with (18) allows 8 to be calculated from

$$\theta= B'\{I-D(\xi)B' + D(\xi)D(w)\}^{-1} \quad (19)$$

The matrix of price elasticities E, from (6), is $\{D(w)\}^{-1}\theta-\Psi$, so that, substituting,

$$E= \{D(w)-1B'-I\}\{I-D(\xi)B'+D(\xi)D(w)\}^{-1} \qquad (20)$$

Estimates of e and E are calculated from (19) and (20) by replacing theoretical magnitudes with estimates from the first and second stages and by using the sample mean budget shares for the w-vector.

Chapter 5: Exports and Import of Textiles and Clothing

The textile and garment sector plays an extremely significant role in India in terms of its share in value added, foreign exchange earnings, and employment. With the dismantling of quotas in January 2005 under the Agreement on Textile and Clothing of the WTO, the focus has clearly shifted toward increasing the Indian textile and clothing exports in the world market by paying attention towards competitiveness. Ramachandran (2001) pointed out that the Indian textile industry has the comparative advantage in international market compared to China. The Indian textile industry has several strengths including a supply of cheap cotton, low wages, a good knowledge of production techniques and its slow emergence as a supplier of manmade fibres and yarn at competitive rates. But there are serious problems as well. The high cost of power, capital and lack of sufficient infrastructural development is hindering its progress. Section 5.1 of this chapter covers export of various items of textiles and clothing. Section 5.2 covers import of various textiles and clothing items. After analysing the export and import of various textiles and clothing items, the competitiveness of textile and clothing sector at various stages analysed in section 5.3. Section 5.4 covers the future prospects of textile and clothing sector during the periods 2007-08 to 2011-12 and 2007-08 to 2015-16.

5.1 Exports

5.1.1 Exports of Fibre from India to the Rest of the World

Table 5.1A and 5.13A presents the export of fibre from India to the rest of the world in quantity and value term respectively. The exports of fibres (i.e. Cotton, Wool, Silk, Synthetic Fibres) decreased from 1990-91 to 2000-01 from Rs 576 crores to Rs 476 crores and then increased to Rs 998 crores in 2004-05. Its value increased to Rs. 10176 crores by the year 2007-08 and is anticipated on the basis of first six months data to decline to Rs. 4825 crores during 2008-09. In quantity terms, it decreased substantially from 278.64 million kg to 70.06 million kg during 1990-91-2000-01 followed by an increase to 167.21 million kg in 2004-05. After this it tremendously increased to 1753.32 million kg in 2007-08. For the year 2008-09 fibre exports quantity is expected to decline to 733.27 million kg.

The export pattern of fibres at the disaggregate level, indicates that the cotton fibre exports constitute a large share of total fibre exports. The value of cotton fibre export decreased from Rs 512 crores to Rs 224 crores in the 1990-91 to 2000-01, and increased to 422 crore in the year 2004-05. Increasing trend was observed after that and its value rose to Rs 8865 crores in the 2007-08. The year 2008-09 saw drastic change and its value is anticipated to decrease to Rs 3305 crores. In quantity terms, it decreased from 250.06 million kg to 30.19 million kg during 1990-91 to 2000-01 and then it increased to 86.64 million kg in 2004-05. After this exports of cotton fibres increased very rapidly

and rose to 1557.59 million kg in 2007-08. During 2008-09, it is likely to decrease to 527.52 million kg. During this period export price of cotton fibre increased from US$1.1 per kg in 1990-91 to US$1.6 in 2000-01 and then declined to US$1.5 in 2008-09 with a much fluctuating trend.

In case of silk fibres, the export value increased substantially from Rs 2 crores to Rs 51 crores during the period 1990-91 to 2000-01 followed by a decline to Rs 11 crores in 2004-05, then again increased to Rs 21 crores in 2007-08. For the year 2008-09 it is anticipated to decline to Rs 15 crores. The prices of silk fibre in dollar per kg terms prices increased from US$3.7 to US$5.8 during 1990-91 to 2000-01 and then to US$12.8 in 2004-05, but later fell to US$5.7 in 2007-08 and there after increased to US$10.9 per kg for the year 2008-09.

In case of wool fibre, export increased from Rs 3 crores to Rs 22 crores during the period 1990-91 to 2000-01, and then to Rs 91 crores in 2004-05. It rose to Rs 144 crores for the year 2007-08. It is anticipated at Rs. 150 crores during 2008-09. The export prices of wool fibre, during the period 1990-91 to 2000-01 increased from US$0.6 to US$2.9 per kg and then to US$6.1 during 2004-05. During 2007-08, it increased to US$8.31 and then it marginally higher to US$8.32 in 2008-09.

In case of synthetic fibre, the export value increased from Rs 59 crores to Rs 179 crores during the period 1990-91 to 2000-01 and further increased to Rs 474 crores (CAGR of 27.6 per cent) in 2004-05. It rose to Rs 1146 crores by the year 2007-08. Its value is anticipated at Rs 1354 crores by the year 2008-09. In terms of dollar prices per kg, it first declined from US$1.3 to US$1.1 during 1990-91 to 2000-01 then increased to US$1.4 during 2004-05 and then increased to US$ 1.5 during 2007-08. It increased to US$1.6 in 2008-09.

5.1.2 Exports of Yarn from India to Rest of the World

Table 5.2A and Table 5.14A provide the statistics in regard to export of yarn from India to rest of world in quantity and price term respectively. The value of exports of all yarn increased from Rs 8535 crores to Rs 8676 crores (CAGR of 0.4 per cent) during 2000-01 to 2004-05 and further to Rs 12427 crores in 2007-08 (with CAGR of 12.7 per cent). On the half yearly basis, the value for the entire year 2008-09 is anticipated at Rs. 12955 crores (CAGR of 4.3 per cent). On quantity term, export decreased marginally from 755.39 million kg to 743.93 million kg (CAGR of 0.4 per cent) during 2000-01 to 2004-05, and then to 1143.79 million kg during 2007-08 (with CAGR of 15.4 per cent). For the entire year 2008-09, the values are anticipated to decline marginally to 1140.67 million kg (compound annual decline of 0.3 per cent). The MFA phase out seems to have improved the prospects of Indian textile and clothing industry, but recent global slow down have caused its impact. The cotton yarn export constitutes the major share of yarn export even now, though its share declined from 69 per cent in 2004-05 to 58 per cent in 2007-08.

The value of exports of cotton yarn increased from Rs 478 crores to Rs 6321 crores (CAGR of 29.5 per cent) during 1990-91 to 2000-01 and then declined to Rs 5642 crores in 2004-05 (compound annual decline of 2.8 per cent). It increased to Rs. 7682 crores during the year 2007-08. For the year 2008-09, the anticipated values on the basis of half yearly figures is Rs.7952 crores (CAGR of 3.5 per cent). In quantity terms, export increased from 83.79 million kg to 513.30 million kg (CAGR of 19.9 per cent) over the period 1990-91 to 2000-01 and then decreased to 448.43 million kg (compound annual decline of 3.3 per cent) by 2004-05. Its quantity increased to 664.14 million kg in the year 2007-08 (CAGR of 14.0 per cent). For the entire year 2008-09, values are anticipated at 652.45 million kg (compound annual decline of 1.8 per cent). The MFA phase out seems to have improved the prospects of Indian textile and clothing industry. Its export price per kg declined from US$3.18 to US$2.70 during 1990-91 to 2000-01. It then increased to US$2.8 in 2004-05 and then to US$2.9 in 2007-08. Its value marginally declined to US$2.8 during first six month of the year 2008-09.

In case of silk yarn, the value of exports increased from Rs 9 crores to Rs 43 crores during 2000-01 to 2004-05. Its value then decreased to Rs 37 crores in 2007-08. For the year 2008-09, the anticipated values on the basis of half yearly figures is Rs. 28 crores (decline of 22.8 per cent against the previous year). In quantity terms, export increased from 0.12 million kg to 0.41 million kg during 2000-01 to 2004-05 and then to 0.79 million kg during the year 2007-08. For the year 2008-09, the anticipated values on the basis of half yearly figures are likely to decline to 0.18 million kg. Silk yarn export price increased from US$17.5 to US$23.5 during 2000-01 to 2004-05, and then to US$11.5 during 2007-08. It then drastically increased to US$37.8 for the year 2008-09.

In case of wool yarn, the value of exports increased from Rs 98 crores to Rs 133 crores during the period 2000-01 to 2004-05 and further to Rs 185 crores in 2007-08. For the year 2008-09, the values are anticipated to increase to Rs. 201 crores. In quantity terms, export increased from 3.73 million kg to 4.24 million kg over the period 2000-01 to 2004-05. It then increased to 5.60 million kg for the year 2007-08. On the half yearly basis, the anticipated quantity for the entire year 2008-09 is estimated to decline to 4.95 million kg. Wool yarn export price increased from US$5.8 to US$7.0 per kg during 2000-01 to 2004-05 to US$8.2 during 2007-08, and then to US$ 9.5 during 2008-09.

In case of man made filament yarn, the value of exports increased from Rs 1017 crores to Rs 1205 crores during 2000-01 to 2004-05 and further to Rs 2216 crores in 2007-08. On the half yearly basis, the value for the entire year 2008-09 is anticipated at Rs. 2379 crores. In quantity terms, its value increased from 128.93 million kg to 137.92 million kg during 2000-01 to 2004-05 and then to 273.15 million kg during 2007-08. Its quantity rose to 282.81 million kg in 2008-09.

In case of man made staple yarn, the value of exports of man made staple yarn increased from Rs 1090 crores to Rs 1652 crores during the period 2000-01 to 2004-05 and then to Rs 2307 crores in 2007-08. For the year 2008-09, the anticipated values on the basis of half yearly figures are likely to increase to Rs. 2394 crores. In quantity terms, export increased from 109.32 million kg to 152.94 million kg during 2000-01 to 2004-05 and then to 200.12 million kg during 2007-08. Its quantity is anticipated to increase marginally to 200.29 million kg in 2008-09.

5.1.3 Exports of Fabric (Excluding Knitted) from India to the Rest of the World

Table 5.3A and Table 5.15A show the export of fabric from India to rest of world in quantity and price term respectively. The value of exports of all fabric increased from Rs 1520 crores to Rs 8085 crores (with CAGR of 18.2 per cent) during the period 1990-91 to 2000-01, then further to Rs 10493 crores (CAGR of 6.7 per cent) in 2004-05 and there after marginally to Rs. 10948 crores in 2007-08 (CAGR of 1.4 per cent). On the half yearly basis, the values for the entire year 2008-09 are anticipated at Rs. 13083 crores (with CAGR of 19.5 per cent). In terms of quantity, exports increased from 329.97 million sq. mts. to 1402.17 million sq. mts. (CAGR of 43.6 per cent) during 2000-01 to 2004-05 and there after to 1506.32 million sq. mts. (CAGR of 2.4 per cent) during 2007-08. For the year 2008-09, the anticipated quantity on the basis of half yearly figures is 1711.74 million sq. mts. (CAGR of 13.6 per cent). The price of exports in dollar per sq. mts. increased from US$1.2 to US$1.8 during the period 2004-05 to 2007-08 and then declined marginally to US$1.7 in 2008-09.

The export of cotton fabric increased from Rs 1030 crores to Rs 4457 crores (CAGR of 15.8 per cent) during 1990-91 to 2000-01 and then declined to Rs 4103 crores (compound annual decline of 2.1 per cent) in 2004-05. There after there was marginally increase to Rs. 4166 crores (CAGR of 0.5 per cent) during the period 2007-08. It is anticipated to rose to Rs. 4394 crores (CAGR of 5.5 per cent) in 2008-09. In quantity terms, export increased from 244.03 million sq. mts. to 654.27 million sq. mts. (CAGR of 27.9 per cent) during 2000-01 to 2004-05 followed by marginal rise to 658.42 million sq. mts. by 2007-08. It is anticipated to increase to 695.76 million sq. mts. (5.7 per cent per annum growth rate) during 2008-09. The price of exports in terms of dollar per sq. mts. increased from US$1.4 to US$1.6 during 2004-05 to 2007-08 and then decreased marginally to US$1.5.

In case of silk fabrics, export value increased from Rs 206 crores to Rs 1230 crores during 1990-91 to 2000-01 and further to Rs 1594 crores in 2004-05. Its value declined to Rs. 1336 crores during 2007-08 and then it is anticipated to increase to Rs. 1503 crores in 2008-09. Its export in quantity term increased from 5.39 million sq. mts. to 43.01 million sq. mts. during 2000-01 to 2004-05 but

fell to 34.11 million sq. mts. during 2007-08. Its value decreased to 27.87 million sq. mts. (compound annual decline of 18.3 per cent) for the year 2008-09. The price of exports in terms of dollar per sq. mts. increased from US$8.3 to US$9.7 during 2004-05 to 2007-08 and then increased to US$12.6 in 2008-09.

In case of wool fabrics, export value increased from Rs 3 crores to Rs 136 crores during 1990-91 to 2000-01 and then fell to Rs 95 crores in 2004-05. However, it increased to Rs. 135 crores during 2007-08. On the half yearly basis, the value for the entire year 2008-09 is anticipated at Rs. 199 crores. In quantity terms, export increased from 1.82 million sq. mts. to 3.75 million sq. mts. (CAGR of 19.8 per cent) during the period 2000-01 to 2004-05, and further to 5.40 million sq. mts. during 2007-08. It is anticipated to increase to 7.51 million sq. mts. during 2008-09. The MFA phase out seems to have improved the prospects of Indian textile and clothing industry. The price of exports in terms of dollar per sq. mts. increased from US$5.6 to US$6.2 during 2004-05 to 2008-09.

In case of Synthetic/man-made fabrics, exports increased from Rs 282 crores to Rs 2,263 crores during 1990-91 to 2000-01 and further to Rs 4701 crores during 2004-05. Its value increased to Rs. 5310 crores in 2007-08. For the year 2008-09, the anticipated values on the basis of half yearly figures are likely to be Rs. 6987 crores. The export quantity increased from 78.73 million sq. mts. to 701.14 million sq. mts. (CAGR of 72.8 per cent) during the period 2000-01 to 2004-05 and further to 808.39 million sq. mts. (CAGR of 4.8 per cent) during 2007-08. Its quantity is anticipated to increase to 980.60 million sq. mts. during 2008-09 (with CAGR of 21.3 per cent). The price of exports in terms of dollar per sq. mts. increased from US$1.5 to US$1.6 during 2004-05 to 2007-08 and then marginally to US$1.7 in 2008-09.

The share of synthetic fabric export in total fabrics export is rising steeply over time. During early nineties, cotton was the only main fabrics being exported. The synthetic fabrics exports share has slowly surpassed, export of other fibre fabrics.

5.1.4 Exports of Knitted/ Crocheted Fabric from India to the Rest of the World

The value of exports of Knitted/ Crocheted fabric increased from Rs 153 crores to Rs 199 crores during the period 2000-01 to 2004-05 and then to Rs 364 crores during 2007-08. For the year 2008-09, the values are anticipated at Rs. 507 (Table 5.15A). In terms of quantity, exports increased from 9.08 million kg to 10.17 million kg during 2000-01 to 2004-05 and then to 22.43 million kg (CAGR of 30.2 per cent) in 2007-08 and is further anticipated at Rs. 30.99 million kg (CAGR of 38.18 per cent) during 2008-09 (Table 5.3A). The price of exports in dollar per kg decreased from US$4.4 to US$4.0 during 2004-05 to 2007-08 and then further to US$3.8 in 2008-09.

5.1.5 Exports of Readymade Garments (Knitted/Crocheted) From India to the Rest of the World

The value of exports of Readymade Garments (Knitted/Crocheted) increased from Rs 8163 crores to Rs 11868 crores (CAGR of 9.8 per cent) during 2000-01 to 2004-05 and then further to Rs 17201 crores (with CAGR of 13.2 per cent) by 2007-08. For the year 2008-09, the anticipated value on the basis of half yearly figure is Rs. 19414 crores (CAGR of 12.9 per cent) (Table 5.16A). The quantity of exports in million pieces increased from 556.5 to 781.9 (CAGR 8.9 per cent) during 2000-01 to 2004-05 and then to 1074.2 million (CAGR of 11.2 per cent) during 2007-08. Its quantity is anticipated to rise to 1120.3 million pieces in 2008-09 (per annum growth of 4.3 per cent). Data for some knitted garment exports is measured in kg term. Their quantity in kg term increased from 17.5 million kg to 59.8 million kg (CAGR of 36.01 per cent) during 2000-01 to 2004-05, and then to 85.8 million kg (CAGR of 12.73 per cent) by year 2007-08. Its quantity is anticipated to increase to 98.1 million kg for the year 2008-09 (growth of 14.3 per cent against the previous year) (Table 5.4A). In terms of dollar, the export price per piece increased from US$2.5 to US$3.1 during 1990-91 to 2000-01 and then to US$3.2 during 2004-05 and further to US$3.6 during 2007-08. It further increased marginally to US$3.7 in 2008-09.

5.1.6 Exports of Readymade Garments (Non-Knitted/Crocheted) From India to rest of The World

Table 5.5A and 5.17A presents the exports of readymade Garments (Non-Knitted/Crocheted) from India to rest of World respectively. The value of exports of all textiles of Readymade Garments (Non-Knitted/Crocheted) marginally increased from Rs 17317 crores to Rs 17670 crores (CAGR of 0.5 per cent) during the period 2000-01 to 2004-05 and then further to Rs 21821 crores (CAGR of 7.3 per cent) in 2007-08. The values for the year 2008-09 are anticipated at Rs. 24420 crores (CAGR of 11.9 per cent). The quantity of exports in million pieces decreased from 973.3 to 791.8 (compound annual decline of 5.0 per cent) during 2000-01 to 2004-05 and then rose to 933.95 million pieces (CAGR of 5.7 per cent) by 2007-08. For the year 2008-09, the anticipated quantity of export is estimated at 1097.81 million pieces (CAGR of 17.5 per cent). Data for a few knitted garment exports is reported in kg term. The quantity of export in kg term decreased from 3.6 million kg to 1.9 million kg and increased to 2.8 million kg during 2007-08. Its quantity increased to 4.2 million kg for the year 2008-09. The MFA phase out seems to have improved the prospects of Indian textile and clothing industry. In terms of dollar per piece, the export increased from US$3.9 to US$4.9 during 2000-01 to 2004-05 and further to US$5.8 in 2007-08 and then marginally decreased to US$5.2.

5.1.7 Exports of Made-Ups from India to Rest of the World

The value of exports of all textiles of Made-Ups marginally increased from Rs 5255 crores to Rs 8870 crores (CAGR of 14.0 per cent) during the period 2000-01 to 2004-05 and then further to Rs 9574 crores (CAGR of 2.6 per cent) in 2007-08. For the year 2008-09, the values are anticipated at Rs. 10759 crores (per annum growth of 12.4 per cent) (Table 5.18A). The quantity of exports in

million kg increased from 251.24 to 762.06 (CAGR of 31.9 per cent) during 2000-01 to 2004-05 and then rose marginally to 786.10 million kg (CAGR of 1.04 per cent) during 2007-08. Its quantity increased to 951million kg in 2008-09 (CAGR of 20.9 per cent). Data for some made up export is reported in number term. The quantity of these products in number term increased from 8.4 million pieces to 16.0 million pieces during 2000-01 to 2004-05 and then decreased to 13.6 million pieces during 2007-08. The quantity for the year 2008-09 is anticipated at 16.4 million pieces (Table 5.6A). In terms of dollar per kg the prices decreased from US$4.4 to US$2.5 during 2000-01 to 2004-05 and then marginally increased to US$3.0 during 2007-08 and further to US$2.6 for the year 2008-09.

5.2 Imports

The analysis for imports have been under taken for the period 2000-01 to 2008-09 in terms of quantity and values both. For the year 2008-09, values are anticipated from half yearly data.

5.2.1 Imports of Fibre from World to India

Table 5.7A and 5.19A provide the statistics in regard to import of fibre from World to India in quantity and value term respectively. The value of imports of fibres (i.e. Cotton, Wool, Silk, and Synthetic Fibres) increased during 2000-01 to 2004-05 from Rs 2443 crores to Rs 3079 crores (CAGR of 5.9 per cent). Its value increased to Rs 3279 crores during 2007-08. On the half yearly basis, the value for the entire year 2008-09 is anticipated at Rs. 4433 crores (with CAGR of 35.2 per cent). In quantity terms, imports of all fibers, increased from 330.1 million kg to 356.1 million kg (CAGR of 1.9 per cent) during 2000-01 to 2004-05 and then decreased to 299.8 million kg in 2007-08 (compound annual decline of 5.6 per cent). Its quantity is anticipated to rise to 339.3 million kg in 2008-09 (CAGR of 13.2 per cent). The price of imports of all fibres in terms of dollars per kg increased from US$1.6 to US$1.9 during 2000-01 to 2004-05 and then to US$2.7 in 2007-08, and further to US$3.1 during 2008-09.

The import pattern of fibres at the disaggregate level, indicates that the imports of cotton fibre decreased from Rs 1185 crores to Rs 1136 crores during the period 2000-01 to 2004-05 and then to Rs. 912 crore in 2007-08. Its values are anticipated to increase to Rs 1386 crores in 2008-09. In quantity terms, imports decreased from 212 million kg to 192 million kg during 2000-01 to 2004-05 and then further to 136 million kg in 2007-08. For the entire year 2008-09, the import is anticipated at 168 million kg. Import price of cotton fibre increased from US$1.2 to US$1.3 per kg during the years 2000-01 to 2004-05, and then to US$1.6 during 2007-08 and further to US$1.9 in 2008-09.

In case of Silk fibres, the import value increased from Rs 476 crores to Rs 646 crores during the period 2000-01 to 2004-05 and then to Rs 751 crores in the year 2007-08. It is anticipated to increase to Rs 924 crores during 2008-09. In quantity term, imports increased from 4.7 million kg to 8.5 million kg during 2000-01 to 2004-05 and then declined to 8.1 million kg in the year 2007-08. On

the half yearly basis, the quantity for the entire year 2008-09 is anticipated at 8.9 million kg. The import price of silk fibre decreased from US$22.1 to US$16.8 per kg during 2000-01 to 2004-05 and then increased to US$22.9 during 2007-08, and further to US$24.1 per kg for the year 2008-09.

In case of wool fibres, import shows continue rising trend. It increased from Rs 485 crores to Rs 909 crores during 2000-01 to 2004-05 and then further to Rs 1139 crores in 2007-08. Its value is anticipated to increase to Rs 1383 crores during 2008-09. In terms of quantity the import first increased from 59 million kg to 93 million kg during 2000-01 to 2004-05 (with CAGR of 11.6 per cent) and then to 96 million kg in 2007-08. For the year 2008-09 the values are anticipated at 85 million kg. The import prices of wool fibre, increased from US$1.7 to US$2.2 per kg during 2000-01 to 2004-05, and then to US$2.9 during 2007-08. It there after increased to US$3.8 during 2008-09.

In case of synthetic fibres, the import value increased from Rs 297 crores to Rs 388 crores during 2000-01 to 2004-05 and then to Rs 478 crores in 2007-08. It is anticipated to reach to Rs 739 crores in 2008-09. In quantity term, import during the period 2000-01 to 2004-05 increased from 53.04 million kg to 62.4 million kg (CAGR of 4.2 per cent) and then declined to 59.0 million kg (compound annual decline by 1.8 per cent) by 2007-08. It is anticipated at 78.0 million kg during 2008-09. The price of fabric increased from US$1.2 to US$1.4 per kg during 2000-01 to 2004-05 and then to US$2.0 during 2007-08. It further increased to US$2.2 in 2008-09.

5.2.2 Imports of Yarn from World to India

Table 5.8A and Table 5.20A present the import of yarn from India to rest of world in quantity and value term respectively. The value of imports of all yarn increased from Rs 842 crores to Rs 1818 crores (CAGR of 21.2 per cent) during 2000-01 to 2004-05 and then to Rs 2186 crores in 2007-08 (CAGR of 6.3 per cent). On the half yearly basis, the anticipated value is Rs. 2675 crores (growth of 22.4 per cent against the previous year) for the entire year 2008-09. Its import quantity increased from 101 million kg to 199 million kg (CAGR of 18.5 per cent) over the period 2000-01 to 2004-05 and then increased to 205 million kg for the year 2007-08 (CAGR of 1.0 per cent). The quantity for the entire year 2008-09 is anticipated at 225 million kg (growth of 9.5 per cent against the previous year). The import increased from US$1.8 to US$2.0 per kg during 2000-01 to 2004-05 and then to US$2.7 during 2007-08, and further to US$2.9 during 2008-09.

In quantity terms, import of cotton yarn increased from 2.3 million kg to 3.1 million kg during 2000-01 to 2004-05 and then to 7.1 million kg by 2007-08. It is anticipated to decline to 5.1 million kg in 2008-09. The import per kg declined from US$3.2 to US$2.9 during 2000-01 to 2004-05, but latter increased to US$3.2 in 2007-08. On the basis of first six months, its price marginally decreased to US$3.1 in 2008-09.

In case of silk yarn, import quantity increased from 1.3 million kg to 2.7 million kg during 2000-01 to 2004-05 and then declined to 1.6 million kg during 2007-08. Its quantity is anticipated to decline to 1.3 million kg during 2008-09. Silk yarn import price increased from US$11.9 to US$16.6 per kg during 2000-01 to 2004-05, and then to US$21.0 during 2007-08, and then rose to US$24.5 in 2008-09.

The import of wool yarn is also very low. Its import quantity decreased from 0.27 million kg to 0.19 million kg during 2000-01 to 2004-05 and then increased to 0.66 million kg during 2007-08. Quantity for the entire year 2008-09 is anticipated at only 0.29 million kg. Wool yarn import price increased from US$8.9 to US$17.9 per kg during 2000-01 to 2004-05 and then declined to US$10.7 during 2007-08. There is drastic change during 2008-09 and its price increased to US$ 20.8.

Man made filament yarn constitute the major share of overall yarn import. The value of imports of man made filament yarn increased from Rs 691 crores to Rs 1382 crores (CAGR of 18.9 per cent) during 2000-01 to 2004-05 and then to Rs 1569 crores in 2007-08 (CAGR of 4.3 per cent). It is anticipated to increase to Rs. 2047 crores during 2008-09. In quantity term its, import increased from 93 million kg to 174 million kg (CAGR of 16.9 per cent) during 2000-01 to 2004-05 and then decreased to 154 million kg by 2007-08 (compound annual decline by 4.1 per cent). It is anticipated to increase to 173 million kg (CAGR of 12.3 per cent) in 2008-09.

In case of man made staple yarn, import increased from 4 million kg to 18 million kg during 2000-01 to 2004-05 and then to 42 million kg by 2007-08. It is anticipated to increase to 46 million kg (CAGR of 8.4 per cent) during 2008-09.

5.2.3 Imports of Fabric (Excluding Knitted) from World to India

Table 5.9A and Table 5.21A show the import of fabric from world to India in quantity and value term respectively. The value of imports of all fabric increased from Rs 396 crores to Rs 2179 crores (CAGR of 53.2 per cent) during 2000-01 to 2004-05 and then to Rs 2667 crores (CAGR of 6.9 per cent) in 2007-08. Its value is anticipated to increase to Rs. 2681 crores in 2008-09. In terms of quantity, imports increased from 24 million sq. mts. to 253 million sq. mts. (CAGR of 79.9 per cent) during 2000-01 to 2004-05 and then further to 435 million sq. mts. (CAGR of 19.8 per cent) by 2007-08. The quantity for the year 2008-09 is anticipated to decline to 388 million sq. mts. (decline by 10.9 per cent against the previous year). The MFA phase out seems to have improved the prospects of Indian textile and clothing industry. The price of imports decreased from US$3.6 to US$1.9 per sq. mts. during 2000-01 to 2004-05, and then to US$1.5 during 2007-08. It then marginally increased to US$1.6 on the basis of six months data for year 2008-09.

The import pattern of fabrics at disaggregated level indicates that import quantity of cotton fabric increased from 5.5 million sq. mts. to 82.9 million sq. mts. (CAGR of 97.2 per cent) during 2000-01 to 2004-05 and further to 189.2 million sq. mts. (CAGR of 31.7 per cent) by 2007-08. It is anticipated to decline to 162.8 million sq. mts. during 2008-09. The price of imports decreased significantly from US$4.3 to US$2.3 per kg during 2000-01 to 2004-05 and then further to US$1.6 during 2007-08. It improved marginally to US$1.7 in 2008-09.

In case of silk fabrics, import in quantity term increased from 0.4 million sq. mts. to 52.2 million sq. mts. during 2000-01 to 2004-05 and then to 65.2 million sq. mts. by 2007-08. It is anticipated to marginally increase to 66.1 million sq. mts. The price of imports decreased from US$11.8 to US$2.5 during 2000-01 to 2004-05. It then marginally increased to US$2.7 in 2007-08 before falling down to US$2.5 in 2008-09.

The quantity of fabric imports increased from 0.2 million sq. mts. to 5.3 million sq. mts. during 2000-01 to 2004-05, and then further to 6.2 million sq. mts. by year 2007-08. It is anticipated to decline to 5.8 million sq. mts. during 2008-09. The price of import decreased from US$10.9 to US$6.8 per sq. mts. during 2000-01 to 2004-05, to US$6.7 during 2007-08. The average price during first half of 2008-09 did not change.

Import in quantity term increased from 13.8 million sq. mts. to 87.9 million sq. mts. (CAGR of 58.7 per cent) during 2000-01 to 2004-05 and then further to 136.8 million sq. mts. (with CAGR of 15.9 per cent) in 2007-08. It is anticipated to decline to 115.4 million sq. mts. during 2008-09 (per annum decline by 15.7 per cent). The price of imports decreased from US$2.7 to US$1.0 during 2000-01 to 2004-05 and then to US$0.7 during 2007-08. It is anticipated to decrease marginally to US$0.8 during 2008-09.

5.2.4 Imports of Knitted/ Crocheted Fabric from world to India

The import value of Knitted/ Crocheted fabric increased from Rs 228.1 crores to Rs 270.4 crores (CAGR of 4.3 per cent) during the period 2000-01 to 2004-05 and then to Rs 570.3 crores (CAGR of 28.2 per cent) in 2007-08. On the half yearly basis, the quantity for the entire year 2008-09 is anticipated to increase to Rs. 635.9 crores (growth of 11.5 per cent against the previous year) (Table 5.21A). In terms of quantity, import increased from 16.2 million kg to 19.7 million kg (CAGR of 4.9 per cent) during 2000-01 to 2004-05 and then further to 45.4 million kg (CAGR of 32.1 per cent) in 2007-08. For the year 2008-09, on the basis of half year data, it is anticipated to increase drastically to 95.7 million kg (per annum growth of 110.9 per cent) in 2008-09 (Table 5.9A). The price of import during 2000-01 to 2004-05 and 2004-05 to 2007-08 remained at US$ 3.1per kg. It however decreased drastically there after to US$1.6 during 2008-09.

5.2.5 Imports of Readymade Garments (Knitted/Crocheted) from World to India

Table 5.10A and Table 5.22A presents the imports of readymade garments (Knitted/Crocheted) from World to India in quantity and value terms repectively. The import value of Readymade Garments (Knitted/Crocheted) increased from Rs 30.7 crores to Rs 48.5 crores (CAGR of 12.0 per cent) during the period 2000-01 to 2004-05 and then further to Rs 153.2 crores (CAGR of 46.7 per cent) in 2007-08. The value for the year 2008-09 is anticipated at Rs. 175.5 crores (growth of 14.5 per cent against the previous year). The import in quantity term increased from 1.1 to 1.8 million pieces during 2000-01 to 2004-05 and then to 6.2 million pieces during 2007-08. On the half yearly basis, the quantity for the year 2008-09 is anticipated at 11.2 million pieces. Some import is reported in kg term. The import of such products increased from 0.3 million kg to 4.4 million kg during 2000-01 to 2007-08 and then to 6.9 million kg for the year 2008-09. The import price per piece decreased from US$4.9 to US$3.4 during 2000-01 to 2004-05 and then to US$3.6 in 2007-08. It value decreased drastically to US$2.3 during 2008-09.

5.2.6 Imports of Readymade Garments (Non-Knitted/Crocheted) from World to India

Import in value term of Readymade Garments (Non-Knitted/Crocheted) increased from Rs 68.2 crores to Rs 101.1crores (CAGR of 10.3 per cent) during the period 2000-01 to 2004-05 and then further to Rs 300.5 crores (CAGR of 43.8 per cent) in 2007-08. For the year 2008-09, its value is anticipated at Rs. 324.4 crores (CAGR 7.9 per cent) (Table 5.23A). The quantity of import in million pieces increased from 2.7 to 4.0 (CAGR of 10.17 per cent) during 2000-01 to 2004-05 and then to 9.3 million pieces (CAGR 32.4 per cent) by 2007-08. It increased to 10.9 million pieces for the year 2008-09 (CAGR 18.3 per cent). Import of certain RGM products is reported in kg. Import of such items increased from 0.2 million kg to 1.0 million kg during 2000-01 to 2007-08 and then decreased marginally to 0.9 million kg during 2008-09 (Table 5.11A). The import price decreased from US$5.2 to US$4.9 per piece during 2000-01 to 2004-05 and then increased to US$7.3 in 2007-08. For the year 2008-09, its value decreased to US$6.4.

5.2.7 Imports of Made-Ups from World to India

The import value of Made-Ups increased marginally from Rs 352.3 crores to Rs 382.3 crores (CAGR of 2.1 per cent) during 2000-01 to 2004-05 and further to Rs 493.0 crores (CAGR of 8.8 per cent) in 2007-08. The value for the year 2008-09 is at Rs. 658.3 crores (CAGR of 33.5 per cent) (Table 5.24A). The quantity of imports in million kg decreased from 180.7 to 149.2 during 2000-01 to 2004-05 and then to 186.8 million kg (CAGR of 8.1 per cent) by 2007-08. Its quantity is anticipated to increase to 208.1 million kg in 2008-09 (per annum growth of 13.5 per cent). Import of few made-ups item is reported in number. The import of such items increased from 0.2 million pieces to 1.9 million pieces during 2000-01 to 2007-08. The quantity for the year 2008-09 is anticipated at 6.1 million pieces (Table 5.12A). The import price per kg increased from US$0.43 to US$0.57 during 2000-01 to 2004-05 and further to US$0.65 in 2007-08. For the year 2008-09, on the basis of half year data values are anticipated at US$0.72.

5.3 Competitiveness of Indian Textiles

Competitiveness is a function of factors related to cost of production, as well as those related to non-price factors such as delivery schedules, reliability of producers, and such intangible factors like image of the country/company and brand equity. Together, they define the competitive sinews of a product to compete under free market conditions.

In the sphere of cotton yarn, India is one of the lowest cost producers. International Textiles Manufacturers Federation (ITMF) statistics, 2006 shows comparative cost of production of yarn and fabric of some major textiles producing countries- India, Brazil, China, Italy, Korea, Turkey and USA. Indian cost of Ring Yarn at US$2.13 per kg is much lower than USA (US$2.81 per kg.), Italy (US$3.20 per kg.) and China (US$2.89 per kg.) during 2006 (see Table 5.1). Cheap availability of raw material and low labour cost are the major causes of low cost of production of ring yarn in India. In O-E yarn production, India is much competitive as compared to other countries. The analysis based on ITMF data include Pakistan in their cost comparative analysis. This is one major limitation of ITMF data as Pakistan is one of India's key competitors. Gherzi Eastern Limited data helps in making comparison in this regard. Gherzi study shows that India's labour cost is very close to China's, but higher than that of Pakistan, which gave Pakistan major advantage. Power cost in India is also quite high compared to Pakistan and China. The cheap cotton availability is the major advantage India enjoyed compared to even Pakistan and China. (see Table 5.2).

The cost comparison of other items using ITMF data show that India is much competitive in the international export market in case of woven ring yarn fabric shown by ITMF data. In 2006, total fabric cost for India was US$ 0.627 per metre. India's closest competitor was Brazil with per metre fabric cost being US$ 0.715. Chinese, US and Italian fabric incurred per metre fabric cost of US$ 0.740, US$ 0.837 and US$ 1.004 respectively (see Table 5.1). Here also raw material and labour cost components were major determining factors for competitiveness of Indian woven fabric. Similarly, in case of knitted ring yarn fabric, India is much competitive as compared to its competitors. In 2006, per metre cost of knitted fabric was US$ 0.511 which was much less than its competitors. In 2006 its closest competitor was Korea with per metre knitted fabric cost of US$ 0.621 (see Table 5.1). Here also raw material and labour cost components were most important factors for its competitiveness. It is notable here that in case of both woven and knitted fabric, Chinese fabric had a somewhat lower labour cost but it is more than compensated by cheap raw material availability in India.

Table 5.1

International Cost Comparisons-2006

	Cost							Index: Italy = 100						
	Brazil	**China**	**India**	**Italy**	**Korea**	**Turkey**	**USA**	**Brazil**	**China**	**India**	**Italy**	**Korea**	**Turkey**	**USA**
Total Costs of Ring-Yarn (US$/kg. yarn)	2.65	2.89	2.13	3.20	2.54	2.61	2.81	83	90	67	100	79	82	88
Total Cost of O-E yarn (US $/kg. yarn)	1.85	2.28	1.52	1.96	1.80	1.89	1.75	95	116	78	100	92	96	89
Manufacturing Costs of Ring Yarn Weaving (US $/ metre of fabric)	0.21	0.19	0.22	0.40	0.25	0.23	0.30	53	48	55	100	63	58	75
Manufacturing Costs of O-E Yarn Weaving (US $/ metre of fabric)	0.20	0.18	0.22	0.43	0.26	0.24	0.31	47	42	51	100	60	56	72
Total costs of Woven Ring - Yarn Fabric (US $/ metre of fabric)	0.715	0.740	0.627	1.004	0.733	0.728	0.837	71	74	62	100	73	73	83
Total Costs of Woven O-E Yarn Fabric (US $/ metre of fabric)	0.662	0.748	0.595	0.911	0.704	0.707	0.741	73	82	65	100	77	78	81
Manufacturing Costs of Ring Yarn Knitting (US$/ metre of fabric)	0.033	0.027	0.020	0.070	0.029	0.024	0.045	47	39	29	100	41	34	64
Total Costs of Knitted Ring - Yarn Fabric (US $/ metre of fabric)	0.643	0.692	0.511	0.806	0.612	0.624	0.691	80	86	63	100	76	77	86
Manufacturing costs of O-E Yarn Knitting (US$ / metre of fabric)	0.04	0.031	0.025	0.090	0.035	0.029	0.058	46	34	28	100	39	32	64
Total Costs of Knitted O-E Yarn Fabric (US $/ metre of fabric)	0.70	0.846	0.568	0.791	0.679	0.705	0.685	89	107	72	100	86	89	87
Source: ITMF (International Production cost Comparison) 2006														

Table 5.2 Costs of various factors in different countries							
	India	**Bangladesh**	**Indonesia**	**Egypt**	**China**	**Pakistan**	**Vietnam**
Costs of Various Factors in Different Countries, 2006:							
Currency conversion rate against $US	Rs 45	Tk 71.8	Rp 9275	EGP LE 6.02	Cny 7.98	Rs 60.2	Vnd 16708
Clean cost of cotton to produce per kg of yarn - 60/2 Combed Ring Yarn on Cones for Weaving /1/	214	251	251	246	251	251	251
Raw water cost (US cents per cubic meter)/2/	14*&46**	Ground water#	Ground water#	0.23	42	18.2	24
Cost power (US cents/kwh) Average	10	5	6.3	4	8.5	6.1	6.5
Source of power	Grid	Captive	Grid	Grid	Grid	Grid	Grid
Cost-steam fuel (US cents/kg of steam)	1.1	0.8	1	1	2	2	1.6
Fuel	Coal	Gas	Furnace oil	Furnace oil	Coal	Furnace oil	Furnace oil
Cost-labor wages, including all benefits (US cents per hour) Average/3/	62	27	52	60	57	39	29
Costs of Various Factors in Different Countries, October 2001–March 2002:	**India**	**Bangladesh**	**Indonesia**	**Sri Lanka**	**China**	**Pakistan**	
Interest rate/4/	LIBOR3.0% + 2.5-3-0%	LIBOR3.0% + 2.50%	LIBOR3.0% + 2.50%	LIBOR3.0% + 3%	6%	5.60%	
Rate of interest on foreign-currency long-term loan	11–14%	14–16%	16–18%	16–18%	5.50%	13–14%	
Rate of interest on local currency	6–9%	14–16%	16–18%	16–18%	3%	13–14%	
Rate for technology upgradation	10.34 or 50%:TUFS	10%	10%	5–6.66%	10%	10%	
Rate of depreciation for textile machinery	2-4%	2.95%	11.48%	10%	About 0%	4.70%	
Inflation rate, yearly average	7–9%	11–13%	4–6%	6–8%	5.50%	8–9%	
Preshipment credit up to 180 days	LIBOR + Max.1%	LIBOR + 2.5%	LIBOR + 2.5%	LIBOR + 3%	LIBOR + 2%	LIBOR + 2%	
Postshipment credit	LIBOR + Max.1%	LIBOR + 2.5%	LIBOR + 2.5%	LIBOR + 3%	6%	LIBOR + 2%	
Preshipment in local currency up to 180 days	Max. PLR-1.5%	10%	18.00%	18–20%	5.50%	13.50%	
Postshipment in local currency	Max. PLR-1.5%	10%	18%	18–20%	5.50%	13.50%	

Notes 1: Raw material cost for yarn is lowest in the case of India based on Gherzi 2006 data.
2: For Raw water cost in case of India: * for borewell cost is 14 US cents per cubic meter and ** for Industrial Development Corporation 46 US cents per cubic meter, for Bangladesh and Indonesia # ground water is used and thus only treatment cost.
3: India's per hour wages are in line with some of the reference countries.
4: China's low-interest rates for technology upgradation are accelerating its investments in the textiles sector. For other countries The London Interbank Offered Rate (LIBOR) is the world's most widely used benchmark for short-term interest rates. It's important because it is the rate at which the world's most preferred borrowers are able to borrow money. It is also the rate upon which rates for less preferred borrowers are based. For example, a multinational corporation with a very good credit rating may be able to borrow money for one year at LIBOR plus four or five points.
Source: Gherzi Eastern Limited (2002 & 2006)

5.3.1Competitiveness Mainly in Grey/ Unprocessed and low Value Added Products

The above analysis reflects India's competitiveness is confined to grey/ unprocessed products such as grey yarn and grey fabric. Dyeing and processing segment of the Indian textiles industry is not so technologically well advanced due to restrictive policy regime in the past. This is reflected in the relatively inferior quality of domestically dyed & processed yarn and fabric. This has resulted in a comparatively much larger share of grey yarn and fabric as compared to that of dyed and finished yarn and fabric in Indian textiles exports. During 2007-08, the exports of cotton woven fabric amounted to US$ 1035 million out of which dyed and printed cotton woven fabric accounted for US$ 400 million i.e. 38.6% of the former. Similarly, exports of man made woven fabric during 2007-08 was of the order of US$ 804 million out of which dyed and printed woven fabric were of US$ 296 million i.e. 36.7% of the former. In case of knitted and crocheted fabric condition is worse. In this segment total export is to the tune of US$ 90.34 million during 2007-08, out of which 25.3% is in the form of dyed and/or printed products. This shows the urgent need for the modernization of the dying and processing segment of the industry along with other value added processing stages.

The low realisation per unit value of export is another indicator of low value addition. The unit value realization for woven cotton and blended fabrics is US$1.57 per sq. mts. In case of man made fabric exports, it is US$1.64 and for knitted and crocheted fabric (of both cotton and manmade fibres) it is US$4.03.

5.3.2 Relative Competitiveness of Powerloom Sector viz Other Sector of Production

The competitiveness of products produced in mill sector can be judged by looking at the various varieties of items produced by the mill sector and supplied for the domestic consumption. In 2007-08 total domestic supply of wearable and non wearable cotton cloth were 525.02 and 64.52 million sq. mt. Among cotton wearable items denims had the largest share with supply of 169.65 million sq. mts., which is 32.3% of total wearable sorts during 2007-08. Second most important group of items were poplin creps, twills chintz and cellular with packing for domestic consumption being 86.09 (16.4%) million sq. metres. Another important group of items were shirting & suics with 57.70 (10.9%) million sq. metres, mandapalam, cambric & lawns with 37.23 (7.1%) million sq. metres, drills, gaberdines and corduroys with 29.88 million sq. metres, long cloth below 54" width with 27.65 (5.2%). Dhoties and sarees had negligible share in total cotton wearable cloth supplied by the mill sector. Among non-wearable item groups of cotton supplied by textile mills for domestic consumption are bed sheets, chadars, sheetings & marking above 54" width had the largest share with supply of 22.64 (35.23%) million sq. meters. Another important group of items were lining and tailor canvas with domestic supply of 20.50 (31.8%) million sq. mtr (Table 5.3). In case of blended cloth total domestic supply of wearable and non wearable items were 184.11 and 13.19 million sq. mt. during 2007-08. Within the blended cloth segment satin, coating & suiting, denims and shirting and sucis are the most important groups for domestic consumption (Table 5.4). In case of 100% non-cotton cloth

domestic supply is much less as compared to cotton and blended cloth. During 2007-08 total domestic supply of wearable and non-wearable items of 100% non-cotton cloth by the textile mills were 13.66 and 1.75 million sq. mt. respectively. Thus mill sector would remain competitive in large widths and good quality products.

Table 5.3
Variety Wise Packing Of Cotton Cloth For Domestic Consumption By The Textile Mills

(Mn. sq. mtr.)

Variety	2003-04	2004-05	2005-06	2006-07	2007-08
(Wearable Sorts)					
Dhoties	4.26	3.35	6.47	2.3	0.48
Sarees	0.09	0.13	0.63	0.05	-
Mulls, Voils, Dorias & Printed Voils	19.35	15.52	24.98	17.77	20.12
Poplin Creps, Twills Chintz and Cellular	82.7	82.54	98.8	89.97	86.09
Long Cloth Below 54" Width	35.41	29.59	33.29	26.18	27.65
Shirting and Sucis	52.26	53.32	57.19	58.23	57.4
Madapalam, Cambric,Lawns	10.91	11.39	17.23	30.73	37.23
Drills, Gaberdines and Corduroys	63.37	75.85	81.06	86.86	29.88
Denims	125.56	172.09	212.52	192.62	169.65
Satins, Coating, Suiting	37.78	43	49.05	37	24.93
Flannelettes	1.29	1.58	2.69	1.34	0.28
Dosuti/ Dedsuti	3.8	4.27	7.54	2.61	0.9
Other Wearables	35.02	47.76	50.59	61.62	70.41
Total	471.8	540.39	642.04	607.28	525.02
(Non Wearable Sorts)					
Mosquito Netting	-	-	-	-	-
Bed Tickings	0.04	0.01	0.91	-	-
Bed Sheets Chadars Sheetings and Marking above 54" Width	106.9	121.62	148.92	53.11	22.64
Tapestry Curtain and Furnishing	0.67	0.39	1.59	0.27	0.08
Towels and Towelling Cloth	4.17	1.35	1.73	2.49	2.93
Lining and Tailors Canvas	7.21	7.39	13.63	19.06	20.5
Filter, Lint and Polishing Cloth	0.22	0.05	0.51	0.06	0.04
Canvas and Ducks	8.31	14.3	15.46	22.08	13.34
Other Non-Wearables	3.44	2.42	3.79	4.64	4.99
Total	130.96	147.53	186.54	101.71	64.52
Grand Total: (Wearable + Non-Wearable)	602.76	687.92	828.58	708.99	589.54
Source: Compendium of Textiles Textiles Statistics, 2007-08					

Table 5.4
Variety-Wise Packing Of Blended/Mixed Cloth For Domestic Consumption By The Textile Mills

(Mn. sq. mtr.)

Variety	2003-04	2004-05	2005-06	2006-07	2007-08
(Wearable Sorts)					
Dhoties	0.61	0.61	0.89	0.58	0.57
Sarees	0.42	1.11	1.61	0.06	0.17
Mulls, Voils, Dorias & Printed Voils	2.96	2.08	2.1	1	0.83
Poplin Creps, Twills Chintz and Cellular	5.44	7.13	3.14	14.61	12.84
Long Cloth Below 54" Width	5.89	7.65	8.15	1.93	1.7
Shirting and Sucis	50.95	51.22	59.76	40.24	39.37
Madapalam, Cambric,Lawns	3.8	4.18	4.68	4.43	5.45
Drills, Gaberdines and Corduroys	5.23	4.72	3.03	5.71	7.26
Denims	5.69	8.49	8.92	13.01	47.56
Satins, Coating, Suiting	48.84	51.99	57.65	52.71	60.45
Flannelettes	0.06	0	0.07	0.08	0.05
Dosuti/ Dedsuti	0.06	0.04	0.14	0.02	0.02
Other Wearables	8.46	8.84	8.06	6.54	7.84
Total	138.41	148.06	158.2	140.92	184.11
(Non Wearable Sorts)					
Mosquito Netting	0	0	0	0	0
Bed Tickings	0	0.12	0.03	0	0
Bed Sheets Chadars Sheetings and Marking above 54" Width	8.35	10.84	13.15	7.66	9.2
Tapestry Curtain and Furnishing	0.41	0.35	0.37	0.48	0.41
Towels and Towelling Cloth	0.07	0.04	0.12	0.05	0.02
Lining and Tailors Canvas	0	0.48	0.51	1.1	0.71
Filter, Lint and Polishing Cloth	0.37	0.41	0.11	0.65	0.05
Canvas and Ducks	0.48	0.38	0.62	0.6	0.4
Other Non-Wearables	7.64	8.56	6.66	2.92	2.4
Total	17.32	21.18	21.57	13.46	13.19
Grand Total: (Wearable + Non-Wearable)	155.73	169.24	179.77	154.38	197.3

Source: Compendium of Textiles Textiles Statistics, 2007-08

Above analysis clearly brings out that the mill sector is competitive only in a few products, which are mainly produced on large scale. Modern looms run fast and size of production in a given lot is important for achieving scale economies. Mill sector looses its competitive advantage in case the product demand is in smaller lots to meet the requirement of small garment units spread all over the country. Apart from that mill sector is finding hard to compete in other products.

The cause for this state of affairs is that powerloom segment is cost competitive. Handlooms sector is loosing its competitiveness and its share in production is declining fast. In the field survey conducted by NCAER, New Delhi during 2008-09 it was found that cotton bed sheet made in powerloom costs Rs.14.32 per sq. mt. On the other hand, similar bed sheet costs Rs. 29.30 per sq. mt. if made in handloom. The sarees made of blend of cotton and manmade fibres per sq. mt. costs Rs. 15.51 and Rs. 40.76 in powerloom and handloom respectively (Table 3.1A & Table 3.6A). Handloom sector is efficient and competitive for a few varieties only.

The analysis of average realization of price of fabrics produced in powerloom and mill sectors show a wide gap in rates of the two sectors. The comparison of market prices of cloth produced in the two sectors during March, 2008 indicates that the price of grey cotton cloth produced in powerloom was Rs 15.24 per metre as compared to ex-mill price of cotton cloth at Rs. 34.37. Market price of grey synthetic cloth produced in powerloom was Rs. 8.90 per metre as compared to ex-mill price of the same cloth at Rs. 54.30 per metre. In case of blended cloth produced in the two segments the prices were Rs. 17.15 and Rs 46.89 per metre respectively (see Table 5.5). Even if one adds the cost of dying and any other value addition assuming better processing facilities in case of mill sector the gap would still be too high. The gap is wide even to discount for any quality of fabrics.

The analysis of cost using NCAER 2008-09 survey data brings out the fact that despite significant economic reforms since 2000, the mill sector is not able to withstand the competition from powerloom sector. The future scenario is also unlikely to change in a significant manner and powerloom sector is likely to remain competitive via-a-vis other sectors. In fact, the handloom sector is finding it extremely difficult to survive and is competitive only in a few artisanal products. The share of mill sector is unlikely to grow rapidly in future as well.

Table 5.5
Average Prices of Mill-Made and Powerloom Cloth

Rs./mt.

Period	MILL CLOTH						POWERLOOM CLOTH (GREY)		
	Cotton cloth		Blended cloth		Synthetic cloth		Market price		
	Ex-mill	Retail	Ex-mill	Retail	Ex-mill	Retail	Cotton cloth	Belended cloth	Synthetic cloth
2005									
March	34.37	50.2	46.89	68.52	54.3	76.27	15.21	17.15	9.02
June	34.37	50.2	46.89	68.52	54.3	76.27	15.24	17.15	8.90
September	34.37	50.2	46.89	68.52	54.3	76.27	15.24	17.15	8.90
December	34.37	50.2	46.89	68.52	54.3	76.27	15.24	17.15	8.90
2006									
March	34.37	50.2	46.89	68.52	54.3	76.27	15.24	17.15	8.90
June	34.37	50.2	46.89	68.52	54.3	76.27	15.24	17.15	8.90
September	34.37	50.2	46.89	68.52	54.3	76.27	15.24	17.15	8.90
December	34.37	50.2	46.89	68.52	54.3	76.27	15.24	17.15	8.90
2007									
March	34.37	50.2	46.89	68.52	54.3	76.27	15.24	17.15	8.90
June	34.37	50.2	46.89	68.52	54.3	76.26	15.24	17.15	8.90
September	34.37	50.2	46.89	68.52	54.3	76.26	15.24	17.15	8.90
December	34.37	50.2	46.89	68.52	54.3	76.26	15.24	17.15	8.90
2008									
March	34.37	50.2	46.89	68.52	54.3	76.26	15.24	17.15	8.90

Source: Compendium of Textiles Statistics, 2007-08

5.3.3 Lack of Dyeing Facilities

The major problem facing the structure of textile and clothing sector in this kind of scenario is lack of good infrastructure to develop dyeing/ processing units. The small fabrics producing units belonging to powerloom sector are not in position to come out with better dyeing units, which is economical at large size and require huge investment. But the large dyeing units find its survival very uneconomical for catering to the needs of small powerloom units producing in small lots. One dyeing units catering to the processing requirement of large number of powerloom units is not working well due to spread of units increase transport and management costs make co-ordination difficult. A few powerloom units have experimented the installation of modern dyeing units in a co-operative arrangement, but this has yet to become a wide spread phenomenon. This lack of dyeing facilities is badly affecting the quality of fabrics available for garment units.

This explains the poor quality fabric available to Indian garment producers compared to international standards. This affects our competitiveness in apparel sector. A large number of garment unit producing high value and designer garments products resort to import for good quality fabrics. Thus there exists is a major gap in the garment value chain. This mismatch needs to be corrected and Government incentives are required for targeting incentives in a proper direction to allow good dying infrastructure to develop.

5.3.4 Supply Chain Management

The Indian textile and clothing industries have one of the longest and most complex supply chains in the world, with existence of many intermediaries between the farmer and the final consumer. Each intermediary not only leads to lengthening of lead times, but also adds to costs. By the time the product reaches the final consumer, price of it increases manifold. This has to be reduced if India has to become competitive. The industries would need to develop supply chain management SCM perspective and rationalize costs at each stage in the entire supply chain, and not only within their own units. Hong Kong apparel industry did take this initiative, and has managed to shrink the supply chain in terms of lead times, as well as costs.

In recent years modern garment units are increasingly emphasizing on supply chain management (SCM) which refers to "delivery of enhanced customer and economic value through synchronized management of the flow of physical goods and associated information from sources to points of consumption." In a dynamic environment where demand is uncertain and significantly seasonal, where the product life cycles are short and where the competitive intensity is high—companies that are able to perform functional integration tend to outperform others. (Verma, 2002)

The supply chain in India is extremely fragmented mainly due to the government policies and lack of coordination between industry and relevant trade bodies. It is noteworthy that the countries that are globally competitive are the ones which have a significantly consolidated supply chain. Some of the countries with much less fragmented supply chains are Korea, China, Bangladesh, Turkey, Pakistan and Mexico, and these are close competitors of India in global market for exports.

5.3.5 Low Labour Cost in Production of Indian Apparel

Despite some glaring problems of the Indian apparels industry there is immense potential for growth for in Indian apparel exports. Garment sector is very labour intensive in India, and thus labour cost assumes much significance in per piece cost of garment production. India compares very favourably across the developing countries in terms of low labour costs for same skill of labour. Bangladesh, Pakistan and Vietnam are however, countries having low labour costs compared to India. However, empirical evidence suggests that low wages are not always a factor of competitiveness particularly in case of good quality designer garments. Quite often high wages are paid to skilled labourers as remuneration for the high levels of skill and productivity which, in turn are important factors of export competitiveness. It is observed that export oriented garment unit pay higher wages to their labourer than the domestic market oriented units. This difference in wage rates is attributed to the unique and indispensable skills of designers, pattern makers and craftsmen, as well as to better-trained cutters and tailors employed by exporting firms. However, size of units is also crucial and is not always the

quality which is deciding factor for wage rate. Country currently has a 3.4 per cent share in the global market. Proliferation of retailer driven global supply chains in recent times means that the highest value activities are in designing, distribution, branding and marketing. For this it is important that both backward and forward linkages be established domestically. India already produces good quality yarn, but integration in the industry is weak as is the capacity to deliver quality products on a timely and flexible schedule. Policy-makers must now identify a strategic direction for the industry to ensure that sectoral initiatives impel rather than impede growth (Economic and Political Weekly, 2005).

5.4 Export Potential

Bedi & Cororation, IFPRI(DP), 2008, made exports projection for India till 2015-16 on the basis of its competitive advantage. In 2007–2008, total availability of cotton and synthetic fabrics equivalent is estimated to be 52161 million sq. metres out of which exports are estimated at 9084 million square meters. As already discussed in Chapter-4 availability of cotton and synthetic fabrics equivalent are projected at 70482 million sq. metres and 97732 million sq. metres during 2011-12 and 2015-16 respectively. The estimates made by Bedi & Cororation, IFPRI(DP), 2008, have been reviewed considering the global slow down, which has already caused much slackening in Indian exports during 2008-09. Assuming export growth of 5.5 % during 2007-08 to 2011-12 and 9.7% during 2007-08 to 2015-16, textiles and clothing exports are projected to be 11254 million sq. metres by 2011-12, which will further grow to 16298 million square metres by 2015-16.

Chapter 6 Technical Textiles

Technical textiles are also known by various other nomenclatures also such as industrial textiles, functional textiles, engineering textiles, invisible textiles and hi-tech textiles. They can be defined as textile materials and products manufactured primarily for their technical performance and functional properties rather than their aesthetic or decorative characteristics. They are used across a wide range of economic activities such as agriculture, construction, defence, roads/highways, dams, hospitals, automobiles, shipbuilding, aircrafts, aerospace, packaging, upholstery/interior furnishings, sport equipments, environmental protection, hoardings, etc. Technical textiles are used individually or as a component/part of another product to improve the performance of the product. The examples of technical textiles used individually for specific functions are fire retardant fabric for uniforms of firemen, coated fabric as awnings, airbags, carpets etc. The examples of technical textiles as a component or part of another product are tyre cord fabrics in tyres, interlining in shirt collars, webbings in seat belts etc. They are also used as accessories in processes to manufacture other products like filter fabric in food industry or paper maker felt in paper mills.

Technical textiles is a knowledge based research oriented industry and has been slowly but steadily gaining ground due to one or more of the reasons such as: functional requirement, health & safety; cost effectiveness; durability; high strength; light weight; versatility; customization; user friendliness; eco friendliness; logistical convenience etc.

There are 12 major segments of technical textiles divided on the basis of their various applications- Clothtech (used in garments, shoes, bags etc), Packtech (used for packaging and protective coverings), Sporttech (used in sports equipments, outfits etc), Mobiltech (used in automobiles, aircrafts, shipbuilding etc.), Buildtech (used in construction of buildings, house structures, dams, tunnels etc), Hometech (used by households), Indutech (used in industrial processes like filtration, cleaning, seals etc.), Meditech (used in hospital dressings and for hygiene), Protech (used for protection of persons and properties), Geotech (used for earth and road construction, drainage system, civil engineering industry etc), Agrotech (used in agriculture and landscape gardening, horticulture, forestry, fences, fishing etc) and Oekotech (used for environmental protection). The Indian technical textile industry has presence in all these 12 segments but has been primarily active in the clothtech, packtech and sporttech segments. The production, however, has been limited to commodity products. But there are some units that are also engaged in production of high-end products like parachute fabrics, balloon fabrics, ballistic helmets etc. Further, the production of technical textiles is limited and scattered across various size class of units ranging from Trans National Corporations (TNCs) to unorganized sector units. It is to be noted that various size class units have different product mix. For example, small scale and unorganized sector units are engaged in the products like HDPE/PP bags, fishnets,

shoe laces, canvas/tarpaulin, stuffed toys, zip fasteners, filter cloth, awnings & canopies, etc. However, like conventional textiles, the specialized yarn and fabrics (woven as well as nonwoven) are produced in the large and medium scale but the converters which are converting these fabrics into finished goods are in small scale sector and even in cottage sector. On the other hand, TNCs and large scale units produce hi-tech products in segments like Mobiltech, Indutech, Meditech, etc. Some of the major TNCs engaged in the production of technical textiles products in the country are Johnson & Johnson, 3M, Procter & Gamble, Kimberly Clark, etc. Similarly, major domestic players in the industry are Entremonde Polycoaters, Supreme Nonwovens Pvt. Ltd., Garware Wall Ropes, Century Enka, Techfab India Ltd., Ahlstrom, Pacific Non Woven, KK Nonwovens, Surya Textech, etc. Still many of the technical textiles products that are not produced domestically in sufficient quantity have to be imported to fulfill their domestic demand.

Technical textiles are a major activity in developed countries which have been gradually switching over from conventional textiles to technical textiles. In 2000, technical textiles consumed around 22% of total fibre consumption globally. In the year 2005, the world market for technical textiles was estimated to be around 19.68 million tones with a value of US$ 107 billion which is expected to increase to 23.77 million tones with a value of US$ 127 billion by 2010 (Technology Mission on Technical Textiles) In 2005 world fibre consumption was 60.5 million tones (Compendium of International Textiles Statistics). In Western Europe and USA, technical textiles account for over 40 percent of their textile manufacturing activity. Even in China technical textiles activity accounts for around 20 percent of textiles activity, while in India it is less than 10 percent. Similarly on the consumption front, consumption of technical textiles is the highest in industrialized countries. USA, Western Europe and Japan account for about 52 percent of the total technical textile consumption in the World. Presently, China and India consumes around 13% and 4% of total technical textiles consumption. In 2001-02 market size of technical textiles consumption was Rs. 15196.12 Crore with per capita consumption of Rs 148 (Report of the Expert Committee on Technical Textiles).

During 2008-09 value of output of technical textiles in the country is estimated to be Rs 43989 crore, out of this Rs. 20589 crore worth of technical textiles came from the unorganised sector, which is around 46.80% of the value of domestic production of technical textiles. In 2000-01 production of technical textiles in the country were Rs 17434 crore of which unorganised sector production were Rs. 8409 crore. Thus total technical textiles production in the country grew by 12.26% per annum during 2000-01 to 2008-09. Estimated value of production of different technical textiles items in 2008-09 and their projected value in 2015-16 are given in Table 6.1.

Table 6.1
Production of Technical Textiles Rs. Crore

NIC Code	Activity	2008-09 (Estimated)	2015-16 (Proj.)
17213	Manufacture of mosquito nets	72	134
17214	Manufacture of bedding, quilts, pillows, cushions and sleeping bags	1581	3083
17215	Manufacture of tarpaulin	974	1781
17219	Manufacture of other made up textile goods except apparel n.e.c.	3677	6302
17222	Manufacture of cotton carpets	721	1319
17223	Manufacture of woollen carpets	2668	4877
17224	Manufacture of silk carpets	470	859
17226	Manufacture of carpets, rugs and other covering of jute, mesta and coir	1662	3038
17229	Manufacture of other floor coverings (including felt) of textile, sannhemp and other kindred fibres n.e.c.	50	91
17231	Manufacture of thread, including thread ball making	1091	1995
17232	Manufacture of jute/hemp rope and cordage	1447	3200
17233	Manufacture of coir rope and cordage	452	998
17234	Manufacture of other rope and cordage other of jute/mesta and coir	424	938
17235	Manufacture of nets(except mosquito net)	180	307
17236	Manufacture of tapes, newar and wicks	1187	2623
17239	Manufacture of other cordage, rope nets etc n.e.c.	1096	2421
17293	Manufacture of linoleum and similar products	1	1
17294	Manufacture of gas mantles	0	0
17295	Manufacture of made-up canvas goods such as tents and sails etc.	158	288
17296	Manufacture of wadding of textile materials and articles of wadding such as sanitary towels and tampons	1181	2157
17297	Manufacture of metallised yarn or gimped yarn; rubber thread or cord covered with textile material; Textile yarn or strip, impregnated, covered or sheathed with rubber or plastics	5223	10178
17298	Manufacture of waterproof textile excluding Tarpaulin.	652	1194
17299	Manufacture of other textiles/textile products n.e.c.	9517	17399
18102	Manufacture of rain coats of waterproof textile fabrics or plastic sheetings	6690	12229
18103	Manufacture of hats and caps from waterproof	40	69
18104	Manufacture of wearing apparel of leather and substitutes of leather	916	1571
18201	Scraping, curying, tanning, bleaching and dyeing of fur and other pelts for the trade	123	239
18202	Manufacture of wearing apparel of fur and pelts	1535	2631
18203	Manufacture of fur and skin rugs and other similar articles	39	67
18205	Stuffing of animals' and birds' hides	1	2
18209	Manufacture of other leather and fur products n.e.c.	161	277
	total	43989	82268

Source- Derived using data from NSSO, ASI and NAS, Central Statistical Organization

These values have been estimated using Annual Survey of Industries (ASI) and National Sample Survey (NSS) data for year 2000-01 and 2005-06 (ASI for year 2005-06 is not yet available and is projected using 2004-05 data). The values for year 2008-09 are extrapolated while for year 2015-16 are projected taking into account the expected growth based on information gathered from industry associations and opinion of industry experts. Here it is important to mention that technical textiles are not classified as separate items in Central Statistical Organization data in NSSO and ASI databases.

Rather technical textile items are put along with other general textiles and apparel items under NIC code 17 and 18. Therefore, even at five digit level (of NIC code) many items of general textiles segment are intermingled with technical textile segment under the same code as that is not primary objective of NIC classification. An attempt is made to estimate technical textile using NIC classification using experts' opinion. Due to these reasons these estimated figures may not be exact and there may be some underreporting or over reporting of technical textiles production in the above table.

We have presented in Table 6.2 below the estimates of Expert Committee on Technical Textiles (ECTT) (2004) on market size (or consumption) of technical textiles in the country by in 2001-02 and projections for year 2007-08.

Table 6.2
Segment wise Market size and Potential of Technical Textiles Industry in India

(Rs Cr)

	2001-02 (Estimated)	2007-08 (Proj.)
MOBILTECH	1169	1699
MEDITECH	778	1423
SPORTTECH	1310	2050
PROTECH	348	1289
INDUTECH	819	1369
GEOTEXTILES	110	2854
PACKTECH	3198	6497
OEKOTECH	0	118
AGROTECH	261	465
CLOTHTECH	5395	8416
BUILDTECH	1051	1503
HOMETECH	758	1898
TOTAL	15196	29579

Source: Report of the Expert Committee on Technical Textiles (ECTT) (2004), Ministry of Textiles, Government of India.

ECTT (2004) estimates on total consumption for technical textiles for year 2007-08 (projected) seems much lower compared to our estimates on production for year 2008-09. But if we compare our production estimates with that of Baseline Survey of Technical Textiles Industry in India by **ICRA** (2009) as presented in Table 6.3, the estimates seems much closer to our estimates taking into account gap of one year. ICRA (2009) estimates seem more plausible compared to **ECTT** projections estimates for the same year.

Table 6.3
Production, Imports, Exports and Consumption of in Various Segments of Technical textiles in 2007-08 and Projected Domestic Consumption for 2012-13 Rs crore

	Production	Imports	Exports	Domestic Consumption	Domestic Consumption (Proj. for 2012-13)
Agritech	542	12	67	487	709
Meditech	1,268	375	155	1,514	2,263
Mobiltech	2,322	858	22	3,158	5,145
Packtech	14,544	86	563	14,067	25,913
Sportetch	2,845	67	273	2,632	4,358
Buildtech	1,813	344	431	1,726	2,655
Clothtech	6,507	401	338	6,570	9,665
Hometech	2,584	50	72	3,191	5,300
Protech	572	731	43	1,259	2,021
Geotech	152	105	87	170	300
Oekotech				68	160
Indutech	2,239	859	762	2,326	4,091
Total	35,388	3,888	2,813	37,168	62,420

Source: Baseline Survey of Technical Textiles Industry in India, ICRA (2009)

While the market in India for technical textiles is growing, a comparison with the global pattern reveals that India's production/consumption level of technical textiles is still very low. The Textile Commissioner's Office figures show that Clothtech accounts for the highest share (35% of the total) in technical textiles consumption in the country followed by Packtech (21%) and Sporttech (8%), with all others combined representing 36%. Globally the spread is quite different: Mobiltech accounts for 25%, Indutech 16% and Sporttech 15%, while others accounts remaining 44%. Such a comparison shows that India is still a consumer of low-value industria l textile items.

6.1 Problems and measures to promote growth in technical textiles segment

Technology & Investment

The share of unorganized sector in production of the technical textiles in the country accounts for 40 per cent in which scale of operation is limited and technology is relatively redundant. The major deterrent for expansion of the sector is low demand, which explains the high share of operations in small scale sector in order to meet the thin demand spread all over the country. This is also the reason for huge technological gap between technology used in competitor countries and that used in India. There is thus lots of scope of massive technology upgradation in the sector and Government can play a major role in it by providing technology / consultancy support to manufacturers for development of technical textiles. There is also need for strong world class testing facilities to be developed in India for accurate and relevant evaluation of technical textile to satisfy the stringent and critical requirements of performance related products parameters in the global market.

As explained earlier, the production of technical textiles is limited and scattered across various size class of units ranging from Trans National Corporations (TNCs) to unorganized sector units and these various size class units have different product mix. Thus there also exists some units that are engaged in production of high-end products like parachute fabrics, balloon fabrics, ballistic helmets etc.

The major production of this industry is catering to the domestic demand. In fact for some of the products such as sanitary napkins, baby diapers, wipes, hoses, drive belts etc., even to meet the domestic demand around 10 to 60 per cent of the total products are imported.

There was thus need to encourage modernization in this sector by providing priority or additional incentives for this segment under Technology Upgradation Fund Scheme (TUFS). Relaxing norms for FDI for both technical textiles and technical textiles machinery and further lowering of customs duty on technical textiles machinery may also be considered for further boosting investment in this sector.

Raw Materials

The conventional textiles are export intensive and their exports account for about 35 per cent of their production. On the contrary, technical textiles are import intensive products. Many products required as raw material for this industry are imported (i.e., webbings for seat belts, adult diapers, high altitude protective clothing, non-woven glass mat for battery separators etc.). The major production of this industry is catering to the domestic demand.

TNCs and large scale units produce hi-tech products in segments like Mobiltech, Indutech, Meditech, etc. Still many of the technical textiles products that are not produced domestically in sufficient quantity have to be imported to fulfill the domestic demand. Moreover, World Bank funded projects and defence needs of the country for technical textile items are also met primarily though imports. Apart from this, many technical textile products are import intensive in nature and this makes them cost prohibitive and thus restricting their consumption. This is one of the main reasons for low consumption of technical textiles. Hence, there is acute need for easy availability of specialized raw-materials for technical textiles in the domestic market. For this, adequate fiscal measures should be taken.

Skilled Labour

The lack of availability of skilled manpower is another major constraint for the expansion of this sector. As this is a high-tech segment very skilled workforce is required. Since most of the technical textiles lose almost their total market value, if any of the parameters fails to conform to the specifications, the quality control and quality culture are crucial. Hence importance is given to use of good quality raw material; advanced technology and skilled labour to meet these standards.

There is thus utmost need for institutional training to skilled manpower for manufacturing technical textiles products. The lack of proper training institutes in the nearby places and on the labourers part lack of resources and willingness and high opportunity cost to spare time are the factors contributing to huge skill gap. The Indian textiles workforce was generally developed within the industry where newly inducted unskilled workers acquired their skills from skilled colleagues already engaged in the industry, who passed on their expertise to such unskilled workers. As a result, they inherited the basic expertise along with any flaws and faulty skills. Some of the progressive composite mills did have special training programmes for unskilled, semiskilled and skilled workers apart from on job training (Ministry of Textiles, 2006).

Most of the large and medium sized mills (both spinning and integrated) are found to be providing training to their workers before assigning them some work and even after a few years of experience for skilled jobs. In addition, large units hire formally trained skilled labour (e.g. engineers, technicians, managers, etc.) to supervise the sophisticated operations. SIMA also provides manpower training in the meditech segment.

Some formal training is also provided to the operatives of the decentralized sector in and around some major clusters by some institutions. In this regard role of Powerloom Service Centres set up by Ministry of Textiles in collaboration with various textiles research associations e.g. SITRA, SASMIRA, NITRA, MANTRA, BTRA, ATIRA, etc. has been very important. Besides, some local industry associations and NGOs in some clusters also organize short term training programmes. A few units recruit worker trained through ITI or other institutions. Some others recruit teen aged boys and provide them on the job training.

It is observed that the technical textiles products with high production levels in India with substantial exports are typically commodity products that are not very R&D intensive. These products include tarpaulins, jute carpet backing, hessian, fishnets, surgical dressings, crop covers, etc. Hence value addition in our technical textiles product is relatively much low as compared to our competitors. To move toward high value products there is need for preparing a strong pool of skilled labour which is suitable for the development of a highly innovative and R&D intensive domestic technical textiles industry.

In order to meet the skill gap, government should work in collaboration with technical textiles units to remove this. Out of the total 4971 ITIs 1243 ITIs offer training in textiles with a yearly intake of 33372. But, there is no specialized course in technical textiles in ITIs to meet the requirement at the operative and supervisor level. So, bringing it in the curriculum of the ITIs from the perspective of vast growth potential of this segment would be highly helpful. Similarly, technical textiles could be

included in the curriculum of various branches of engineering, e.g. civil engineering to include geotech and build tech, environmental engineering to include oekotech, agricultural engineering to include agritech, etc. Further, to provide R&D base to the sector post graduate courses for specialized technical textiles segments are required to be introduced in various IITs, NITs or other specialized institutes to develop a specialized skilled labour pool. Research institutes and consulting agencies with special focus on technical textiles can also be established. This should be part of capacity building for R&D in the sector.

Lack of demand

There is lack of demand of technical textiles as it is only used as an alternative only when conventional solutions are not suitable. This is mainly because of lack of awareness among the consumers about the benefits of using technical textiles. This is primarily true for products like meditech, agrotech and geotech, and this lack of awareness is hampering the potential demand of technical textiles in India. Thus there is important need for providing proper regulatory framework to safeguard the interests of consumers. The Government should therefore take adequate legislative measures to ensure use of technical textiles across different sectors of the economy at par with developed countries. These measures would apart from safeguarding the interest of consumer would also help in boosting the demand of these products and would be major instrument for the development of the sector.

Due to lack of clear cut policy on specifications and standardization of technical textiles, the quality benchmark for technology for technical textiles are missing. These standards are one of the reasons that there are no clear cut ideas about the current state of technical textiles, share of unorganized and organized sector etc and how the legislative measures are going to shape up in near future. The producers/ investors have thus no clear cut sense about the potential growth in the sector.

Promotion of technical textiles is essential not only for economic growth, employment generation and increasing exports but also in the larger public interest for pubic safety, security, hygiene, protection of environment and quality infrastructure.

To sum up, this is an area where India along with country like China has got distinct edge over others due to its well integrated production chain. With the global growth in conventional textiles reaching a static level, it is high time that the Indian textile industry initiated efforts towards creating a production base having a judicious mix of conventional and the high-performance technical textiles. This will not only enable the industry to keep itself afloat in difficult times, but will go a long way in making inroads into the global business. Most of the developed economies like Japan, US, Germany, UK realized this fact long back and today they are well placed in the world trade. China has already made a significant progress in developing capabilities in the field of technical textiles even for products with value addition upto 500 per cent.

Chapter 7: Skill Gap in Textile and Clothing Industry

In the age of cut throat competition among continuous upgradation of machinery is must to remain competitive in a sector like textiles and clothing, where export potentials are high. Along with modernization there occurs need for skilled workers who can run the machinery effic iently and understand the modern production processes. Thus skill requirement increases with the technological upgradation. In the Indian scenario for want of availability of skilled labourer in adequate quantity many firms in the industry are hesitant to expand their scale of operations or enter into high end segments with cutting edge technology.

Low level of skills of the workers has a bearing on income of both workers as well as the firm. This works like a vicious circle. Low skilled employees in an organization means an organization with low productivity, and low quality and low value of output. It results in low competitiveness in the market leading to low returns for the firm. Such situation not only leads to low investment in HR and technology (obstruction in expansion and/or up-gradation of the existing system), but also results in low wages and low morale of employees. Lack of investment in HR and technology again means low skills/knowledge, which completes one side of the loop of low-skill poverty vicious circle. Lack of investment in HR and technology also results in creation of no or few additional jobs. It means supply and demand of labour gets imbalanced in favour of supply. Less demand and more supply puts pressure on wages. Eventually, organizations remain in the vicious circle of low productivity, low quality output and low value output (Rehman and Ali, 2008)

7.1 Nature of Skill Gap

Skill gap can be defined as the gap between required level of knowledge and skill to do a particular activity and the existing level of knowledge and skill to accomplish the work. Alternatively, it can also be identified by the gap in the demand and supply of skilled workers at the existing wage rates in a unit. Skill gap may be at varying levels in different sort of activities in a textiles unit. Further, skill gap can be found at different hierarchical levels of an organization, e.g. at operative level, supervisory level, middle management level or senior management level. So remove the skill gap at various leve ls different strategies should be adopted. In some sort of activities, skill gap can be easily removed by a few days of training or on job training but in some other tasks a formal and intensive training is required. In addition, literate and educated workers are quicker to learn as compared to illiterate and uneducated workers. So the former are easier to train as compared to the latter.

7.2 Segment-wise Skill-gap

Nature and scale of skill gap varies across different segments of the industry. Skill gap is found to be minimal in the handloom segment and maximum in the technical textiles segment. Major reasons for less skill gap in the handloom segment are very low level of modernization and traditional level of

skill required to become weavers. The traditional skill for handloom sector for centuries was transferred from one generation to the next. Further, in the powerloom/knitting sector, the extent of the skill gap depends upon the type of powerloom/knitting machine used. In case of shuttlelooms the skill gap is lower as compared to shuttleless looms. Similarly, in the modern knitting machine, the need for skilled labourer is more and hence there exists high skill gap in modernised knitting units as compared to less modernized knitting machine units. This is because of lack of proper training institutes in the nearby place and on the labourer part lack of resources, willingness and high opportunity cost to spare time. The garment sector is another sector in which skill gap is most severe (except technical textiles segment which will be discussed in a separate section). Skill gaps are also found in terms of efficient management systems, for instance indigenous CAD/CAM skills and efficient enterprise management viz. ERP systems. These are capabilities that serve as a key to move up the value chain. At the middle and senior management level, knowledge/information gap is observed and that hamper the quality and socio-environmental compliance by customer segments along the global value chain. This also resulted in achieving competitiveness merely because of lack of business information in certain modernised units such as fabric sourcing, appropriate energy options, technology, government support and markets, etc. (Padmanand and Jadeja ,2007) The skill gaps however are found across the entire textiles and clothing value chain.

7.3 Labour Laws and Skill Gap

Persistent skill gap in the textiles and clothing sector is very closely linked with the prevalent labour laws in the country. They can create a conductive environment for skill enhancement or they may hinder the growth of labour skills by hindering expansions during seasonal industries. It is therefore important that labour laws should be framed in such a manner that it should not hinder the growth and instead be used for the overall development of both workers and industry.

7.4 Existing Institutions

Industrial Training Institutes (ITIs) established during the 1950s was the major effort on the part of Government to impart skills in various vocational trades to meet the skilled manpower requirements of the various industries of the country. But they hardly provided core-competency training in textiles at operator level unlike other engineering disciplines. Vocational training for workers in the pre-or post-employment stages did not develop significantly in a structured and regular fashion. The Indian textiles workforce was generally developed within the industry where newly inducted unskilled workers acquired their skills from skilled colleagues already engaged in the industry, who passed on their expertise to such unskilled workers. As a result, they inherited the basic expertise along with any flaws and faulty skills. Some of the progressive composite mills did have special training programmes for unskilled, semiskilled and skilled workers apart from on job training (Ministry of Textiles, 2006).

Currently, out of the total 4971 ITIs 1243 ITIs offer training in textiles with a yearly intake of 33372. They impart training in following trades-Bleaching, Dying; Block printing; Cutting and tailoring; Dress making; Embroidery; Hand weaving of niwar tape; Durries, Carpet, Knitting with hand operated machine; Weaving of silk and woollen fabrics, etc.

7.5 Mill Sector

Most of the large and medium sized mills (both spinning and integrated) are found to be providing training to their workers before assigning them some work and even after a few years of experience for skilled jobs. In addition, large units hire formally trained skilled labour (e.g. engineers, technicians, managers, etc.) to supervise the sophisticated spinning, weaving, dying and other processing operations. They have their separate human resource (HR) division to upgrade the skills of their employees. Currently, SITRA, ATIRA and SIMA are the major organizations which offer formal training programmes related to textile products. Around 100 Textiles mills have their own formal/informal training centres whose trainers have been trained by these organizations. These textiles mills have also developed some training infrastructure facilities under the guidance of these organizations. Apart from this, the professional managers and technicians having professional degree including from IIT's, management institutions and universities are hired.

7.6 Handloom

The most of small handloom units spread all over the country are run by workers, weavers, who have never acquired any kid of formal training. In most of the cases, as a child grows up in a weaver family, he finds around himself both at home and in the neighbourhood the weaving of fabric on handloom. His informal training starts from that stage. Sometimes he has to do some handloom related errand. In the process over a period of time he becomes a skilled weaver. To provide institutional training to weavers, 24 Weavers Service Centres have been established by Government in various clusters of the country. They conduct training programmes to upgrade the skill of weavers to enable them to switch over from low value added to high value added products. Under training programmes, the handloom weavers/dyers/printers/designers are given training through in-house training courses of 4 months duration and through field training programmes under Decentralised Training of Weavers Scheme. From to time they also conduct various live demonstrations, workshops, exhibitions and seminars periodically for the benefit of weavers. Besides, they also provide technical assistance and solve technical problems faced by the weavers, dyers and printers. Govt. has also established four Indian Institutes Handloom Technology (IIHTs) to provide research and development support to the handloom sector and provide training for the sector at the Diploma level, and also for skill development of handlooms weavers and dyers. In some regions of the country cooperative societies and NGOs also impart training of handloom weaving to unskilled people. Otherwise, a novice firstly has to work as a helper in a handloom unit and over time he learns

weaving skill. Time taken to learn weaving varies across different persons. Generally it varies between 6 months to 1 year.

7.7 Powerloom

Powerloom sector is also dominated by informal training institutions e.g. training by family members, on the job training, etc. But there are some formal training institutions also in some major clusters to provide training to loom owners, weavers, jobbers, fitters, designers and other operatives of the decentralized powerloom sector. In this regard role of Powerloom Service Centres set up by Ministry of Textiles in collaboration with various textiles research associations e.g. SITRA, SASMIRA, NITRA, MANTRA, BTRA, ATIRA, etc. has been very important. They provide regular training courses on pre-weaving and weaving technology, dobby technology, dropbox mechanism, fabric design, machine maintenance and other local needs to weavers and loom owners to acquire, improve and update their skills in line with the latest and appropriate technology in the sector. They also provide short duration courses for quality checkers and production supervisors on different types of fabric defects, methods of meeting such defects and methods of prevention. Some research associations provide stipend also to the trainees with financial assistance from respective state governments. However, the intake of trainees is restricted due to the limited infrastructure available with them. Besides, some local industry associations and NGOs in some clusters also organize short term training programmes, workshops, seminars, etc to upgrade the skills of loom owners and weavers.

It was found in NACER survey, 2008-09 that on an average, workers learn basic operation of powerloom in around 3 months, it took around 1 years to operate independently, 4-5 years to become a master weaver.

7.8 Garments

In the apparels segment most of the training imparted to workers is informal in nature. An unskilled worker first works as a helper in different activities of a garment making unit e.g. cutting, labeling, ironing, packaging, etc. Over a period of time he becomes a skilled worker. A few units recruit worker trained through ITI or other institutions. In Ludhiana knitting cluster, several apparel units recruit teen aged boys and provide them on the job training in stitching. It was found during the NCAER survey, 2008-09 that in certain clusters, a few skilled workers impart training in stitching to new labourers on payment during their leisure time at home. This is also an informal arrangement of training. In select clusters, Government established a few Apparel Training & Design Centres (currently total thirteen in number) to train and upgrade the skills of workers in the garment sector. Recently, Infrastructure Leasing and Finance Services (IL&FS) has launched a project called Skills for Employment in Apparel Manufacturing (SEAM), a pilot effort to train and place rural below-poverty-line youth in the

apparel industry. But considering the massive skill gap in the sector, the efforts are little to have major impact.

Generally, workers gain full expertise within 2-3 years. Scarcity of skilled workers is felt more during peak season.

7.9 Measures to Improve the Institutions

- Currently, there is a massive gap between the availability of skilled manpower and the requirements of the industry, particularly in the weaving, dying, processing and garment segments. To bridge this gap requires massive expansion and modernization of training institutes/polytechnics across the country. They can be opened on a public-private partnership basis with maximum industry-institute interface.
- The number of ITIs targeted specifically to the requirements of the textiles sector need to be increased significantly to meet the shortage of operatives. They may be persuaded to relate their courses and curriculum in textiles with the inputs from the textiles industry to make them more relevant to modern machineries and processes used in textiles industry.
- Post graduate courses are required to develop a specialized skilled labour pool for the industry. These are to be offered as part of engineering degree programmes in various engineering colleges, IITs and NITs.
- The Textile Research Associations (TRAs) may be strengthened with one time grant from the government to design and offer more short term structured training programmes.
- The existing network of Apparel Training and Design Centres (ATDCs) promoted by the Apparel Export Promotion Council may be expanded and strengthened to meet the needs of the rapidly growing RMG sector.
- Knitting & knitwear service centers may be set up in the major knitting centers of Tiurupur, Ludhiana, Delhi and Kolkata to cater to the support service needs of the decentralized knitting and knitwear industry
- Emphasis should be laid on not only educating and skilling the workers but also on a continuous process of skilling, re-skilling, multi-skilling and skill modulation.

- Capacities of powerloom service centres to conduct training programmes can be expanded. Simultaneously, new training centres may be established in smaller clusters where presently there are no training centres for skill development of workers.

- The reorient and modernize of the industry may require major adjustments in human resource development policies so that skilled workers displaced during the adjustment process may be reabsorbed into productive employment. For this purpose, there is need to develop and install a meaningful mechanism that can utilize skilled weavers displaced from the hand-loom sector to productive employment in the power-loom and mill sectors. These skilled hand-loom weavers are major assets to the industry, but only if they can be utilized in the production of the sophisticated products that are in demand for domestic and export markets in hand looms or even in power looms and mills sector.

- Need to reforms the rigid labour laws.

- Industry associations like CITI (Confederation of Indian Textiles Industry) and other smaller associations should play a pivotal role in coordinating with training institutions and industry for the fulfilment of the training needs of various sectors of textiles industry and help in laying foundation for development of such institutes.

Chapter 8: Investments in Textiles and Clothing Sector

In the post-independence period until the mid-1980s, India followed for the most part an inward-looking/import substitution policy, using a variety of regulatory mechanisms to orient the textile and clothing sector in a particular way. A strict industrial licensing regime required firms to seek government permission for establishing any new operation or the expansion of existing ones. In addition, several sectors such as garments, knitting etc., were kept restricted for small-scale enterprises, and strict labour laws proved a disincentive for expansion. The exemption and evasion of duties hindered the modernization process. The escalating duties at value added stage due to introduction of MODVAT & exemption for small scale sector at intermediate stage was a cause of major discouragement for investment in garment sector till 2000.The New Textile Policy relaxed several licensing requirements, raised the maximum limits on allowable investment and reduced import controls. Businesses were also encouraged to modernize their technological base through disbursement of cheaper lines of credit. Technology Upgradation Fund Scheme (TUFS) and technology modernization on cotton & spread of BT cotton are important developments.

This chapter is divided into four sections. The first section deals with pattern of investment across various segments of the industry, which has taken place in recent past. In the second part, the contribution of foreign direct investment (FDI) has been discussed. In the third part of this chapter, the role of TUFS in modernization of the industry has been explored. In the fourth part, on the basis of demand pattern of fabrics equivalent projections for investment requirement in various segments of the industry for the period 2007-08 to 2011-12 and 2007-08 to 2015-16 have been made.

8.1 Investment Pattern of the Textiles and Clothing Industry:

8.1.1 Investment in Factory Sector

Gross fixed capital formation (GFCF) (at current prices) which represents investment here has been taken from Annual Survey of Industries, Central Statistical Organization, Kolkata. Total investment made in the factory sector of the industry during the period 1992-93 to 2005-06 was Rs.93102 crore. Out of this, Rs. 40532 crore were invested during 1992-93 to 1998-99 and Rs. 52570 crore during 1999-00 to 2005-06[1] (Table 8.1). In nominal terms, the investments took place after the post-TUFS period seems much higher compared to pre-TUFS period. But if we compare in real terms, magnitude of difference in investment between the two periods is significantly reduced.

The comparison at aggregate level however hides differences at disaggretade level. There has been a significant shift in the composition of investment and it has got more diversified in the period after the post-TUFS. The increased investment has been observed towards segments such

as garments, knitting & crocheting and manufacture of other textiles (Table 8.1). But a major chunk of investment i.e. Rs.38778 crore i.e. 74% of the investment was still concentrated in spinning, weaving and finishing of textiles during 1999-00 to 2005-06, out of this Rs. 7285 crore was invested in finishing of textiles. As in the ASI dataset spinning and weaving has been clubbed together we can't say on the basis of this source, which segment between them is marked by higher amount of investments. But on the basis of loan disbursements through TUF scheme (see Table 8.2) it can be concluded that spinning segment received a much higher investment as compared to weaving segment. Bedi & Cororation, IFPRI (DP), 2008, have made observations that spinning sector is one of the most modern sctor and modernization is continuously taking place in this sector.

Composition of investments across different segments of the industry for the latest three years viz. 2003-05 indicates that spinning & weaving segment is marked by highest investments with annual average investment (for 2003-05) of Rs. 7411 crore that is 60.75 % of total investments in the factory sector in textiles. This is followed by readymade garments segment with average investments of Rs.1248 crore (12.15%) during the last three years. Further, investment in finishing of textiles is slightly lower at Rs. 1171 crore (11.4%). Next are knitting & crocheting segments and made-ups segment with average investments of the order of Rs. 844 crore (8.2%) and Rs.317 crore (3.1%) per year respectively during the last three years. The picture for sectoral pattern of average investments for the period 2000-2002 was somewhat different as spinning & weaving segment was characterized by highest amount of investments followed by finishing of textiles, apparels segment, knitting & crocheting segment and made-ups segment with average investment of Rs 3134 crore (58.6%), Rs. 979 crore (18.3%), Rs. 647 crore (12.1%), Rs. 367 (6.9%) crore and Rs. 72 crore (1.3%) respectively. It is notable that there has been a drastic increase in investments in readymade garments and made-up segment in recent years. Between the two periods shares of investments in spinning & weaving and finishing of textiles have declined.

8.1.2 Investment in Non-factory Sector

The data on investment in textiles and clothing sector in non-factory segment is not directly available from any source as NSSO data on unorganized sector is available once in five years only. National Accounts Statistics (NAS), Central Statistical Organization however come out with value added and gross fixed capital formation estimates for both the organized and un-organised manufacturing sector at aggregate level. These comparative value added over gross capital formation ratios for the overall unorganized and organized manufacturing sector are used to derive the value added over gross fixed capital formation ratio for unorganized textiles and

[1]Technology Upgradation Fund Scheme (TUFS) was introduced on April 1, 1999 for modernization.

clothing sector using the available ratio for organized textiles and clothing sector. This is estimated on the assumption that the relative value added over gross fixed capital formation ratio in textile and clothing sector compared to overall manufacturing sector remains same both in the organized and unorganized sector. This means if textile and clothing sector is less capital intensive in the organized sector compared to overall manufacturing sector, same is true in unorganized sector and by same degree.

The value added over gross fixed capital formation ratio thus derived for the textile unorganized sector is then multiplied by the value added generated in the unorganized textiles and clothing sector to estimate the gross fixed capital formation in textiles and clothing sector. It is estimated that during 2005-06 investment to the tune of Rs. 17314 crore were made in the unorganized textiles and clothing sector of the industry.

8.1.3 Total Investment in the Industry

Summing together the investments in both factory and non-factory sector, the total investment of the textiles and clothing industry is estimated at Rs.32028 crore in 2005-06.

8.2 Foreign Direct Investment in Textiles and Clothing Sector

FDI is crucial for technological upliftment of the industry. It not only brings in huge investments from outside the country, but also brings with it latest technical know-how, latest manufacturing practices and processes, managerial expertise, latest marketing techniques, latest fashion designs and styles, etc. It also leads to overall quality improvement compatible with world standards and the creation of mega facilities like modern processing plants with large capacities, etc. Currently, India is the second largest textiles economy in world after China, but the gap between the two economies is huge. In order to reduce this gap and sustain the position of being the second largest textile economy, India needs to attract FDI in the textiles sector.

Table 8.2: Inflow of foreign direct investment (FDI) in India from august 1991 to July 2008

(Amount in billion)

Financial Year	Total (All Sectors)		Textiles (Including, Dyed, Printed)		%age of FDI in Textiles
	Rs	US$	Rs	US$	
August1991-March2000	606.05	16.7	8.29	0.24	1.37
2000-01	103.68	2.38	0.09	0	0.09
2001-02	184.86	4.03	0.24	0.01	0.13
2002-03	128.71	2.7	2.58	0.05	2.00
2003-04	100.64	2.19	0.43	0.01	0.43
2004-05	146.53	3.22	1.97	0.04	1.34
2005-06	245.84	5.54	4.15	0.09	1.69
2006-07	563.9	12.49	5.61	0.13	0.99
2007-08	986.42	24.58	7.48	0.19	0.76
2008-09 (Up to Feb. 09)	1128.95	25.351	4.45	0.10	0.39

Source: Department of Industrial Policy & Promotion, Ministry of Commerce

Despite so much of importance attached to FDI in textiles and clothing for modernization of the sector and availability of finance, FDI inflows in the sector so far has been very limited. Upto February, 2009 from August, 1991 only US$ 856 million had been attracted to the textiles & clothing industry that is only 0.86 % of total FDI inflows to India during the same period (see Table 8.2). Some acceleration in FDI inflows to the sector has been witnessed in recent years particularly since 2004. In 2008 (upto July) it was US$ 151 million. This is a welcome trend for the industry. But if we compare our FDI inflows into the sector with that of China we find the latter at a much better position. The total FDI in India during 2005 was only US$ 4.36 billion compared to US$ 65 billion in China. Out of total FDI inflows, FDI flows toward textiles and clothing sector in India was only 1.80 percent (US$ 78.99 million) of the total, whereas in China the figure was 8.3 percent (US$ 5.4 billion) (Ministry of Textiles, 2006).
It is found that most of the funding of investment in the industry has occurred through domestic sources whether through debt or equity. Role of FDI has been very limited. During 2000-01 to 2005-06, FDI contributed only 2.1% of total investments in the organized factory sector of the industry. This is almost same as the share of Gross Fixed Capital Formation (GFCF) in total FDI inflows to India during this period, which is comes out to be 2.09 %.

Some of the major reasons identified for low FDI inflows towards the economy so far are poor quality of infrastructure, higher transaction costs, rigidity in labour laws, limits on FDI in retail, etc. in the country. Many analysts have drawn attention toward need for massive investments in basic infrastructure such as electricity, roads, rails, ports, technical & training institutes, hospitals, etc. But condition of electric supply is still very miserable. Firms often have to rely on captive power plants for uninterrupted power supply. Condition of most of the roads is pathetic. Exporters have to wait a lot before loading and dispatch of their exportable. Transaction costs in India are also very high as compared to our competitors. Here it takes much more time in getting a license and establishing a firm. Loan processing time also much high. Enforcement cost, contracting cost, litigation costs, etc are also high. Furthermore, due to inflexible labour laws also textiles transnational corporations (TNCs) don't want to shift and expand their businesses to India. If India has to attract FDI, it will have to remove these bottlenecks

Hence, government should liberalize procedures to attract Foreign Direct Investment (FDI) in specific areas of textile industry needing FDI and take the appropriate steps to remove the bottlenecks in specific areas as discussed earlier to bridge the gap between domestic investment and required investment. Some areas which need specific attention with regard to FDI promotion are retailing of garments and fabrics, apparel manufacturing, manufacturing of textiles machinery, synthetic fabrics, technical textiles, etc.

8.3 Technology Upgradation Fund Scheme (TUFS) and Investment Pattern

TUFS was introduced on April 1, 1999. It was initially launched for only five years only but later on it was further extended many times and now extends upto March 31, 2012. The scheme was intended to compensate for the global disadvantages faced by the Indian textiles and clothing industry in the field of power, transaction costs and additional costs borne by the industry due to poor infrastructure. The scheme was also intended to attain a higher level of infrastructure creation for modernization of textiles sector. More than 70% of the beneficiaries under TUFS belong to small-scale industries sector. The manufacturing chain in the textiles industry starts right from ginning of cotton till the clothing stage. Hence, TUFS encompasses all the inter-connecting sectors such as ginning, spinning, weaving, knitting, processing and readymade garment making. There are various subventions under TUFS for different forms of capital subsidy/interest subsidy. But on an average government outflow under the scheme has been around 5% of the disbursed amount.

TUF scheme has been an important contributor to investment and modernization of the textiles and clothing industry since the inception of the scheme. Till December 31, 2008 total Rs. 69828 crore had been sanctioned and Rs 57878 crore had been disbursed under TUFS to various textiles and garment units. We find that spinning mills availed the maximum benefit from TUFS with disbursement of Rs. 19636 crore (i.e.33.9% of the total disbursed amount) till December 31, 2008 from the beginning of the scheme in April 1, 1999. Next major beneficiary is the composite mill sector with disbursement of Rs. 11921 crore (20.6%). Other major beneficiaries are units of processing of textiles and garments, weaving, garment manufacturing, manufacturing viscose filament yarn, synthetic filament yarn, texturising, crimping & twisting and knitting with disbursement of Rs 5134 crore (8.9%), Rs.4453 crore (7.7%), Rs. 2989 crore (5.2%), Rs. 2571 crore (4.4%), Rs.1446 (2.5%) till December 31, 2008.

Since the inception of the scheme in April 1, 1999 there has been a gradual shift in relative importance of different segments of textiles & clothing sector in terms of availing of TUFS. For instance, share of composite mills in total amount disbursed under TUFS decreased from 30.74% as on March 31, 2002 to 20.6% as on December 31, 2008. But during this period absolute amount disbursed to the sector increased manifold from Rs.1049 crore to Rs. 11921 crore. Similarly, share of processing of textiles and fabrics in disbursements has decreased from 17.39% to 8.9% between 2002 and 2008 with absolute amount increasing to Rs.594 crore from Rs. 5134 crore. On the other hand, share of spinning units both-SSI and Non-SSI increased from 28.90% (Rs.986 crore) to 33.9% (Rs.19636 crore) between the same periods. Similarly, the share of weaving units increased from 6% (Rs. 205.29 crore) to 7.7 % (Rs.4453 crore). One striking development is in the category of others whose share drastically increased from 2.37% (Rs. 80.83 crore) to 14.2%

(Rs. 8221 crore). Here others include cotton ginning and pressing, CPP on stand alone basis, fabric embroidery, jute industry, silk reeling and twisting, wool scouring and combing, etc. This shows that the coverage of TUFS is getting broadbased with the passage of time. It can be observed that even if some segments are getting relatively lesser importance over the years, the absolute amount invested in them through TUFS is massive and is increasing manifold over time. Moreover, there are some segments which were unwilling to avail of TUFS or could not avail of the scheme due to ignorance or some other reasons earlier are now utilizing TUFS and modernizing their plant and machinery on a large scale in recent years.

Another point that is observable is that in many segments loans availed through TUFS make a significant contribution of project costs of the units that had applied for TUFS. This is vindicated by figures given in the accompanying Table 8.3. In the spinning segment 49-57% of the project cost was covered through TUFS loans between 1999-2008. Similarly, in the case of composite mills it varied between 40-45% and in case of garment manufacturing it varied between 46-71%. One major segment in which investments in projects have been relatively more of self-financed nature than through TUFS loans is knitting in which share of TUFS loans varied between 23-44%. On the other hand, if we compare disbursed amount under TUFS with that of total investments (at current prices) made under different segments by units in the factory sector we find that spinning & weaving segment is the biggest beneficiary of TUFS followed by finishing of textiles, knitting segment, garment manufacturing and made-ups segment in that order. During 1999-05 out of total nominal investments of Rs 38778 crore made in spinning & weaving Rs. 5181 crore was availed through TUFS. This amounts to 13.37% of the nominal investments made in the segment. Similarly, in processing & finishing of textiles, knitting, garment making and made-up manufacturing 19.68%, 12.71%, 7.67%, and 10.19% of investments were made through TUFS during this period. From these figures it can be concluded that TUFS has not only provided to different segments of textiles and clothing capital subsidy for modernization of their plant and machinery to make themselves competitive but also has given them incentive to plan new investments and expand themselves through self financed sources and/or through equity capital.

Table 8.3: Segment Wise Progress under TUFS (Rs Cr)									
		Sanctioned					Disbursed		
Industry segment	Period upto (1-04-1999)	No. of Applications	Project Cost	Amount	% of all segments sanctioned amount	Sanctioned amount as % of project cost	No. of Applications	Amount	% of all segments disbursed amount
Composite Upgradation	31-03-02	108	3755	1689	32.86	44.98	83	1049	30.8
	30-06-06	340	10567	4251	22.60	40.23	300	3144	26.2
	31-12-08	768	31695	13730	19.66	43.32	761	11921	20.6
Garment manufacturing	31-03-02	139	338	181	3.52	53.51	103	126	3.7
	30-06-06	336	1697	1203	6.39	70.87	276	497	4.1
	31-12-08	1686	7601	3459	4.95	45.51	1659	2989	5.2
Knitting	31-03-02	208	983	228	4.43	23.18	153	138	4.1
	30-06-06	663	2222	753	4.00	33.89	574	509	4.2
	31-12-08	1681	3681	1622	2.32	44.06	1678	1446	2.5
Made-up manufacturing	31-03-02	17	108	60	1.16	54.98	13	42	1.2
	30-06-06	48	720	219	1.17	30.42	38	129	1.1
	31-12-08	714	1312	732	1.05	55.76	713	575	1.0
Processing of fibres, yarn, fabrics, garments and made-ups	31-03-02	218	1719	835	16.25	48.59	174	594	17.4
	30-06-06	668	5954	2199	11.69	36.94	565	1434	12.0
	31-12-08	1837	15724	6321	9.05	40.20	1824	5134	8.9
Spinning	31-03-02	230	2402	1360	26.47	56.63	181	986	28.9
	30-06-06	874	12580	6338	33.70	50.39	736	4116	34.3
	31-12-08	2743	50843	24673	35.33	48.53	2697	19636	33.9
Technical Textiles including non-woven	31-03-02	11	122	39	0.76	31.99	9	16	0.5
	30-06-06	48	962	409	2.17	42.51	43	138	1.1
	31-12-08	360	1963	982	1.41	50.01	360	871	1.5
Weaving	31-03-02	150	584	324	6.30	55.50	112	205	6.0
	30-06-06	821	5237	2111	11.22	40.31	679	1065	8.9
	31-12-08	3544	14126	5392	7.72	38.17	3530	4453	7.7
Manufacturing viscose filament yarn & synthetic filament yarn, texturising, crimping and twisting	31-03-02	145	385	229	4.45	59.34	133	163	4.8
	30-06-06	720	1545	674	3.58	43.62	684	496	4.1
	31-12-08	1853	5673	3163	4.53	55.76	1849	2571	4.4
Independent weaving preparatory	31-03-02	7	58	40	0.78	68.41	6	13	0.4
	30-06-06	18	47	47	0.25	100.02	15	29	0.2
	31-12-08	135	298	99	0.14	33.13	135	61	0.1
Others	31-03-02	136	319	156	3.03	48.71	107	81	2.4
	30-06-06	769	1053	604	3.21	57.37	662	433	3.6
	31-12-08	8269	22787	9655	13.83	42.37	8242	8221	14.2
All Segments	31-03-02	1369	10774	5140	100	47.70	1074	3412	100
	30-06-06	5305	42583	18808	100	44.17	4572	11989	100
	31-12-08	23590	155704	69828	100	44.85	23448	57878	100
Source: Office of Textiles Commissioner, Mumbai									

As observed earlier, spinning and composite mill segments still constitute the largest beneficiaries of TUF scheme. As spinning segment in the industry is already relatively much modernized as compared to other segments and massive investment is going on in the segment, so government has started discouraging spinning units to avail of TUFS. In this regard the government has made some changes in the financial and operational parameters of the scheme in respect of loans sanctioned with effect from 01.11.2007 upto 31.03.2012. For instance, it has reduced the reimbursement of interest charged by lending agencies on spinning machinery to 4% from 5%. Similarly, cover for a foreign exchange rate fluctuation has been reduced to 4% from 5% for spinning machinery. For other types of machinery it remains at the earlier level of 5%. In addition, a few other measures have also been taken for modernization of other segments as discussed below. Now powerloom units have option to avail of 20% Margin Money subsidy under TUFS in lieu of 5% interest reimbursement on investment in TUF compatible specified machinery subject to a capital ceiling of Rs. 200 lakh and ceiling on margin money subsidy Rs.20 lakh. Similarly, manufacturers of technical textiles and germenting machinery have been provided 5% interest reimbursement plus 10% capital subsidy for specified machinery. The scheme now provides been provided 5% interest reimbursement plus 10% capital subsidy for specified machinery. The scheme now provides 25% capital subsidy on purchase of the new machinery and equipment for the pre-loom & post-loom operations, handlooms/up-gradation of handlooms and testing & Quality Control equipment for handloom production units (Ministry of Textiles, 2007).

This shift in policy toward other segments (i.e. segments except spinning) is a welcome change. It is expected this will bring about a sea change in the investment pattern in textiles and clothing industry. Further, it will be advisable on the part of the government to further reduce the incentives given to spinning segment under TUFS. Even if all the incentives/ reimbursements under TUFS given for purchase of spinning machinery were totally withdrawn, it would have negligible impact on investment in spinning segment. These released funds should be diverted towards other segments in which level of modernization still very low. In other words, it should provide more incentives in the form of interest reimbursement, capital subsidy, margin money subsidy, etc. to segments that have been neglected so far. In this regard special mention may be made of sectors such as garment manufacturing, weaving, knitting, made up manufacturing, processing of fibres, yarn, fabrics, garments and made-ups, technical textiles, etc. which need further encouragement for modernization.

One of the reasons for relatively less investment in weaving, knitting and apparels segment has been reservation of articles in these categories for small-scale enterprises only. Due to reservation these segments could not expand themselves and several economies of scale could

not be harnessed due to this handicap. On the other hand, spinning segment in which there were no such restrictions was able to expand and capitalize on scale economies. Thus composite mills (which had spinning, weaving and processing under one roof) were prevented from expanding their weaving and processing operations. This had the effect of rendering quite a few of the composite mills unviable since they could not expand their weaving operations to match the expansion in spinning. It also led to the emergence of specialized spinning mills. This was exacerbated by the excise duty evasion done by the small-scale powerlooms that affected the competitive advantage of composite mills. It was only recently that most of the restrictions on weaving and apparels segment were unshackled. In the apparel sub sector, while the woven segment was de-reserved from the small sector in 2001, the knitwear segment was totally freed only in 2005. As observed earlier due to dereservation of these segments pace of investment has picked up in recent years as already discussed earlier. TUFS policy was a major policy incentive through which it got boost further.

Gradual dereservation and removal of restrictions on expansion of capacities in the last couple of decade has also been conductive to occurrence of horizontal and vertical integration in the industry. In recent years there has been significant forward integration into garments by major spinners and weavers. Arvind Mills and Vardhman Industries exemplify this trend. Interestingly, a significant number of cotton ginners are forward integrating into spinning, as can be seen in the cotton areas of Andhra Pradesh and Punjab. Similarly, significant backward integration by small and medium-sized knitwear exporters in spinning is occurring in Coimbatore-Tirupur region of Tamilnadu. Some of the best examples of full integration are Alok Industries, Indian Rayon & Industries, Welspun Industries and Vardhman Industries, etc. which straddle the entire range from spinning to branded garments and home textiles (Singh, 2007). Thus, there is an all-around trend toward scaling up as well as capturing the entire value chain from spinning to garmenting, in order to minimize the inefficiencies at each level of the chain. The government-facilitated integrated textile parks scheme introduced in 2005 are also serving the purpose of informal consolidation. These parks incorporate facilities for spinning, sizing, texturising, weaving, processing, apparels and embellishments. These textile parks will further reinforce the trend toward consolidation in the industry in the years to come.

Inflexibility in labour laws has been Achilles heel in the Textiles industry more specifically for the garments sector. It is eroding the competitiveness of the industry and has affected the expansion of garments sector. Outdated labour laws have induced inflexibility in the clothing industry, and lead to fragmented operations. This has cost us considerably due to industry's hesitation over expansion process even at the time of upsurge. Most of the countries competing with India have labour laws that are more flexible. For example, the Chinese apparel industry

has highly flexible labour laws that allow for lay-offs during the non-peak season, hiring of contract labour, and a flexible hiring and firing system in SEZ-based units. Similarly, the Mexican apparel industry allows layoffs during the slack business season. (Singh, 2007). So there is need for major reforms in labour laws to attract investments in the sector and make the sector more competitive. But even if the government adopts the long overdue flexible labour policy in near future as recommended by numerous committees and analysts, firms should follow restraint in executing mass lay offs during slack season particularly in skill based segments such as garments. They should rather attract and retain highly skilled workers and try to diversify themselves into high value sub-segments and increase their productivity during this period as has been exemplified by countries like Japan and Italy. In this way they will also be able to compete with their competitors during such times. It will be in the interest of both beleaguered textiles firms and workers.

8.4 Investment Requirement of the Industry

Spinning

During 2007-08, around 42 million spindles[1] were installed in both SSI and non-SSI sector. Under scenario A, the additional demand for spindles for the next four years (i.e. during 2007-08 to 2011-12) is projected at 4 million spindles under scenario A. This is based on the assumption of additional demand of fabrics (Table 8.4), excess spinning capacity and depreciation requirements. This requires Rs 8000 crore investment during this period. For the period, 2007-08 to 2015-16, the additional spindles required are estimated equivalent to 12 million at the investment requirement of Rs 25000 crore.

The optimistic scenario B is also presented in Table 8.4.

Table 8.4: Variety wise and sector wise availability of cotton and synthetic fabrics

(Mn. sq. mt.)

	Fabrics Available (Production & imports)	Garment in piece length	Piece length	Household variety	Readymade garments (fabrics equivalent)	Knitted products
2007-08	52161	11133	7216	13194	12594	8025
Scenario - A						
2011-12	70482	13431	7008	19700	18234	12067
2015-16	97732	16298	6847	30444	26553	17592
Scenario - B						
2011-12	78619	14983	7819	22839	20341	12637
2015-16	120926	20166	8472	39534	32854	19900

Note: Scenario A assumes 8% GDP growth rate. During 2007-08 to 2011-12 and 2011-12 to 2015-16 it assumes exports growth of 5.5% and 9.7% growth rate respectively.

Scenario B assumes 10% GDP growth rate. Growth in exports has been assumed at 9.7% during 2007-08 to 2015-16.

Source: Computed by using data from Compendium of Textile Statistics, Office of the Textile Commissioner, Textile Committee data and TEXPROCIL data

[1] Rotors have been converted into spindles assuming 1 rotor=5 spindles.

Weaving

The potential growth could not be realised in processing segment such as weaving, knitting, dying, processing, made ups, garments and technical textiles. The estimates of future investment requirements are estimated in weaving segment on the basis of cotton and synthetic fabric equivalent requirement during the period 2007-08 to 20011-12 and 2007-08 to 2015-16. The total fabrics equivalent demand in household, non-household and for exports purpose is estimated at 52161 million square metres during 2007-08. This includes fabrics equivalent consumption in the form of readymade garments at 12594 million square metres and knitted fabrics at 8025 million square metres.

The domestic demand for years 2011-12 and 2015-16 are projected on the basis of two scenarios-A and B taking 2007-08 as base year. Projections are based on the price and income elasticities derived by Bedi & Cororation, IFPRI(DP), 2008, with base year shifted to 2007-08 from 2005-06. Export projections are reworked out considering global slowdown.

In scenario A, demand is projected on the basis of 8 per cent GDP per annum growth for both the periods i.e. during 2007-08 to 2011-12 and 2011-12 to 2015-16 with a relative decline in price of synthetic to cotton fabrics by 10 per cent. The exports are expected to grow by 5.5 per cent during 2007-08 to 2011-12 and then by 9.7 per cent per annum during 2011-12 to 20115-16.

In scenario B, domestic textiles and clothing demand is worked out on the basis of assumption of GDP growth of 10 per cent per annum with a relative decline in price of synthetic to cotton fabrics by 10 per cent. The exports are expected to grow by 9.7 per cent during 2007-08 to 2011-12. But considering the current global slow down, 10 per cent growth in GDP in near future seems unlikely.

Therefore, projections on the basis of scenario A have been discussed more intensively.

The item-wise projected demand (domestic and exports) is given in Table 8.4. The fabrics availability is likely to grow from 52161 million square metres to 65414 million square metres by 2011-12 and 82034 million square metre by 2015-16 under Scenario A. The demand for readymade garments is likely to be grow from 12594 million square metre to 16923 million square metre by 2011-12 and 22288 million square metre by 2015-16. Knitted products demand is likely to grow from 8025 million square metre to 10520 million square metre by 2011-12 and further to 13500 million square metre by 2015-16. The made-up are likely to grow at much faster rate from 13194 million square metre to 19001 million square metres by 2011-12 and further to 26819 million square metres by 2015-16. The projected growth in garment piece length is likely to be slow and in fact demand for piece length is going to decline due to shift in demand towards readymade garment products.

The household consumption is likely to grow from 28071 million square metres during 2007-08 to 34327 million square metres by 2011-12 and 40841 million square metres by 2015-16. The growth rate is going to be lowest in this segment at the rate of 5.16 per cent per annum and 4.44 per cent per annum during first and second periods respectively. The non-household consumption is likely to grow from 15006 million square metres during 2007-08 to 19833 million square metres by 2011-12 and 24895 million square metres by 2015-16. The growth rate is going to be 7.22 per cent in non-household segment during first period and 5.85 per cent during second period. The exports are likely to slow down and are expected to grow by only 5.5 per cent per annum during the first period from the base year 2007-08 estimates of 9084 million square metres. This is the period when the industry should intend to focus on domestic demand growth prospects. The growth in exports during the second period is likely to be 9.7 per cent per annum.

For various segments investment requirement are discussed below:

Weaving
Total number of additional looms required in 2015-16 (L16) =

$$\frac{W16-W08 + (W08*0.24)}{320 * 350 * 0.95 * 0.20 \; + \; 105 * 350 * 0.95 * 0.80}$$

W16 - Projected total woven fabric availability in 2015-16
W08 - Total woven fabric availability in 2007-08
The average fabrics production per shuttleless loom is taken at 320 metres and for shuttle loom at 105 metres per day (24 hours).
For the newly installed looms, 350 working days per year is a reasonable assumption. Capacity utilization for these looms is taken at 95 per cent.
Presently, shuttleless looms share accounts for 7 per cent, which is likely to increase to 12 per cent by 2011-12 and 20 per cent by 2015-16.
Depreciation rate taken is 3 per cent per year to replace the old looms with new technology. During 8 years period i.e from 2007-08 to 2015-16, the total depreciation of old stock is taken at 24 per cent, which needs to be replaced with new capital stock.

The average price of a new shuttleless loom is taken at Rs. 2,500,000 and for second hand shuttleless loom at Rs. 1,000,000. It is assumed that average composition of new and second hand shuttleless looms during 2007-08 to 2015-16 will be 40 per cent and 60 per cent respectively.

NCAER survey estimated the number of shutleless looms at 86,338, shuttle looms at 15.63 lakh, looms in handloom sector at 15.84 lakh apart from 32000 knitting machines, around 1 lakh hand knitting machines and 1.583 lakh stitching machines in commercial garment units during 2007-08 (Table 8.5). On the basis of fabrics equivalent projected demand and above assumptions, it is estimated that by 2011-12 approximately 53892 additional shuttleless looms and 3.95 lakh shuttle looms will be required on the basis of Scenario A demand. Further, by 2015-16 around 1.13 lakh shuttleless looms and 8.33 lakh shuttle looms will be required. It is derived on the basis of assumption that demand for shuttleless looms will grow much faster that that of shuttle looms. Even among the shuttle looms, it has been assumed that usage of automatic and semi-automatic looms will grow much faster than that of plain looms The modernisation and expansion of the powerloom and mill sector would require investment worth Rs. 15578 crore during 2007-08 to 2011-12 and Rs. 32846 crore during 2007-08 to 2015-16 (Table 8.6).

Table 8.5: Number of Working Spindles, Looms and Machines in Weaving, Knitting and Garment Segment

	Handloom & Hand knitted	Shuttleless Loom	Shuttle Loom	Knitting Machine	Stitching Machine*	Spindle
2007-08	1,684,698 Handloom (1,584,000) Hand knitted (1,00,698)	86,338 Mill (10840), Powerloom (75498)	1,562,816 Mill (60160) Powerloom (1502656)	32000	1,583,434	42,000,000
Scenario – A (Extra Required)						
2011-12		53,892	395,295	17,718	755,854	4,000,000
2015-16		113,057	833,232	40,690	1,926,410	12,000,000
Scenario-B (Extra Required)						
2011-12		149,553	614,725	19,739	1,004,233	-
2015-16		375,876	1,235,863	48,862	2,669,187	-

Note: Scenario A assumes 8% GDP growth rate. During 2007-08 to 2011-12 and 2011-12 to 2015-16 it assumes exports growth of 5.5% and 9.7% growth rate respectively.

Scenario B assumes 10% GDP growth rate. Growth in exports has been assumed at 9.7% during 2007-08 to 2015-16.

* Excludes custom tailoring

Source: Computed by using data from Compendium of Textile Statistics, Office of the Textile Commissioner, Textile Committee data and TEXPROCIL data

Table 8.6: Required Investment in Various Segments

(Rs. Cr.)

	Shuttleless Loom	Shuttle Loom	Weaving-Total	Knitting Machine	Stitching Machine	Spinning	Dyeing and Processing	Total
Scenario – A								
2007-08 to 2011-12	8623	6956	15578	3713	16681	8000	35000	78972
2007-08 to 2015-16	18180	14666	32846	8528	39611	25000	95000	200985
Scenario-B								
2007-08 to 2011-12	11982	9666	21648	4137	21596	-	-	-
2007-08 to 2015-16	26329	21239	47568	10240	54309	-	-	-

Note: Scenario A assumes 8% GDP growth rate. During 2007-08 to 2011-12 and 2011-12 to 2015-16 it assumes exports growth of 5.5% and 9.7% growth rate respectively.

Scenario B assumes 10% GDP growth rate. Growth in exports has been assumed at 9.7% during 2007-08 to 2015-16.

Source: Computed by using data from Compendium of Textile Statistics, Office of the Textile Commissioner, Textile Committee data and TEXPROCIL data

Dying & Processing:

Dying and processing is one of the least modernized segments in the textiles value chain. Assuming that out of total 18321 million square metres of additional fabrics demand, about 13500 million sq. mt. will be processed through modernized technology and remaining through less modernised technology during 2007-08 to 2011-12. It would require an investment of Rs. 35000 crore for the modernization of the dyeing segment. It is derived on the basis of assumption that a

modern process house can be installed with Rs.90 crore investment with processing capacity of 1 lakh square metre per day.

During 207-08 to 2015-16, the investment required would be worth Rs 95000 crore for processing of additional fabrics of 37000 million sq. metres out of total additional demand of 45571 million square metres.

Knitting:
The following equation and assumptions are used to estimate the additional requirement of knitting machine by 2011-12 (KM12) and 2015-16 (KM16).

$$KM16 = \frac{(K16-K08) + K08*0.24}{(100*350*0.95*0.92+400*330*0.9*0.08)}$$

K16- Projected total knitted fabric (in Kg.) availability by 2015-16
K08- Total knitted fabric (in Kg.) availability by 2007-08.
Knitted fabrics in square metres are converted into kilograms using conversion rates.
The working days taken for larger diameter and advanced knitting machines are 330 in a year at 90 per cent capacity utilization.
In case of relatively lesser diameter and less modernized knitting machines 350 working days are taken at 95% capacity utilisation.
The production for advanced knitting machine is estimated at 400 kg per day (24 hours) and relatively less advanced knitting machine at 100 kg. per day.
3% depreciation per year of has been assumed.

Average price of a new knitting machines = Rs.3,500,000
Average price of a second hand knitting machines = Rs.1,400,000
It is assumed that average composition of new and second hand knitting machine during 2007-08 to 2015-16 will be 75% and 25% respectively.

Knitted fabric is a fast growing segment. It is estimated that by 2011-12, 12482 extra knitting machines will be required. By 2015-16 their requirement will further increase to 28665 knitting machines. It is estimated that during 2007-08 to 2011-12, Rs.3713 crore will be required to be invested in the knitting segment. During 2007-08 to 2015-16 required investment in the segment will be Rs. 8528 crore (Table 8.6).

Garment:
No. of additional stitching machine required by 2015-16 (SM16) =

$$\frac{((G16 / 1.657) - (G8 / 1.657) + (G8 / 1.657) *0.24)}{16 * 320 * 0.95}$$

G08 and G16 is projected readymade garments (fabric equivalent) demand in square metres by 2008-09 and 2015-16 respectively, which is converted into pieces by assuming 1 piece = 1.657 square metres.

It is assumed that 16 pieces per day can be produced per stiching machine. The numbers of working days for new machine installed are estimated at 320 days per year at 95 per cent capacity utilisation. Depreciation taken is 3 per cent per year.

Average price of a new stitching machine= Rs. 200,000
Average price of a second hand stitching machine = Rs. 80,000
It is assumed that average composition of new and second hand stitching machines during 2007-08 to 2015-16 will be 90% and 10% respectively.

It is estimated that during 2007-08, there were 15.83 lakh stitching machines of various types engaged in the country. This excludes the stitching machines engaged in custom tailoring across the country. By the year 2011-12, it is estimated that 8.87 lakh additional power operated stitching machines would be required and 21.06 lakh by 2015-16. During 2007-08 to 2011-12, investment worth Rs.16681 crore would be required for modernization and expansion of the sector. For the period 2007-08 to 2015-16, investment required would be worth Rs 39611 crore (Table 8.6).

Total Investment Requirement

The total investment requirement for the period 2007-08 to 2011-12 is Rs. 78972 crore in textiles and clothing sector and Rs. 200985 crore during 2007-08 to 2015-16.

To finance the investment of such a large magnitude, both debt and equity avenues will have to be explored. Foreign Direct Investment (FDI) avenues should also be properly explored and enabling environment needs to be created by Government in this regard.

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Assessing the Prospects for India's Textile and Clothing Sector

(Appendices)

July 2009

Table: 3.1A
Parameter wise Operational Cost in Powerloom Sector at India Level

Number of worker	0-1		2-5				
Type of fabric	Silk	Synthetic	Cotton	Cotton blended	Wool	Synthetic	Silk
Varieties produced	Saree	Dhoti	Dhoti, saree, bedsheet	Dhoti, towel, lungi	Shawl, blenket	Saree	Saree
Yarn	20.12	16.91	14.29	22.12	46.13	14.13	10.56
Auxiliary material	4.61	3.38	2.64	11.85	0.75	0.45	2.11
Transportation	-	2.77	0.39	0.88	0.76	0.26	0.20
Communication	-	1.11	0.19	0.16	0.09	0.20	0.31
Electricity	2.05	6.10	1.45	3.07	1.62	1.01	1.00
Maintenance expenditure on looms and other equipment	0.8	-	0.30	0.33	0.16	-	0.46
wage	11.0	3.99	2.99	6.98	2.19	10.93	4.19
Total	38.55	34.26	22.26	45.38	51.68	26.98	18.82
Number of units	2	2	53	11	11	14	7

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Table: 3.1A

Parameter wise Operational Cost in Powerloom Sector at India Level

Number of worker	6-10				11-20			
Type of fabric	Cotton	Cotton blended	Wool	Synthetic	Cotton	Cotton blended	Synthetic	Wool
Varieties produced	Long cloth, bedsheet, gamchas	Dhoti, saree, lungi	Shawl, blenket	Saree	Dhoti, saree, long cloth, bedsheet	Saree, long cloth	Saree, bedsheet	Blanket
Yarn	20.13	20.28	39.14	31.51	11.00	9.10	12.41	77.68
Auxiliary material	1.17	4.17	0.50	6.94	2.47	1.66	1.91	0.83
Transportation	0.11	1.24	0.41	0.86	0.23	0.33	0.29	0.79
Communication	0.02	0.25	0.08	0.23	0.24	0.13	0.08	0.04
Electricity	0.81	2.51	1.18	4.20	0.70	0.99	1.36	1.33
Maintenance expenditure on looms and other equipment	0.05	0.19	0.04	0.44	0.04	0.11	0.16	0.10
wage	1.31	6.42	1.96	9.99	2.14	3.20	2.03	1.82
Total	23.60	35.06	43.31	54.18	16.81	15.51	18.23	82.60
Number of units	17	6	11	19	39	10	25	5

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Table: 3.1A

Parameter wise Operational Cost in Powerloom Sector at India Level

Number of worker	21-50				>50	
Type of fabric	cotton	cotton blended	Synthetic	Wool	cotton	Cotton blended
Varieties produced	Dhoti, gamchas, long cloth, bedsheet	bedsheet, saree, dhoti	bedsheet, saree	blanket	Dhoti, bedsheet, long cloth	Dhoti
Yarn	10.37	3.85	12.52	13.34	16.43	9.44
Auxiliary material	0.76	1.15	0.23	0.84	0.75	0.74
Transportation	0.18	0.19	0.12	0.83	0.11	0.37
Communication	0.05	0.07	0.03	0.02	0.04	0.05
Electricity	0.40	0.51	0.75	2.18	0.51	0.54
Maintenance expenditure on looms and other equipment	0.77	0.03	0.07	0.14	0.54	0.05
wage	1.79	1.48	0.72	1.87	1.16	1.65
Total	14.32	7.28	14.44	19.22	19.54	12.83
Number of units	82	18	12	6	11	2

Source: Source: Primary survey conducted by NCAER in 2008-09

Table 3.2A
State-wise Production Related Information in Powerloom Units on an Average

Activity	Andhra pradesh	Karnataka		Haryana			Rajasthan		Gujarat		West Bengal
Type of fabric	Cotton	Synthetic	Cotton	wool, cotton, synthetic	cotton, synthetic	cotton	Cotton		Synthetic	Cotton	Cotton
Varieties produced	Dhoti	Saree	Dress material	Blanket	bed sheet	long cloth	Gray fabric	Bed sheet	Gray fabric	long cloth	Saree
Fabric Production sq. mt/year/unit	106500	31217	40500	177967	317635	211148	571769	315343	453196	657801	47186
Production sq. mt/loom /year	5325	5895	4050	14063	16030	20166	42363	37516	23257	33025	11797
Fabric Production sq. mt/day/unit	355	137	135	574	1025	681	2053	1109	1579	2276	131
Production sq. mt/loom /day	18	19	14	45	52	65	154	135	81	114	33
Average size of unit (no. of loom)	20	7	10	13	20	11	14	8	20	20	4
Production sq. mt/ worker/ day/ shift/ unit	28	19	14	58	81	65	89	68	58	92	33
Main workers required/ loom/ shift	0.7	1	1	0.8	0.7	1	0.9	1	0.8	0.7	1
Number of working day/ year	300	314	300	310	310	310	277	278	288	291	360
Number of working hours/ day	8	10	10	10	10	10	20	20	24	16	8
Wage/ worker/ day/ shift (Rs)	150	250	250	154	151	152	168	144	104	95	69
Number of units	5	39	1	11	7	4	18	4	20	11	22

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Table 3.2A

State-wise Production Related Information in Powerloom Units on an Average

Activity	Punjab			Uttar Pradesh					Tamilnadu		
Type of fabric	wool			Cotton		Cotton blended		Silk	Cotton		
Varieties produced	Blanket	Shawl	Loi	Dhoti	Bedsheet	Dhoti	Towel	Saree	Dhoti	Bedsheet	Saree
Fabric Production sq. mt/year/unit	225125	202851	408188	41871	72931	48138	86400	22844	1066719	1833931	912123
Production sq. mt/loom /year	19700	58084	20344	17133	21906	16499	28200	7786	25985	36539	26598
Fabric Production sq. mt/day/unit	750	676	1361	131	202	152	257	75	3439	5773	2912
Production sq. mt/loom /day	66	194	68	54	61	52	83	26	84	115	84
Average size of unit (no. of loom)	12	5	19	3	3	3	3	3	40	50	33
Production sq. mt/ worker/ day/ shift/ unit	77	194	110	54	61	52	83	26	53	76	44
Main workers required/ loom/ shift	0.9	1	0.7	1	1	1	1	1	0.6	0.5	0.7
Number of working day/ year	300	300	300	315	362	313	335	301	309	317	317
Number of working hours/ day	11	11	10	13	11	15	11	15	24	24	24
Wage/ worker/ day/ shift (Rs)	150	150	150	83	60	88	59	95	137	134	135
Number of units	9	10	2	16	3	4	4	10	26	15	3

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Table 3.2A

State-wise Production Related Information in Powerloom Units on an Average

Activity	MP		Maharashtra							Orissa
Type of fabric	Cotton		Cotton		cotton blended, synthetic					Cotton
Varieties produced	Gray fabric, saree	Bed sheet	Saree, dhoti, shurting, dress material	Long cloth	Saree	Bedsheet	Long cloth	Lungi	Dhoti	Gamchas
Fabric Production sq. mt/year/unit	48779	33664	235546	561599	325857	332472	157395	83320	375188	310320
Production sq. mt/loom /year	9520	14542	12357	11936	12655	12145	11588	12876	11981	7600
Fabric Production sq. mt/day/unit	163	112	804	1884	1095	1099	525	279	1347	1140
Production sq. mt/loom /day	32	48	42	40	43	40	39	43	41	28
Average size of unit (no. of loom)	6	2	19	47	26	27	14	6	32	39
Production sq. mt / worker/ day/ shift/ unit	32	48	64	80	71	77	39	43	76	28
Main workers required/ loom/ shift	1	1	0.7	0.5	0.7	0.6	1	1	0.6	1
Number of working day/ year	300	300	294	298	298	302	300	298	290	269
Number of working hours/ day	9	9	8	9	9	9	10	9	9	12
Wage/ worker/ day/ shift (Rs)	150	150	189	156	140	144	180	130	150	118
Number of units	6	3	23	33	21	5	4	6	9	13

Source: Primary survey data conducted by NCAER in 2008-09

Table 3.3A
State and Parameter wise Operational Cost in Powerloom Sector

(Rs./ Sq. mts)

Parameter	Andhra Pradesh	Karnataka		Haryana			Rajasthan		Gujarat		West Bengal
Type of fabric	Cotton	Synthetic	Cotton	wool, cotton, synthetic	cotton, synthetic	cotton	Cotton		Synthetic	Cotton	Cotton
Varieties produced	Dhoti	Saree	Dress material	Blanket	bed sheet	long cloth	Gray fabric	Bed sheet	Gray fabric	long cloth	Saree
Yarn	10.00	22.51	11.85	19.28	24.15	14.94	16.74	9.34	9.30	5.07	19.23
Auxiliary material	0.17	0.50	0.49	1.06	0.17	0.19	-	0.06	-	-	0.75
Transportation	0.26	0.33	0.25	1.03	0.26	0.19	-	-	-	-	0.48
Communication	-	0.20	0.12	0.01	0.05	0.01	0.22	0.01	-	-	0.22
Electricity	0.51	1.32	1.73	3.58	1.25	1.33	0.34	0.49	0.57	0.40	1.05
Maintenance expenditure on looms and other equipment	0.16	-	-	0.03	0.07	0.02	-	-	0.16	-	-
Wages	5.53	12.55	14.81	2.83	1.15	1.66	1.04	1.15	0.71	0.41	2.51
Total	16.63	37.40	29.26	27.81	27.12	18.33	18.33	11.04	10.74	5.89	24.24
Wieght of fabric/ sq. mts. (gm)	67	74	67	431	258	80	144	161	72	42	125

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Table 3.3A

State and Parameter wise Operational Cost in Powerloom Sector

(Rs./ Sq. mts)

Parameter	Punjab			Uttar Pradesh					Tamilnadu		
Type of fabric	wool			Cotton		Cotton blended		Silk	Cotton		
Varieties produced	Blanket	Shawl	Loi	Dhoti	Bedsheet	Dhoti	Towel	Saree	Dhoti	Bedsheet	Saree
Yarn	72.99	26.29	12.38	10.15	6.86	7.79	5.50	9.73	10.45	17.62	8.91
Auxiliary material	0.73	0.63	0.06	2.48	1.05	3.00	0.93	2.27	1.52	0.15	
Transportation	0.73	0.63	0.06	0.25	0.07	0.18	0.11	0.21	0.21	0.04	0.04
Communication	0.07	0.09	0.04	0.13	0.07	0.11	0.06	0.33			
Electricity	0.54	0.26	0.21	0.62	0.07	0.42	0.09	0.89	0.70	0.20	0.79
Maintenance expenditure on looms and other equipment	0.11	0.07	0.06	0.36	0.16	0.62	0.14	0.40	0.53	0.29	
Wages	1.75	1.35	1.87	4.13	1.55	3.12	1.49	4.18	0.90	0.62	1.10
Total	76.92	29.32	14.69	18.12	9.83	15.24	8.32	18.02	14.31	18.93	10.84
Wieght of fabric/ sq. mts. (gm)	229	67	273	101	152	46	95	67	76	141	67

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Table 3.3A

State and Parameter wise Operational Cost in Powerloom Sector

(Rs./ Sq. mts)

Parameter	MP		Maharashtra							Orissa
Type of fabric	Cotton		Cotton		cotton blended, synthetic					Cotton
Varieties produced	Gray fabric, saree	Bed sheet	Saree, dhoti, shurting, dress material	Long cloth	Saree	Bedsheet	Long cloth	Lungi	Dhoti	Gamchas
Yarn	9.49	8.42	10.42	3.87	5.02	10.23	18.27	17.16	11.93	11.57
Auxiliary material	0.26	0.30	1.71	0.71	0.99	1.87	2.79	6.73	2.01	0.51
Transportation	-	-	0.08	0.15	0.22	0.40	0.46	0.90	0.62	-
Communication	-	-	0.06	0.06	0.09	0.13	0.17	0.24	0.10	-
Electricity	0.16	0.11	0.33	0.26	0.60	0.98	1.75	2.53	1.05	0.37
Maintenance expenditure on looms and other equipment	0.15	0.45	0.06	0.02	0.05	0.03	0.16	0.24	0.05	0.21
Wages	1.21	2.97	5.86	1.98	1.78	2.30	5.77	3.62	3.67	4.94
Total	11.26	12.24	18.54	7.06	8.75	15.93	29.36	31.42	19.44	17.60
Wieght of fabric/ sq. mts. (gm)	79	136	73	78	75	157	79	82	68	86

Source: Primary survey data conducted by NCAER in 2008-09

Table 3.4 A
Production Related Information in Hosiery-garment Sector

Parameter	Tirupur					Ludhiana			Kanpur		
	T-shirt	Pyjama	Brief	Vest	Kidswear	Pullover	T-shirt	Kidswear	Brief	Vest	Socks (pair)
Pieces produced/year/unit	17081000	5573800	37758000	27869000	9889000	1760800	2582300	2810150	6060500	7641500	3794400
Production/machine /year	29450	9610	65100	48050	17050	6200	10540	11470	35650	44950	22320
Production /day/unit	55100	17980	121800	89900	31900	5680	8330	9065	19550	24650	12240
Production /machine /day (12 hr.)	95	31	210	155	55	20	34	37	115	145	72
Production (pieces)/ worker/ day (8 hrs.)/ unit	59	22	145	105	40	15	23	26	74	94	48
workers/ day/ unit	940					455	364		245		
Main workers required/ machine/ day	1					1	1		1		
Number of working day/ year	310					310	310		310		
Number of working hours/ day	12					12	12		12		
Wage/ worker/ day (8 hrs) (Rs)	110					120	125		105		
Size of the unit (no. of machines)	580					284	245		170		
No. of Units Covered	15					12	8		20		

Source: Primary survey data conducted by NCAER in 2008-09

Table 3.5A
Parameter wise Operational Cost in Hosiery-garment Sector

(Rs/piece)

Parameter	Tirupur					Ludhiana			Kanpur		
	T-shirt	Pyjama	Brief	Vest	Kidswear	Pullover	T-shirt	Kidswear	Brief	Vest	Socks
Fabric	64	100	5	6	30	60	35.0	40.0	9.6	10.8	8.0
Auxiliary Material	15	15	5	5	8	12	7.0	12.0	3.0	2.0	1.5
Transportation	4	4	1.5	1.1	3	2.2	1.5	2.5	0.3	0.72	0.8
Communication	1.1	0.9	1.2	0.8	1	2.2	0.5	1.5	0.8	1.1	0.6
Electricity	3	2.5	0.9	1.5	2.5	3.5	2.5	3.5	1.2	1.8	1.2
Maintenance expenditure on machines and other equipment	2	2	2	2	2	3	1.2	1.5	0.5	1.5	0.8
Wages	5	7	2	2	4	8	5.5	11.0	1.5	3.6	2.3
Total	94.1	131.4	17.6	18.4	50.5	90.9	53.2	72.0	16.9	21.5	15.1
Yarn type	cotton	cotton	cotton	cotton	cotton	Acrylic	cotton	cotton	cotton	cotton	cotton blended
Wieght of garment per piece (gm)	300	450	50	115	100	300	200	250	50	70	30
No. of Units Covered	15					12	8		20		

Source: Primary survey data conducted by NCAER in 2008-09

Table:3.6A
Parameter wise Operational Cost in Handloom Sector in India

Number of worker	1				2-5			
Type of fabric	Cotton	Cotton blended	Silk	Synthetic	Cotton	Wool	Synthetic	Silk
Varieties produced	Bedsheet, durrie, saree, duster	Bedsheet, durrie	Saree	Saree	Bedsheet, duster, gamchas, durrie, saree	Shawl, blanket, muffler	Saree	Saree
Yarn	24.20	8.25	67.99	51.03	40.87	82.93	48.65	73.67
Auxiliary material	0.92	0.20	2.01	-	5.84	1.00	4.40	0.84
Transportation	1.69	1.40	0.20	-	1.20	0.13	-	0.13
Communication	0.35		0.50	-	0.61		-	0.28
Electricity	1.14	0.40	0.30		0.47	0.78	-	0.26
Maintenance expenditure on looms and other equipment	-	1.40		-	0.44	0.76	-	0.08
Wage	7.35	4.01	26.9	2.37	12.28	14.59	5.32	8.23
Total	35.65	15.67	97.88	53.39	61.70	100.20	58.37	83.49
Number of units	24	5	1	6	53	14	5	6

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Table:3.6A

Parameter wise Operational Cost in Handloom Sector in India

Number of worker	6-10				11-20				21-50			
Type of fabric	Cotton	Wool	Synthetic	Silk	Cotton	Cotton blended	Cotton, silk	Silk	Cotton	Cotton blended	Silk	Cotton, silk
Varieties produced	Bedsheet, long cloth, durrie, duster	Shawl, loi	Bedsheet, long cloth, saree	Saree	Saree, bedsheet, durrie, long cloth	Bedsheet, durrie, saree	Saree	Saree	Saree, durrie, bedsheet, dress material	Bedsheet, durrie, saree	Saree, dress material	Saree, dress material
Yarn	18.30	71.77	22.69	94.72	14.60	26.94	63.66	85.03	13.55	11.65	97.15	44.94
Auxiliary material	2.72	-	2.80	3.12	3.83	5.84	7.13	2.85	2.17	1.68	2.83	10.91
Transportation	0.57	-	0.68	0.24	0.38	0.09	0.24	0.26	0.24	0.02	0.63	
Communication	0.29	-	0.23	0.99	0.31	0.03	0.59	0.81	0.11	0.01	0.60	
Electricity	0.46	0.57	3.09	0.42	0.20	0.10	0.36	0.31	0.65	0.07	0.43	0.27
Maintenance expenditure on looms and other equipment	1.94	0.40	0.52	-	0.08	0.23	-	-	0.03	0.31	-	-
wage	5.02	10.95	3.43	25.91	5.18	7.53	20.94	22.2	2.67	8.77	21.01	10.43
Total	29.30	83.69	33.43	125.41	24.57	40.76	92.92	111.51	19.42	22.51	122.66	66.55
Number of units	53	3	9	4	25	9	4	5	13	12	2	4

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Table:3.6A

Parameter wise Operational Cost in Handloom Sector in India

Number of worker	51-100			>100
Type of fabric	cotton	Cotton blended	Silk	Cotton
Varieties produced	Saree, durrie, dress material	Durrie, gamchas	Saree, dress material	Durrie, dress material
Yarn	6.48	49.94	92.61	71.00
Auxiliary material	2.86	0.12	12.35	4.11
Transportation	0.15	0.09	1.54	0.01
Communication	0.07	0.05	1.54	0.17
Electricity	0.21	0.05	0.19	0.19
Maintenance expenditure on looms and other equipment	-	-	5.02	-
wage	1.20	8.24	20.07	12.19
Total	10.96	58.49	133.32	87.68
Number of units	4	2	2	2

Source: Primary survey data conducted by NCAER in 2008-09

Table:3.7A

State-wise Production and Related Information in Handloom Unit on an Average

State	West Bangal	Delhi	Jammu & Kashmir			Punjab	Orissa*			Haryana	
Type of fabric	Cotton	Cotton	Wool			cotton, wool	cotton	Silk	cotton, silk	Cotton blended	
Varieties produced	Saree	Bedsheet	Blanket	Shawl	Loi	Blanket	Saree, dress material, furnishing	Saree, dress material, furnishing	Saree, dress material, furnishing	Bedsheet	Durrie
Fabric Production sq mt/year/unit	179542	32478	9990	19993	8098	92929	113545	64786	39010	176102	158856
Production sq mt/loom/year	6914	5918	3659	2544	2563	7949	1961	791	1335	7558	3481
Fabric Production sq mt/day/unit	499	116	42	83	34	307	378	216	130	587	530
Production sq mt/loom/day	19	21	15	11	11	27	7	3	4	25	12
Average size of unit (No. of loom)	31	5	3	8	3	11	57	79	30	24	53
Production sq mt/ worker/day	19	21	15	11	11	27	7	3	4	25	12
Main worker required per loom/ shift	1	1	1	1	1	1	1	1	1	1	1
working hours/ day	8	9	8	8	8	10	10	12	10	10	10
number of working day/year	360	280	240	240	240	294	300	300	300	300	300
Wage/ worker/ day (Rs)	71	94	120	120	120	113	80	80	80	142	141
Number of unit	9	22	3	3	4	10	5	2	5	9	10

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Table:3.7A

State-wise Production and Related Information in Handloom Unit on an Average

State	Karnataka			Rajasthan			AP			UP		HP
							Warangal	Jangaon	Guntur	Banda	Fatehpur	
Type of fabric	Synthetic	Cotton	Silk	Cotton			Cotton	Silk	Cotton	cotton, cotton blended	cotton	Wool
Varieties produced	saree	saree	saree	Bedsheet	Duster	Durrie	Durrie	Saree	Saree	Durrie, bedsheet	bedsheet	shawl, pattoo, muffler
Fabric Production sq mt/year/unit	22425	18980	27300	46431	8156	5496	5656	13000	7683	3840	3932	13678
Production sq mt/loom/year	9588	11180	7800	4495	4350	5496	1049	798	3964	2773	3932	2538
Fabric Production sq mt/day/unit	64	54	78	155	27	18	19	43	24	12	13	53
Production sq mt/loom/day	27	32	22	15	14	18	3	3	12	9	13	10
Average size of unit (No. of loom)	3	2	4	13	2	1	6	16	2	1	1	4
Production sq mt/ worker/day	27	32	22	15	14	18	3	3	12	9	13	10
Main worker required per loom/ shift	1	1	1	1	1	1	1	1	1	1	1	1
working hours/ day	12	11	12	8	8	8	10	10	10	12	12	8
number of working day/year	350	350	350	300	300	300	300	300	338	320	315	260
Wage/ worker/ day (Rs)	56	53	60	135	135	120	40	50	49	76	63	100
Number of unit	12	3	2	4	6	1	8	10	8	9	11	8

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Table:3.7A

State-wise Production and Related Information in Handloom Unit on an Average

State	MP	Maharashtra							Tamilnadu			
Type of fabric	cotton	cotton, cotton blended			cotton				Cotton		cotton, silk	Silk
Varieties produced	Bedsheet, saree	Saree	Gamchas	Dhoti	Durri	Blanket	Bedsheet	Duster	Bedsheet	Dhoti, saree, towel, furnishing	furnishing, saree	Saree
Fabric Production sq mt/year/unit	51719	91028	56912	17160	91732	51420	75735	57855	40856	43392	32141	23808
Production sq mt/loom/year	6251	3721	3584	4368	5468	6421	5801	9248	3997	4187	2381	2381
Fabric Production sq mt/day/unit	207	320	204	62	335	179	267	240	130	138	100	74
Production sq mt/loom/day	25	13	13	16	20	23	21	38	13	14	7	7
Average size of unit (No. of loom)	8	24	15	4	17	8	12	6	10	10	14	10
Production sq mt/ worker/day	25	13	13	16	20	23	21	38	13	14	7	7
Main worker required per loom/ shift	1	1	1	1	1	1	1	1	1	1	1	1
working hours/ day	10	9	9	8	9	9	8	9	8	8	8	8
number of working day/year	250	283	280	280	274	285	285	244	315	307	320	320
Wage/ worker/ day (Rs)	120	104	104	90	107	95	163	80	132	137	156	185
Number of unit	24	7	5	2	23	4	4	11	13	3	4	5

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Table:3.7A

State-wise Production and Related Information in Handloom Unit on an Average

State	Gujarat	Kerala*#	Assam*
Type of fabric	Silk	cotton	Silk
Varieties produced	Saree	Dhoti, saree	Saree
Fabric Production sq mt/year/unit	3214	75242	136420
Production sq mt/loom/year	1023	495	1015
Fabric Production sq mt/day/unit	11	249	500
Production sq mt/loom/day	3	2	4
Average size of unit (No. of loom)	3	145	116
Production sq mt/ worker/day	3	2	4
Main worker required per loom/ shift	1	1	1
working hours/ day	8	4	10
number of working day/year	299	253	255
Wage/ worker/ day (Rs)	100	-	105
Number of unit	10	8	10

In Kerala production per loom/ day is very low becouse they engaged other activities for which they earn more money, handloom are part time job for that

Source: Primary survey data conducted by NCAER in 2008-09

Table:3.8A
State and Parametre-wise Operational Cost in Handloom Sector

State	West Bangal	Delhi	Jammu & Kashmir			Punjab	ORISSA*			Haryana	
Type of fabric	Cotton	Cotton	wool			cotton, wool	cotton	Silk	cotton, silk	Cotton blended	
Varieties produced	Saree	Bedsheet	Blanket	Shawl	Loi	Blanket	Saree, dress material, furnishing	Saree, dress material, furnishing	Saree, dress material, furnishing	Bedsheet	Durrie
Yarn	7.44	46.81	87.92	101.32	114.69	34.72	25.36	92.61	46.36	16.89	46.54
Auxiliary material	0.44	6.28	-	-	-	1.89	6.65	11.04	11.32	0.03	0.04
Transportation	0.17	-	-	-	-	0.34		1.54		0.02	0.02
Communication	0.07	0.18	-	-	-	0.17	0.88	1.54		0.01	0.01
Electricity	0.01	0.11	0.60	0.60	0.93	1.73	0.62	0.15	0.26	0.07	0.08
Maintenance expenditure on looms and other equipment	-	-	0.83	0.42	0.74	0.30	-	5.02	-	-	-
wage	3.03	14.71	9.78	17.34	15.03	3.54	5.54	20.07	10.60	5.74	13.49
Total	11.15	68.10	99.13	119.67	131.39	42.68	39.05	131.97	68.53	22.77	60.17
weight of fabric/sq met (grams)	60	267	546	161	558	560	108	71	94	172	359

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Table:3.8A

State and Parametre-wise Operational Cost in Handloom Sector

State	Karnataka			RAJASTHAN			AP			UP	
							Warangal	Jangaon	Guntur	Banda	Fatehpur
Type of fabric	Synthetic	Cotton	Silk	Cotton			Cotton	Silk	Cotton	cotton, cotton blended	Cotton
Varieties produced	saree	saree	saree	Bedsheet	Duster	Durrie	Durrie	Saree	Saree	Durrie, bedsheet	Bedsheet
Yarn	48.93	31.82	72.25	35.67	37.80	27.29	17.77	98.54	13.34	5.30	11.10
Auxiliary material	-	-	-	2.09	0.18	0.45	1.09	1.68	0.80	0.13	-
Transportation	-	-	-	0.52	1.84	-	-	0.77	-	0.93	-
Communication	-	-	-	-	-	-	-	-	-	-	-
Electricity	-	-	-	-	-	-	1.06	0.54	-	0.26	1.53
Maintenance expenditure on looms and other equipment	-	-	-	-	-	-	0.00	0.08	-	0.91	-
wage	2.53	2.11	3.57	11.26	9.26	6.55	11.67	21.44	6.00	9.61	5.60
Total	51.46	33.93	75.82	49.53	49.08	34.30	31.59	123.05	20.15	17.13	18.22
weight of fabric/sq met (grams)	79	77	77	192	157	546	192	75	76	115	280

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Table:3.8A

State and Parametre-wise Operational Cost in Handloom Sector

State	MP	HP	Maharashtra							Tamilnadu			
Type of fabric	cotton	Wool	cotton & cotton blended			cotton			cotton	Cotton		cotton, silk	Silk
Varieties produced	Bedsheet, saree, long cloth	shawl, pattoo, muffler	Saree	Gamchas	Dhoti	Durri	Blanket	Bedsheet	Duster	Bedsheet	Furnishing, dhoti, saree, towel	furnishing, saree	Saree
Yarn	8.48	16.63	19.46	16.06	26.85	11.04	10.39	16.08	2.77	31.23	16.56	66.24	83.00
Auxiliary material	1.31	0.92	11.70	1.07	1.78	2.90	0.69	1.07	1.02	1.21	1.21	1.41	2.01
Transportation	-	0.09	0.82	0.84	1.40	0.44	0.54	0.84	-	0.20	0.20	0.20	0.20
Communication	-		0.15	0.42	0.70	0.24	0.27	0.42	-	0.50	0.50	0.50	0.50
Electricity	-	0.09	-	-	-	-	-	-	-	0.30	0.30	0.30	0.30
Maintenance expenditure on looms and other equipment	-	0.47	0.45	0.02	0.04	0.03	0.01	0.02	-	-	-	-	-
wage	3.58	7.31	8.45	2.30	3.85	4.40	1.49	2.30	2.06	10.12	10.85	21.83	23.78
Total	13.37	25.51	41.03	20.70	34.62	19.06	13.40	20.73	5.85	43.55	29.61	90.48	109.79
weight of fabric/sq met (grams)	59	67	71	75	64	303	260	187	27	150	88	88	69

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Table:3.8A

State and Operational wise Operational Cost in Handloom Sector

State	Gujarat	Kerala*	Assam*
Type of fabric	Silk	cotton	Silk
Varieties produced	Saree	Dhoti, saree	Saree
Yarn	107.18	7.18	49.42
Auxiliary material	11.12392	1.43	3.45
Transportation	-	0.23	-
Communication	-	0.56	-
Electricity	-	0.13	0.30
Maintenance expenditure on looms and other equipment	-	0.25	-
wage	10.13	4.00	30.90
Total	128.44	13.77	84.08
weight of fabric/sq met (grams)	-	36	46

Source: Primary survey data conducted by NCAER in 2008-09

Table 3.9A
Production Related Information in Garment Sector at India Level

Number of worker	1	2-5	6-10	11-20	21-50	>50	1	2-5	6-10	11-20	21-50	>50	1	2-5	6-10	11-20	21-50	>50
Product	Skirt						Top						Blouse					
Pieces produced/year/unit	-	-	-		-	239250	-	-	-	-	-	247444	-	-	-		67667	146063
Production/machine /year (Pieces)	-	-	-		-	2719	-	-	-	-	-	2857	-	-	-		2900	2850
Production /day/unit (Pieces)	-	-	-		-	825	-	-	-	-	-	853	-	-	-		226	487
Production (pieces)/ machine/ day (8 hrs.)	-	-	-		-	9	-	-	-	-	-	10	-	-	-		10	10
workers/ day/ unit	-	-	-		-	104	-	-	-	-	-	100	-	-	-		30	61
Main workers required/ machine/ day	-	-	-		-	1	-	-	-	-	-	1	-	-	-		1	1
Number of working day/ year	-	-	-		-	290	-	-	-	-	-	290	-	-	-		300	300
Number of working hours/ day	-	-	-		-	9	-	-	-	-	-	9	-	-	-		8	8
Wage/piece/ day (Rs)	-	-	-		-	15	-	-	-	-	-	14	-	-	-		14	14
Size of the unit (no. of machines)	-	-	-		-	88	-	-	-	-	-	87	-	-	-		23	51
No. of Units Covered	-	-	-		-	40	-	-	-	-	-	40	-	-	-		3	4

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Table 3.9A

Production Related Information in Garment Sector at India Level

Number of worker	1	2-5	6-10	11-20	21-50	>50	1	2-5	6-10	11-20	21-50	>50	1	2-5	6-10	11-20	21-50	>50
Product	Kids wear						Suit						Salwar					
Pieces produced/year/unit	-	-	-	39100	113222	273571	-	7218	12320		-		-	6221	15360	-		
Production/machine /year (Pieces)	-	-	-	3654	372	3535	-	2240	2240		-		-	2592	2560	-		
Production /day/unit (Pieces)	-	-	-	129	372	944	-	23	39		-		-	19	48	-		
Production (pieces)/ machine/ day (8 hrs.)	-	-	-	12	12	12	-	7	7		-		-	8	8	-		
workers/ day/ unit	-	-	-	16	39	92	-	4	7		-		-	3	8	-		
Main workers required/ machine/ day	-	-	-	1	1	1	-	1	1		-		-	1	1	-		
Number of working day/ year	-	-	-	302	304	290	-	320	320		-		-	320	320	-		
Number of working hours/ day	-	-	-	8	9	9	-	8	8		-		-	8	8	-		
Wage/piece/ day (Rs)	-	-	-	15	15	11	-	20	18		-		-	15	15	-		
Size of the unit (no. of machines)	-	-	-	11	32	77	-	3	6		-		-	2	6	-		
No. of Units Covered	-	-	-	10	14	35	-	9	2		-		-	10	1	-		

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Table 3.9A
Production Related Information in Garment Sector at India Level

Number of worker	1	2-5	6-10	11-20	21-50	>50	1	2-5	6-10	11-20	21-50	>50
Product	Shirt						Pant					
Pieces produced/year/unit	-		9323	32065	90947	422851	-	-	9138	28268	73372	339177
Production/machine /year (Pieces)	-		1813	2823	3274	2923	-	-	1661	2450	2552	2624
Production /day/unit (Pieces)	-		35	112	315	1403	-	-	34	99	252	1125
Production (pieces)/ machine/ day (8 hrs.)	-		7	10	11	10	-	-	6	9	9	9
workers/ day/ unit	-		7	16	35	170	-	-	8	16	36	149
Main workers required/ machine/ day	-		1	1	1	1	-	-	1	1	1	1
Number of working day/ year	-		270	286	289	301	-	-	271	287	292	301
Number of working hours/ day	-		8	9	8	8	-	-	8	9	8	8
Wage/piece/ day (Rs)	-		23	18	16	18	-	-	26	21	20	23
Size of the unit (no. of machines)	-		5	11	28	145	-	-	6	12	29	129
No. of Units Covered	-		9	14	9	30	-	-	10	13	12	27

Source: Primary survey data conducted by NCAER in 2008-09

Table 3.10 A
State-wise Production Related Information in Garment Sector

Parameter	Delhi				UP			Tamilnadu			MP	
	Skirt	Blouse	Top	kids wear	Skirt	Top	kids wear	Shirt	Pant	Kids wear	Suit	Salwar
Pieces produced/year/unit	221156	111964	214838	240167	256900	271628	267036	145915	124247	98827	8145	7061
Production/machine /year (Pieces)	2625	2850	2550	3300	2800	3052	3696	3813	3258	3729	2240	2589
Production /day/unit (Pieces)	737	373	716	801	918	970	954	478	407	324	25	22
Production (pieces)/ machine/ day (8 hrs.)	9	10	9	11	10	11	13	13	11	12	7	8
workers/ day/ unit	99	48	96	86	110	104	87	46	45	33	5	4
Main workers required/ machine/ day	1	1	1	1	1	1	1	1	1	1	1	1
Number of working day/ year	300	300	300	300	280	280	280	305	305	305	320	320
Number of working hours/ day	8	8	8	8	9	9	9	9	9	9	8	8
Wage/piece/ day (Rs)	17	14	17	13	13	12	10	15	17	15	20	15
Size of the unit (no. of machines)	84	39	84	73	92	89	72	38	38	27	4	3
No. of Units Covered	20				20			22			11	

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Table 3.10A

State-wise Production Related Information in Garment Sector

Parameter	Gujarat		Karnataka		Maharashtra	
	Shirt	Pant	Shirt	Pant	Shirt	Pant
Pieces produced/year/unit	29338	22656	461895	329115	21268	18558
Production/machine /year (Pieces)	2147	1804	2490	2220	2017	1715
Production /day/unit (Pieces)	105	81	1540	1097	83	73
Production (pieces)/ machine/ day (8 hrs.)	8	6	8	7	8	7
workers/ day/ unit	18	16	218	172	14	14
Main workers required/ machine/ day	1	1	1	1	1	1
Number of working day/ year	280	280	300	300	255	255
Number of working hours/ day	9	9	8	8	8	8
Wage/piece/ day (Rs)	23	27	19	26	19	23
Size of the unit (no. of machines)	14	13	186	148	11	11
No. of Units Covered	9		20		11	

Source: Primary survey data conducted by NCAER in 2008-09

Table 3.11A
State and Parameter wise Operational Cost in Garment Sector

(Rs/piece)

Parameter	Delhi				UP			Tamilnadu			MP	
	Skirt	Blouse	Top	kids wear	Skirt	Top	kids wear	Shirt	Pant	Kids wear	Suit	Salwar
Fabric	158	124	161	132.7	180.3	166.4	171.1	119.2	131.0	121.3	163.6	147.3
Auxiliary Material	22.0	21.0	23.0	23.0	15.0	15.0	17.0	29.0	25.0	26.0	20.0	5.0
Transportation	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.9	1.9	1.9	-	-
Communication	0.5	0.5	0.5	0.5	0.8	0.8	0.8	0.8	0.6	0.5	-	-
Electricity	3.5	4.5	3.5	3.5	3.5	3.2	3.5	2.5	2.9	3.5	1.0	1.0
Maintenance expenditure on machines and other equipment	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.7	1.0	0.9	0.5	0.5
Wages	16.8	14.3	17.0	13.2	13.2	12.2	9.9	13.4	13.4	11.7	19.5	15.0
Total	203.4	167.6	208.0	175.9	214.5	199.3	204.1	167.5	175.9	165.8	204.7	168.8
No. of Units Covered	20				20			22			11	

Contd..

Contd…

Table 3.11A

State and Parameter wise Operational Cost in Garments Sector

(Rs./ piece)

Parameter	Gujarat		Karnataka		Maharashtra	
	Shirt	Pant	Shirt	Pant	Shirt	Pant
Fabric	136.4	149.6	122.1	124.1	132	145
Auxiliary Material	20.0	17.0	25.0	18.0	22	26
Transportation	0.8	0.8	2.0	1.5	-	-
Communication	0.5	0.5	1.2	1.2	-	-
Electricity	3.5	3.5	2.5	3.5	3.5	4.5
Maintenance expenditure on machines and other equipment	0.9	0.9	1.0	1.0	0.8	0.8
Wages	22.8	26.7	18.9	25.9	19	23
Total	184.9	198.9	172.7	175.2	177.2	199.3
No. of Units Covered	9		20		11	

Source: Primary survey data conducted by NCAER in 2008-09

Table 4.1A

Per Capita and Aggregate Consumption of Textiles in Piece Length

Items	Actual per capita Quantity consumed (sq.mtrs) for Cotton Textiles			Actual per capita Quantity consumed (sq.mtrs) for Total Textiles		
	1990 (Q*W)	2000 (Q*W)	2006 (Q*W)	1990 (Q*W)	2000 (Q*W)	2006 (Q*W)
Long cloth/sheeting/Grey Cloth	0.74	0.18	0.04	0.62	0.44	0.11
Poplin/Shirting/Patta Cloth	0.46	0.18	0.16	1.6	1.19	1.37
Coating/Suiting Drill	0.04	0.04	0.03	0.62	0.67	0.65
Ladies Dress Material	0.50	0.38	0.49	1.58	1.50	1.67
Khaki Cloth	-	-	-	-	0.00	-
Furnishing Material	0.07	0.10	0.10	0.07	0.13	0.14
Khadi Cloth	-	0.01	-	0.02	0.01	-
Denim Cloth	-	0.12	-	-	-	-
Others	0.01	0.01	-	0.12	0.03	0.02
Total	1.81	1.01	0.82	4.62	3.97	3.96
Gross Consumption	1535.74	1040.66	916.23	3912.11	4088.28	4446.49

Source: National household survey, textile committee various years.

Note: Q: Quantity in Meters

W: Width in Meters

Q*W in Sq.mtrs

Gross Value in Million Square Mtrs.

(Gross Value = Popn * Total for Piecelength)

(Popn of 1990 = 846.3 millions, 2000 = 1028.73 millions, 2006 = 1122 millions)

Population Figures from Economic Survey of India.

Table 4.2A

Per Capita and Aggregate Consumption of Garments in Piece Length

Items	Actual per capita Quantity Consumed (sq.mtrs) for Cotton Textiles			Actual per capita Quantity consumed (sq. mtrs) for All Textiles		
	1990 (Q*L*W)	2000 (Q*W)	2006 (Q*W)	1990 (Q*L*W)	2000 (Q*W)	2006 (Q*W)
Dhoti	1.08	0.68	0.43	0.9	1	0.58
Lungi	0.66	0.31	0.26	1.05	0.39	0.4
Turban	-	0.02	0.01	0.05	0.02	0.03
Angavastram	-	-	-	-	-	-
Wearable Chadder	0.05	0.03	0.02	0.08	0.11	0.09
Saree (5 Mtrs)	2.31	1.75	2.13	5.12	7.49	9.44
Saree (8 Mtrs)	0.14	0.08	0.04	0.19	0.27	0.06
Half Saree Mekhala	0.00	-	-	-	0.01	-
Odhni/Dupatta	0.05	0.05	0.05	0.14	0.15	0.14
Handkerchief	-	0.01	-	-	0.01	-
Others	0.06	0.01	0.01	-	0.03	0.05
Controlled Saree	-	-	-	-	-	-
Total	4.37	2.93	2.95	7.51	9.48	10.79
Gross Value	3698.58	3015.41	3304.74	6359.48	9755.76	12102.34

Source: National household survey, textile committee various years.

Note: Q: Quantity in No's (For 1990)

Q: Quantity in Meters (For 2000 and 2006)

Q*L*W in sq.mtrs

Q*W in sq.mtrs

Gross Value in Million Square Mtrs.

(Gross Value = Popn * Total for Piecelength)

(Popn of 1990 = 846.3 millions, 2000 = 1028.73 millions, 2006 = 1122 millions)

Population Figures from Economic Survey of India.

Table 4.3A

Per Capita and Aggregate Consumption of Woven Ready-Made Garments

Items	Actual per capita Quantity consumed (sq.metres) for Cotton Textiles			Actual per capita Quantity consumed (sq. meters) for Total Textiles		
	1990 (Q*L*W)	2000 (Q*W)	2006 (Q*W)	1990 (Q*L*W)	2000 (Q*W)	2006 (Q*W)
Shirt/Bush Shirt Manila	0.09	0.13	0.21	0.27	0.43	0.72
Coat/Suit	-	-	-	-	0.02	-
Safari Suit	-	-	-	-	-	0.02
Trouser	0.03	0.06	0.14	0.13	0.23	0.48
Half Pant/Shorts/Quarter Pants	0.06	0.08	0.05	0.08	0.11	0.09
Payjama salwar Chudidar/Kurta Zubba Kameez/Kurta Payjama/ Salwar Kameez/Night Suit/Dressing Gown	0.11	0.37	0.55	0.16	1.03	1.84
Handkerchief	-	-	-	0.00	-	-
Cap	-	0.00	-	0.00	0.00	-
School Uniform	-	0.01	0.01	0.04	0.09	0.12
Blouses/Choli	0.07	0.07	0.06	0.12	0.18	0.12
Frock	0.17	0.06	0.09	0.47	0.30	0.33
Skirt/Midi	0.01	0.02	0.02	0.02	0.06	0.06
Petti Coat	0.20	0.32	0.55	0.22	0.43	0.72
Brassier	-	0.01	0.02	0.01	0.01	0.02
Slack/Jeans/Pants	-	0.20	0.29	-	0.20	0.29
Maxi	0.02	0.03	0.02	0.04	0.04	0.03
Baba Suit/ Baby Jable	0.03	0.04	0.06	0.13	0.17	0.20
Others	0.11	0.07	-	0.07	0.18	-
Total	0.90	1.47	2.07	1.76	3.48	5.04
Gross Value	761.67	1512.23	2322.54	1489.49	3579.98	5654.88

Source: National household survey, textile committee various years.

Note: Q: Quantity in No's (For 1990)

Q: Quantity in Meters (For 2000 and 2006) , Q*L*W in sq.mtrs, Q*W in sq.mtrs

Gross Value in Million Square Mtrs. (Gross Value = Popn * Total for Piecelength)

(Popn of 1990 = 846.3 millions, 2000 = 1028.73 millions, 2006 = 1122 millions)

Population Figures from Economic Survey of India.

Table 4.4A

Per Capita and Aggregate Consumption of Household Items

Items	Actual per capita Quantity consumed (sq.meters) for Cotton Textiles			Actual per capita Quantity consumed (sq. meters) for Total Textiles		
	1990 (Q*L*W)	2000 (Q*W)	2006 (Q*W)	1990 (Q*L*W)	2000 (Q*W)	2006 (Q*W)
Chadder	0.14	0.15	0.30	0.14	0.16	0.31
Bedsheets/Bedcover	0.33	0.33	0.42	0.34	0.35	0.45
Blanket/Rajai	0.05	0.05	-	0.08	0.08	0.12
Pillow Case/Rajai Cover	-	0.04	0.03	0.25	0.04	0.04
Gaddi/Carpet Matt. Matting Satranji	-	0.02	0.04	0.04	0.02	0.04
Curtain	-	0.01	0.03	-	0.03	0.03
Pillow	-	-	0.00	-	0.00	-
Shawl	0.00	-	-	0.01	0.01	-
Towal/Tr. Towal	0.12	0.25	0.32	0.13	0.25	0.32
Napkin/tr. Napkin	-	0.00	0.01	0.00	0.00	0.01
Mosquito Net	-	0.03	0.03	0.10	0.05	0.09
Others	0.07	0.15	0.10	0.01	0.15	0.04
Total	0.71	1.03	1.26	1.09	1.13	1.43
Gross Value	605.08	1057.53	1411.48	922.19	1162.05	1607.27

Source: National household survey, textile committee various years.

Note: Q: Quantity in No's (For 1990)

Q: Quantity in Meters (For 2000 and 2006)

Q*L*W in sq.mtrs

Q*W in sq.mtrs

Gross Value in Million Square Mtrs.

(Gross Value = Popn * Total for Piecelength)

(Popn of 1990 = 846.3 millions, 2000 = 1028.73 millions, 2006 = 1122 millions)

Population Figures from Economic Survey of India.

Table 4.5A

Per Capita and Aggregate Consumption of Hosiery Goods

Items	Actual per capita Quantity consumed (sq.metres) for Cotton Textiles			Actual per capita Quantity consumed (sq. meters) for Total Textiles		
	1990 (Q* L*W)	2000 (Q*W)	2006 (Q*W)	1990 (Q*L*W)	2000 (Q*W)	2006 (Q*W)
Banian	0.33	0.88	1.17	0.34	0.89	1.18
Socks/stockings	0.00	0.01	0.01	0.01	0.01	0.02
Underwear/ Nicker	0.16	0.27	0.35	0.17	0.29	0.39
Sweater	0.01	0.01	0.02	0.16	0.14	0.33
Pullover/Jarsy	-	-	0.00	0.04	-	0.00
Muffler/Scraf	-	-	0.00	0.01	-	0.00
T-shirt	0.01	0.15	0.23	0.03	0.23	0.30
Gloves	-	-	-	-	-	-
Others	0.00	-	0.04	-	0.02	0.23
Total	0.51	1.32	1.82	0.75	1.58	2.45
Gross Value	432.39	1357.92	2042.04	630.66	1625.39	2748.90

Source: National household survey, textile committee various years.

Note: Q: Quantity in No's (For 1990)

Q: Quantity in Meters (For 2000 and 2006)

Q*L*W in sq.mtrs

Q*W in sq.mtrs

Gross Value in Million Square Mtrs.

(Gross Value = Popn * Total for Piecelength)

(Popn of 1990 = 846.3 millions, 2000 = 1028.73 millions, 2006 = 1122 millions)

Population Figures from Economic Survey of India.

Table 4.6A
Per Capita Purchase of Various Textile Items

(in square metre)

	50th Round			61st Round		
	rural	urban	India	rural	urban	India
dhoti	1.08	0.41	0.91	0.58	0.23	0.49
sari	2.70	2.52	2.65	2.91	3.03	2.93
cloth for shirt, pyjama, salwar, etc	1.74	1.86	1.77	2.28	2.53	2.34
cloth for coat, trousers, overcoat, etc.	0.48	0.79	0.56	0.76	0.99	0.82
chaddar, dupatta, shawl, etc.	0.40	0.36	0.39	0.53	0.64	0.56
lungi	1.54	1.45	1.52	1.56	1.52	1.55
gamchha, towel, handkerchief	0.14	0.15	0.14	0.30	0.46	0.34
hosiery articles, stockings, under-garments, etc	1.43	2.00	1.57	3.63	4.53	3.86
ready-made garments	2.91	3.40	3.03	3.29	4.41	3.58
Headwear	0.00	0.00	0.00	0.00	0.00	0.00
knitted garments, sweater, pullover, cardigan, muffler, scarf, etc	0.12	0.17	0.13	0.39	0.45	0.41
bed sheet, bed cover	0.26	0.47	0.31	0.66	1.16	0.79
rug, blanket	0.04	0.03	0.03	0.09	0.07	0.09
pillow, quilt, mattress	0.13	0.10	0.13	0.22	0.31	0.24
cloth for upholstery, curtain, table-cloth, etc	0.04	0.17	0.07	0.08	0.30	0.13
mosquito net	0.03	0.04	0.04	0.13	0.09	0.12
mats and matting	0.02	0.02	0.02	0.27	0.73	0.39
Fabric	13.06	13.94	13.27	17.67	21.44	18.62
population in million	653	236	889	742	318	1060
Total fabric consumption in million square metre	85256	3294	11799	13115	6815	19740

Source- consumer expenditure data, 50th and 61st round, NSSO

Table 4.7A
Per Capita Value (Expenditure) in Rupees

Items	50th round (1993-94)			61st round (2004-05)		
	rural	urban	India	rural	urban	India
dhoti	14.03	6.94	12.28	12.95	6.63	11.30
sari	49.74	78.24	56.81	87.18	135.74	99.59
cloth for shirt, pyjama, salwar, etc	65.13	76.68	67.99	87.99	119.28	95.93
cloth for coat, trousers, overcoat, etc.	25.30	57.51	33.29	50.89	90.36	60.90
chaddar, dupatta, shawl, etc.	5.68	5.70	5.68	11.92	15.82	12.93
lungi	9.26	9.53	9.33	16.37	17.23	16.50
gamchha, towel, handkerchief	6.70	8.29	7.10	18.14	28.03	20.67
hosiery articles, stockings, under-garments, etc	17.44	28.65	20.31	47.48	69.48	53.05
ready-made garments	30.77	60.10	38.17	83.22	180.32	107.94
knitted garments, sweater, pullover, cardigan, muffler, scarf, etc	5.40	8.76	6.23	18.55	28.67	21.08
bed sheet, bed cover	2.56	5.49	3.30	10.86	23.94	14.15
rug, blanket	1.44	1.11	1.36	5.25	5.62	5.36
pillow, quilt, mattress	3.52	2.22	3.20	6.29	6.83	6.43
cloth for upholstery, curtain, table-cloth, etc	0.10	0.46	0.19	0.55	2.92	1.15
mosquito net	0.24	0.36	0.27	1.25	1.08	1.21
mats and matting	0.15	0.12	0.14	0.85	1.06	0.91
Fabric	246.75	373.25	278.37	461.12	734.94	530.55

Source- consumer expenditure data, 50^{th} and 61^{st} round, NSSO.

Table 4.8A
Per capita Quantity Purchase in Square Metre - All India

Items	<10000	10000-20000	20000-30000	30000-40000	40000-50000	>50000	All
dhoti	0.50	0.44	0.44	0.45	0.39	0.78	0.49
sari	2.76	3.33	4.30	4.49	4.73	6.00	2.93
cloth for shirt, pyjama, salwar, etc.	2.13	3.09	3.41	3.43	3.56	3.81	2.34
cloth for coat, trousers, overcoat, etc.	0.72	1.12	1.31	1.43	1.36	1.46	0.82
chaddar, dupatta, shawl, etc.	0.48	0.84	0.95	0.98	1.27	1.09	0.56
Lungi	1.50	1.72	1.88	1.74	1.78	1.99	1.55
gamchha, towel, handkerchief	0.28	0.51	0.71	0.79	0.89	0.93	0.34
hosiery articles, stockings, under-garments, etc.	3.50	4.91	5.89	6.11	6.69	7.17	3.86
ready-made garments	3.22	4.47	6.02	6.76	7.80	8.57	3.58
headwear	0.00	0.00	0.01	0.00	0.00	0.00	0.00
knitted garments, sweater, pullover, cardigan, muffler, scarf, etc.	0.36	0.59	0.49	0.57	0.63	0.61	0.41
bed sheet, bed cover	0.57	1.41	2.13	2.55	2.60	2.81	0.79
rug, blanket	0.08	0.13	0.13	0.16	0.16	0.19	0.09
pillow, quilt, mattress	0.16	0.47	0.67	0.87	0.62	1.15	0.24
cloth for upholstery, curtain, table-cloth, etc.	0.05	0.27	0.75	1.00	1.68	1.87	0.13
mosquito net	0.11	0.15	0.18	0.15	0.07	0.09	0.12
mats and matting	0.45	0.13	0.16	0.20	0.17	0.29	0.39
total fabric consumption per capita	16.88	23.58	29.44	31.67	34.40	38.81	18.62
Coefficient of variation (C.V)	3.107	0.950	0.756	0.629	0.672	0.741	2.639
Growth rate of per capita fabric consumption due to shift in income group		39.67	24.85	7.57	8.64	12.81	
Fiber							
knitting wool, cotton yarn	0.01	0.02	0.02	0.02	0.01	0.01	0.01
Cotton	0.05	0.10	0.10	0.05	0.00	0.03	0.06
total fiber consumption	0.07	0.12	0.12	0.06	0.01	0.04	0.08
population (in billion)	77.7	15.8	2.8	0.9	0.4	0.5	98.2

Source: NSSO consumer expenditure data, 61st round (2004-05).

Table 4.9 A
Average Price of Various Textile Items in India

(Rs/ sq. mt)

Items	<10000	10000-20000	20000-30000	30000-40000	40000-50000	>50000	All
Dhoti	21.44	29.19	35.01	33.61	40.12	33	23.13
sari	28.71	43.35	56.1	64.94	74.21	88.22	33.96
cloth for shirt, pyjama, salwar, etc.	37.28	46.9	55.88	61.63	61.85	72.54	41.03
cloth for coat, trousers, overcoat, etc.	65.07	89.83	108.94	123.21	127.41	145.71	74.52
chaddar, dupatta, shawl, etc.	21.33	24.68	30.13	33.31	35.09	36.21	23.09
lungi	10.32	11.55	12.34	13.18	13.88	13.7	10.64
gamchha, towel, handkerchief	60.91	59.89	61.15	69.19	65.85	77.03	61.23
hosiery articles, stockings, under-garments, etc.	12.91	15.33	17.28	18.9	19.01	20.39	13.76
ready-made garments	23.98	38.4	54.51	61.44	76.53	81.97	30.17
Headwear	469.08	740.3	841.17	877.21	1882.05	868.26	562.59
knitted garments, sweater, pullover, cardigan, muffler, scarf, etc	41.62	60.15	117.61	131	156.89	185.77	51.69
bed sheet, bed cover	15.3	19.28	23.92	25.75	32.34	32.69	17.94
rug, blanket	53.5	69.65	91.67	113.95	89.07	123.4	60.99
pillow, quilt, mattress	27.96	25.01	25.66	21.74	23.2	35.83	26.85
cloth for upholstery, curtain, table-cloth, etc.	6.29	7.95	9.07	9.56	14.7	15.88	8.59
mosquito net	9.49	12.24	12.06	15.95	12.68	15.53	10.35
mats and matting	1.5	12.61	11.8	11.52	12.78	16.98	2.35
fabric price per square metre	24.71	34.43	43.08	48.24	53.95	60.23	28.48
Fiber							
cotton	11.792	12.132	12.181	12.764	16.224	11.714	11.884
knitting wool, cotton yarn	62.83	71.24	88.67	95.76	121.28	77.55	66.15
fiber price per square metre	21.5	22.23	23.11	32.81	97.16	24.19	21.86

Source: NSSO consumer expenditure data, 61st round (2004-05).

Table 4.10A

Average Price of Various Textile Items in Urban India

(Rs/ sq. mt)

Items	<10000	10000-20000	20000-30000	30000-40000	40000-50000	>50000	All
Dhoti	24.75	29.92	39.53	38.28	47.48	48.62	29.18
sari	32.82	46.73	59.16	68.52	77.03	97.87	44.87
cloth for shirt, pyjama, salwar, etc.	39.72	49.50	58.03	63.97	70.02	81.38	47.18
cloth for coat, trousers, overcoat, etc.	73.66	96.36	116.48	129.46	147.08	156.57	91.46
chaddar, dupatta, shawl, etc.	19.90	25.33	31.43	35.38	39.97	40.49	24.73
lungi	10.61	11.60	12.52	13.12	13.78	14.37	11.32
gamchha, towel, handkerchief	58.61	58.68	61.47	71.77	70.52	78.40	60.57
hosiery articles, stockings, under-garments, etc.	13.77	15.62	17.67	19.62	19.95	20.99	15.35
ready-made garments	28.82	39.97	56.88	65.07	86.23	85.21	40.88
Headwear	294.13	502.50	762.97	912.31	2305.72	752.88	459.02
knitted garments, sweater, pullover, cardigan, muffler, scarf, etc	37.41	67.41	121.18	143.53	152.18	183.73	63.59
bed sheet, bed cover	15.66	19.72	24.36	26.42	35.02	34.89	20.55
rug, blanket	56.20	72.53	105.59	122.02	103.21	144.60	75.43
pillow, quilt, mattress	24.09	20.76	19.32	19.17	25.51	39.75	22.30
cloth for upholstery, curtain, table-cloth, etc.	6.24	8.03	8.75	9.48	14.61	16.51	9.69
mosquito net	10.75	13.61	10.96	18.10	12.85	16.34	12.32
mats and matting	0.52	11.95	11.96	11.94	12.87	17.19	1.47
fabric price per square	26.03	35.74	44.89	50.78	58.12	64.60	34.22
cotton	11.216	12.108	12.569	16.405	16.359	18.852	11.867
knitting wool, cotton yarn	60.55	75.52	88.94	100.35	121.69	77.53	70.79
fiber price per square metre	25.62	29.23	36.59	46.44	97.54	49.70	28.98

Source: Consumer expenditure survey, 61st round, NSSO (2004-05)

Table 4.11A
Income Group-wise Expenditure Elasticity –All India

Items	<10000	10000-20000	20000-30000	30000-40000	40000-50000	>50000	All
Dhoti	0.47	0.41	1.03	0.31	4.35	0.12	0.49
sari	0.58	0.84	0.50	0.91	2.97	0.38	0.70
cloth for shirt, pyjama, salwar, etc.	0.13	0.54	0.50	0.02	0.67	0.05	0.42
cloth for coat, trousers, overcoat, etc.	-0.24	0.76	0.48	-0.57	-0.86	-0.04	0.40
chaddar, dupatta, shawl, etc.	0.61	0.57	0.34	1.13	-0.82	0.06	0.59
lungi	0.27	0.39	0.18	0.75	-1.12	-0.15	0.34
gamchha, towel, handkerchief	-0.33	0.71	0.41	-0.29	0.67	-0.02	0.29
hosiery articles, stockings, under-garments, etc.	-0.06	0.54	0.23	0.53	0.82	0.01	0.32
ready-made garments	-1.43	1.02	0.93	0.42	0.35	-0.09	0.24
knitted garments, sweater, pullover, cardigan, muffler, scarf, etc	0.64	0.81	0.64	1.48	4.20	-0.01	0.77
bed sheet, bed cover	-0.57	0.73	0.62	0.54	2.62	-0.05	0.43
rug, blanket	-2.93	0.67	0.22	0.12	-5.24	0.13	-0.55
pillow, quilt, mattress	0.46	0.68	1.13	2.49	-2.33	0.47	0.45
cloth for upholstery, curtain, table-cloth, etc.	0.26	1.58	1.47	2.30	0.57	0.75	0.90
mosquito net	0.58	0.58	-0.21	-0.97	-2.53	-0.82	0.59
mats and matting	0.19	0.85	0.12	-1.66	0.99	-0.03	0.56
fabric	0.05	0.75	0.59	0.50	1.02	0.22	0.51

Source: NSSO consumer expenditure data, 61st round (2004-05).

Table 5.1A
Export of Fibre From India to Rest of World in Quantity Term

(Quantity Mn. Kg.)

HS code	Type of Fibre	1990-91	2000-01	2004-05	2007-08	2008-09
	Silk fibre					
5001	Silk-worm cocoons suitable for reeling	-	0.01	0.02	0.01	0.01
5002	Raw silk (not thrown)	0.00	0.05	0.08	0.14	0.08
5003	Slk wste (incld cocoons nt sutble fr relngyarn wste & garnte stock)	0.23	1.88	0.09	0.76	0.23
	Total	0.23	1.93	0.19	0.91	0.32
	Compound annual growth rate		23.70	-43.99	68.56	-64.84
	Wool fibre					
5101	Wool not carded or combed	0.00	0.18	0.22	0.06	0.06
5102	Fine/coarse anml hair nt crded/combed	2.48	0.35	0.38	0.28	0.17
5103	Waste of wool/of fine/coarse animal hair incl yarn waste excl garnetted stock	-	0.20	0.13	0.06	0.17
5104	Grntd stock of wool/fine/coarse anml hair	0.05	0.08	0.17	0.04	0.05
5105	Wool & fine/coarse anml hair crded or cmbd(incl combed wool in fragments)	0.03	0.85	2.43	3.85	3.77
	Total	2.57	1.66	3.32	4.29	4.23
	Compound annual growth rate		-4.28	18.92	8.92	-1.40
	Cotton fibre					
5201	Cotton, not carded or combed	218.255	12.71	76.74	1531.98	503.03
5202	Coton wast(incl yarn wast & grnted stock)	31.657	5.84	6.79	23.93	23.19
5203	Cotton carded or combed	0.147	11.63	3.11	1.68	1.30
	Total	250.06	30.19	86.64	1557.59	527.52
	Compound annual growth rate		-19.06	30.16	161.97	-66.13
	Man made filament fibre					
5501	Synthetic Filament Tow	0.227	0.87	7.70	1.52	0.87
5502	Artificial Filament Tow	0.011	0.33	0.56	0.36	0.30
5503	Synthetic Staple Fibres,not Carded, Combed/Otherwise Processed For Spinning	23.87	27.92	55.51	145.88	147.01
5504	Artificial Staple Fibres not Carded,Combed/Otherwise Processed For Spinning	0.55	2.70	7.38	26.68	29.83
5505	Waste(Incl Noils Yrn Waste & Garnettedstock) of Man-Made Fibres	0.598	2.10	3.45	14.17	17.93
5506	Synthetic Staple Fibres Carded Combed/otherwise Processed For Spinning	0.269	2.36	2.37	1.74	4.63
5507	Artificial Staple Fibres,Carded,Combed/Otherwise Processed For Spinning	0.265	0.01	0.10	0.18	0.64
	Total	25.79	36.28	77.07	190.53	201.21
	Compound annual growth rate		3.47	20.73	35.22	5.61
	Grand total	278.65	70.06	167.21	1753.32	733.27
	Compound annual growth rate		-12.90	24.29	118.88	-58.18

Source: DGCI &S, India trade of CMIE

Table 5.2A
Export of Yarn from India to Rest of World in Quantity Term

(Quantity Mn. Kg.)

HS code	Type of yarn	1990-91	2000-01	2004-05	2007-08	2008-09
	Silk yarn					
5004	Slk yarns(othr thn yrn spun from slk wste)nt put up for retail sale		0.04	0.03	0.05	0.02
5005	Yarn spun from silk waste, not put for retail sale		0.04	0.10	0.23	0.12
5006	Silk yarn and yarn spun from silk waste, put up for retail sale; silk-worm gut.		0.03	0.28	0.51	0.03
	Total		0.12	0.41	0.79	0.17
	% growth rate			35.96	24.44	-78.48
	Wool yarn					
5106	Yrn of crded wool nt put up fr retail sale		0.44	0.47	1.16	0.91
5107	Yarn of combed wool, not put for retail sale.		3.15	2.38	3.17	3.04
5108	Yarn of fine animal hair(carded/combed) not put up for retail sale		0.07	1.14	1.11	0.93
5109	Yarn of wool or of fine animal hair,put up for retail sale		0.06	0.22	0.16	0.07
5110	Yrn of coarse anml hair/of hors hair(incl gmpd horshair yarn)w/n put up fr retl sale		0.00	0.03	0.00	0.01
	Total		3.72	4.24	5.60	4.95
	% growth rate			3.33	9.72	-11.61
	Cotton yarn					
5204	Coton sewng thred w/n put up for retl sale	0.738	7.80	8.64	5.59	2.38
5205	Cotn yrn(othr thn swng thrd)cntng 85% ormore by wt of coton nt put up fr retl sale	53.584	343.72	267.15	581.32	611.34
5206	Coton yrn(othr thn sewng thrd)contngcoton <85% by wt nt put for retail sale	0.76	0.71	3.46	4.86	7.29
5207	Cotton yarn(other than sewing thread) put up for retail sale	28.706	161.07	169.19	72.38	31.45
	Total	83.788	513.30	448.43	664.14	652.45
	% growth rate		19.87	-3.32	13.99	-1.76
	Man made filament yarn					
5401	Sewing thread of man-made filaments, whether or not put up for retail sale		0.99	1.02	2.52	2.96

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Table 5.2A
Export of Yarn from India to Rest of World in Quantity Term

(Quantity Mn. Kg.)

5402	Synthtc filamnt yrn(othr thn sewng thrd)not put up for retail sale incl synthetic monofilament of less than 67 decitex		105.10	115.28	245.54	264.15
5403	Artificial filament yarn(excl sewingthread),not put up for retail sale,incl artificial monofilament of < 67 decitex		21.51	20.16	23.01	13.02
5404	Synthtc monflmnt of>=67 dctx & of crss- sctnl dimnsn<=1mm;strp etc(e.g.artfcl strw)of synthtc txtl mtrls of wdth<=5mm		0.27	0.87	1.23	1.60
5405	Artificial monofilament of 67 decitex or more and of which no cross-sectional dimension exceeds 1 mm; strip and the like (for example, artificial straw) of artificial textile materials of an apparent UNIT		0.48	0.10	0.05	0.05
5406	Man-made filament yarn(other than sweingthread),put up for retail sale		0.58	0.49	0.79	1.02
	Total		128.93	137.92	273.15	282.81
	% growth rate			1.70	25.58	3.54
	Man made staple yarn					
5508	Sewing Thread of Man-Made Staple Fibres,W/N Put Up For Retail Sale		0.85	1.04	1.34	1.56
5509	Yarn(oth Thn Swng Thread)of Synthtc staple Fibres,Not Put Up For Retail Sale		76.14	108.44	147.55	151.85
5510	Yarn(oth Thn Swng Thread)of Artfcl Staple Fibres not Put Up Fr Rtl Sale		31.65	42.53	49.40	45.85
5511	Yarn(oth Thn Swng Thread)of Man-Made Staple Fibres Put Up For Rtl Sale		0.68	0.93	1.83	1.03
	Total		109.32	152.94	200.12	200.29
	% growth rate			8.76	9.38	0.08
	Grand total		755.40	743.93	1143.80	1140.67
	% growth rate			-0.38	15.42	-0.27

Source: DGCI &S, India trade of CMIE

Table 5.3A
Export of fabric from India to rest of world in Quantity Term

(Quantity: Million sq. mts.)

HS code	Type of fabric	2000-01	2004-05	2007-08	2008-09
	Silk fabric				
5007	Woven fabrics of silk or silk waste	5.39	43.01	34.11	27.86
	% growth rate		68.07	-7.44	-18.32
	Wool fabric				
5111	woven fabrics of carded wool or of carded fine animal hair	0.14	1.18	1.98	2.93
5112	wovn fbrcs of cmbd wool/fine anml hair	1.67	2.53	3.40	4.54
5113	wovn fbrcs of corse anml hair/of hors hair	0.01	0.04	0.02	0.04
	Total	1.82	3.75	5.40	7.51
	% growth rate		19.81	12.92	39.07
	Cotton fabric				
5208	wovn fbrcs of coton contng>=85% by wt of coton weghng nt more thn 200 g/m2	115.72	338.56	426.17	479.30
5209	wovn fbrcs of cotton, contng >=85% cotn by wt weighing>200 gm per sqm	95.25	175.66	156.36	150.52
5210	wovn fbrcs contng<85% coton,mxd mainly or solely wth manmade fbrs weghng<=200g/m2	18.47	53.07	10.02	12.60
5211	wovn fbrcs of coton,contng<85% cotton,mxd mainly wth mnmd fbrs weighing>200 g/m2	9.49	51.32	16.99	13.29
5212	other woven fabrics of cotton	5.09	35.66	48.88	40.04
	Total	244.03	654.27	658.42	695.76
	% growth rate		27.96	0.21	5.67
	Man made filament fabric				
5407	wovn fbrcs of synthtc filament yarn incl wovn fbrcs obtnd from mtrls of hdg no.5404	37.81	476.93	477.03	597.18
5408	woven fabrics of artfcs filament yarn,inclfbrcs obtnd from materials of hdg no.5405	2.22	21.44	20.08	22.54
	Total	40.04	498.36	497.11	619.72
	% growth rate		87.83	-0.08	24.66
	Man made staple fabric				
5512	woven fbrcs of synthtc staple fibres cntng85% or more by wt of synthtc staple fibres	6.71	34.55	124.16	172.61
5513	woven fbrcs of synthtc staple fibres cntngless thn 85% by wt of such fibres,mxd mnlyor solely wth cotton of wt<=170 g/m2	9.34	36.13	13.06	13.94

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Table 5.3A

Export of fabric from India to rest of world in Quantity Term

(Quantity: Million sq. mts.)

5514	wvn fbrcs of synthtc stpl fbrs cntng< 85% by wt of such fbrs mxd mainly/solely with cotton of a wt excdg 170 g/m2	4.29	8.03	8.39	4.67
5515	othr wvn fbrcs of synthtc stpl fbrs	16.34	113.60	154.04	160.60
5516	woven fabrics of artificial stpl fbrs	2.01	10.48	11.63	9.06
	Total (staple)	38.69	202.78	311.29	360.88
	% growth rate		51.31	15.36	15.93
	Total (staple + filament)	78.73	701.14	808.39	980.60
	% growth rate		72.75	4.86	21.30
	knitted or crocheted fabric				
6001	pile fabrics including"long pile" fabrics and terry fabrics,knitted/crochetted	3.27	5.85	8.78	7.98
6002	knitd or crocheted fbrcs of width <30 cm ,contng elastomeric yarn/rubr>=5% by wt , excpt hdg no 6001	5.81	2.02	1.21	1.09
6003	knitd or crocheted fbrcs of a width<30cm, excpt hdg no 6001 or 6002	-	1.27	2.32	0.81
6004	knitd or crocheted fbrcs of width.30cm , contng elastomeric yarn/rubr>=5% by wt, excpt hdgno. 6001	-	0.02	0.41	0.99
6005	warp knit fbrcs(incl those made on gallon knitd machn), excpt hdg no. 6001 to 6004	-	0.67	1.70	0.97
6006	othr knitted or crochetedbfabrics	-	0.34	8.01	19.15
	Total	9.08	10.17	22.42	30.99
	% growth rate		2.87	30.15	38.22
	Grand total	339.05	1412.34	1528.75	1742.72
	% growth rate		42.86	2.68	14.00

Source: DGCI &S, India trade of CMIE

Table 5.4A
Export of Articles, apparel and clothing accessories Knitted and crocheted in Quantity Term

Quantity: (million pieces)		2000-01	2004-05	2007-08	2008-09
6101	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, knitted or crocheted, other than those of heading no. 61.03	7.55	11.01	1.78	1.45
6102	Women's/girls' overcoats, carcoats etc (incl ski-jackts), wind-cheaters etc., knitd/crchtd,excpt those of hdg 6104	1.85	2.63	0.75	0.80
6103	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted.	20.06	37.36	41.54	50.65
6104	Women's/girls'suits,ensembles,jackets dresses,skrts & divided skrts,trousers, bib,brace overalls etc,knttd/crocheted	95.24	41.99	67.21	71.93
6105	Men's/boys'shirts,knitted/crocheted	90.15	93.05	96.36	94.53
6106	Women'/girls' blouses,shirts &shirts-blouses,knitted or crocheted	37.42	68.62	98.31	105.31
6107	Men's or boys' underpants, briefs, nightshirts, pyjamas, bathrobes, dressing gowns and similar articles, knitted or crocheted	57.17	115.75	139.16	147.97
6108	Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas, negliges, bathrobes, dressing gowns and similar articles, knitted or crocheted	46.17	102.18	114.39	124.99
6109	T-shirts, singlets & other vests, knitted or crocheted	147.71	263.51	464.35	465.43
6110	Jerseys,pullovers,cardigans,waistcoats &similar articls,knttd/crchtd	31.97	32.37	42.98	45.98
6112	Track suits, ski suits and swimwear, knitted or crocheted	0.80	2.81	1.24	1.25
6116	Gloves,mittens & mitts,knitted/crocheted	20.38	10.69	6.09	9.97
	Total (Number)	556.47	781.98	1074.17	1120.26
	% growth rate		8.88	11.16	4.29
Quantity: (million kg)					
6111	Babies' garments & clothing accessories, knitted or crocheted	7.56	19.33	33.83	37.16
6113	GRMNTS,MADE UP OF KNTTD/CRCHTD FABRICS OF HDNG NO. 5903 5906 OR 5907	0.04	0.51	0.09	0.27

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Table 5.4A
Export of Articles, apparel and clothing accessories Knitted and crocheted in Quantity Term

6114	Other garments,knitted/crocheted	1.19	3.29	12.42	20.18
6115	Panty hose, tights, stockings, socks and other hosiery, including stockings for varicose veins and footwear without applied soles, knitted or crocheted.	2.32	25.74	34.26	33.83
6117	Othr made up clothng accssrs,kntd/crchtd; kntd/crchtd prts of grmnts/clothng acssrs	6.39	11.02	5.19	6.64
	Total	17.50	59.89	85.79	98.07
	% growth rate		36.01	12.73	14.31
Source: DGCI &S, India trade of CMIE					

Table 5.5A
Export of Articles, apparel and clothing accessories not Knitted and crocheted in Quantity Term

Quantity: (million pieces)		2000-01	2004-05	2007-08	2008-09
6201	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading No. 62.03.	75.89	11.71	4.32	3.41
6202	Women's/girl's overcoats,carcoats, capes, cloaks, anoraks (incl ski-jackets), wind-chtrs wind-jackets & similar articles excl hdg 6204	3.19	4.12	1.54	2.69
6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib & brace overalls breeches & shorts (other than swimwear)	59.23	60.25	96.28	100.39
6204	Women's/girls' suits,ensembles,jackets, dresses,skirts,trousers,bib & brace ovrals,brechs & shorts etc(excpt swimwear)	185.29	159.32	232.64	240.04
6205	Men's or boy's shirts	232.89	136.90	122.61	112.60
6206	Women/girls' blouses,shirts & shirt-blouses	188.90	209.79	207.88	318.11
6207	Men's or boys' singlets and other vests underpants,briefs,night-shirts,pyjamas, bathrobes,dressing gowns & similar artcls	17.27	17.79	8.64	9.78
6208	Women's or girls' singlets & other vests, slips,peticots,brfs,panties,nightdresses, pyjms,negliges,bathrobs,etc.& smlr artcls	23.43	26.32	24.16	24.26
6209	Babies' garments and clothing accessories	7.26	20.45	31.40	22.70
6210	Garments,made up of fabrics of heading no.5602,5603,5903,5906 or 5907	2.32	4.03	0.96	0.95
6211	Track suits, ski suits and swimwear; other garments.	71.64	13.14	21.85	26.15
6212	Brassieres, girdles, corsets, braces, suspenders, garters and similar articles and parts thereof, whether or not knitted or crocheted.	0.46	3.79	12.28	9.63
6213	Handkerchiefs	0.34	6.16	6.46	7.59
6214	Shawls, scarves, mufflers, mantillas, veils and the like.	100.86	111.19	150.89	202.05
6215	Ties,bow ties and cravats	0.18	0.71	0.87	2.86
6216	Gloves,mittens and mitts	0.54	4.21	8.41	10.43
	Total (Number)	969.69	789.89	931.19	1093.66
	% growth rate		-5.00	5.64	17.45

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Table 5.5A

Export of Articles, apparel and clothing accessories not Knitted and crocheted in Quantity Term

Quantity: (million kg)					
6217	Other made up clothing accessories, parts of garments or of clothing accessories, excl of hdg 6212	3.62	1.96	2.76	4.15
	Total	3.62	1.96	2.76	4.15
	% growth rate		-14.22	12.09	50.36
Source: DGCI &S, India trade of CMIE					

Table 5.6A

Export of Other made up textile articles, worn cloth and worn textile articles in Quantity Term

Quantity: (million kg)		2000-01	2004-05	2007-08	2008-09
6302	Bed linen, table linen, toilet linen and kitchen linen	10.08	42.73	89.50	227.06
6303	Curtains(including drapes) & interior blinds;curtain or bed valances	9.92	10.47	20.39	21.99
6304	Othr frnshng artcls excl of hdg no. 9404	114.32	463.36	452.21	469.79
6305	Sacks and bags , of a kind used for packing of goods	55.57	147.89	86.25	152.48
6306	Tarpaulins,sails for boats,sailboards orlndcrft,awnngs,sunblnds,tnts & cmpng goods	4.35	4.07	3.19	2.89
6307	Other made up articles incl dress patterns	55.47	89.73	133.41	75.78
6308	Sets consstng of wovn fbrcs & yrn,w/n wth accssrs,fr mkng rugs,tpstrs,embrdrd table cloth & like in pckngs fr rtl sale	0.09	0.10	0.18	0.12
6309	Worn clothing and other worn articles	0.89	0.21	0.21	0.07
6310	Usd/new rags,scrp twne,cordge,rope &cbls & worn out artcls of twne,cordge,rope/cbls,of textile materials	0.55	3.50	0.75	0.81
	Total	251.24	762.07	786.10	951.00
	% growth rate		31.97	1.04	20.98
Quantity: (million piece)					
6301	Blankets and travelling rugs	8.39	16.02	13.62	16.39
	Total	8.39	16.02	13.62	16.39
	% growth rate		17.55	-5.27	20.34
Source: DGCI &S, India trade of CMIE					

Table 5.7A
Import of fibre from World to India in Quantity Term

(Quantity: million kg)

HS code	Type of fibre	2000-01	2004-05	2007-08	2008-09
	Silk fibre				
5001	silk-worm cocoons suitable for reeling	0.01	0.00	0.01	0.01
5002	raw silk (not thrown)	4.71	8.35	7.92	8.79
5003	slk wste (incld cocoons nt sutble fr relngyarn wste & garnte stock)	0.00	0.20	0.18	0.18
	Total	4.72	8.55	8.11	8.97
	% growth rate		16.01	-1.75	10.60
	Wool fibre				
5101	wool not carded or combed	53.76	84.75	93.08	81.72
5102	fine/coarse anml hair nt crded/combed	0.56	0.34	0.12	0.09
5103	waste of wool/of fine/coarse animal hair incl yarn waste excl garnetted stock	5.40	7.43	2.46	1.57
5104	grntd stock of wool/fine/coarse anml hair		0.00	0.01	0.00
5105	wool & fine/coarse anml hair crded or cmbd(incl combed wool in fragments)	0.19	0.44	0.50	1.17
	Total	59.92	92.98	96.18	84.54
	% growth rate		11.61	1.13	-12.10
	Cotton fibre				
5201	cotton, not carded or combed	210.59	176.27	112.40	152.25
5202	coton wast(incl yarn wast & grnted stock)	1.54	15.79	23.87	15.04
5203	cotton carded or combed	0.23	0.12	0.22	0.42
	Total	212.36	192.18	136.49	167.71
	% growth rate		-2.47	-10.78	22.87
	Man made filament fibre				
5501	Synthetic Filament Tow	9.33	10.01	6.36	8.26
5502	Artificial Filament Tow	3.36	5.10	6.22	9.28
5503	Synthetic Staple Fibres,not Carded, Combed/Otherwise Processed For Spinning	27.59	19.54	21.62	27.17
5504	Artificial Staple Fibres not Carded,Combed/Otherwise Processed For Spinning	1.69	1.58	8.89	14.30
5505	Waste(Incl Noils Yrn Waste & Garnettedstock) of Man-Made Fibres	10.35	22.69	15.52	17.64
5506	Synthetic Staple Fibres Carded Combed/otherwise Processed For Spinning	0.68	3.46	0.37	1.34
5507	Artificial Staple Fibres,Carded,Combed/Otherwise Processed For Spinning	0.04	0.02	0.05	0.05
	Total	53.04	62.41	59.04	78.03
	% growth rate		4.15	-1.83	32.16
	Grand total	330.05	356.11	299.81	339.26
	% growth rate		1.92	-5.57	13.16

Source: DGCI &S, India trade of CMIE

Table 5.8A
Import of yarn from World to India in Quantity Term

(Quantity: million kg)

HS code	Type of yarn	2000-01	2004-05	2007-08	2008-09
	Silk yarn				
5004	Slk yarns(othr thn yrn spun from slk wste)nt put up for retail sale	0.85	2.18	1.09	0.87
5005	Yarn spun from silk waste, not put for retail sale	0.42	0.31	0.31	0.24
5006	Silk yarn and yarn spun from silk waste, put up for retail sale; silk-worm gut.	0.04	0.27	0.22	0.14
	Total	1.30	2.75	1.62	1.26
	% growth rate		20.60	-16.17	-22.22
	Wool yarn				
5106	Yrn of crded wool nt put up fr retail sale	0.02	0.11	0.26	0.09
5107	Yarn of combed wool, not put for retail sale.	0.17	0.06	0.19	0.13
5108	Yarn of fine animal hair(carded/combed) not put up for retail sale	0.00	0.02	0.01	0.01
5109	Yarn of wool or of fine animal hair,put up for retail sale	0.05	0.00	0.21	0.06
5110	Yrn of coarse anml hair/of hors hair(incl gmpd horshair yarn)w/n put up fr retl sale	0.03	0.00	0.00	0.00
	Total	0.28	0.19	0.66	0.29
	% growth rate		-9.24	51.45	-56.06
	Cotton yarn				
5204	Coton sewng thred w/n put up for retl sale	0.04	0.12	0.17	0.21
5205	Cotn yrn(othr thn swng thrd)cntng 85% ormore by wt of coton nt put up fr retl sale	2.12	2.81	4.68	4.55
5206	Coton yrn(othr thn sewng thrd)contngcoton <85% by wt nt put for retail sale	0.00	0.09	2.11	0.25
5207	Cotton yarn(other than sewing thread) put up for retail sale	0.12	0.10	0.18	0.06
	Total	2.29	3.12	7.14	5.07
	% growth rate		8.04	31.78	-28.99
	Man made filament yarn				
5401	Sewing thread of man-made filaments, whether or not put up for retail sale	0.61	0.66	2.08	3.81

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Table 5.8A
Import of yarn from World to India in Quantity Term
(Quantity: million kg)

5402	Synthtc filamnt yrn(othr thn sewng thrd)not put up for retail sale incl synthetic monofilament of less than 67 decitex	90.02	164.28	139.71	149.95
5403	Artificial filament yarn(excl sewingthread),not put up for retail sale,incl artificial monofilament of < 67 decitex	1.37	7.41	7.99	12.75
5404	Synthtc monflmnt of>=67 dctx & of crss- sctnl dimnsn<=1mm;strp etc(e.g.artfcl strw)of synthtc txtl mtrls of wdth<=5mm	1.01	1.59	3.62	5.34
5405	Artificial monofilament of 67 decitex or more and of which no cross-sectional dimension exceeds 1 mm; strip and the like (for example, artificial straw) of artificial textile materials of an apparent UNIT	0.00	0.01	0.00	0.00
5406	Man-made filament yarn(other than sweingthread),put up for retail sale	0.04	0.36	0.32	0.76
	Total	93.06	174.32	153.73	172.62
	% growth rate		16.99	-4.10	12.29
	Man made staple yarn				
5508	Sewing Thread of Man-Made Staple Fibres,W/N Put Up For Retail Sale	0.11	0.17	0.56	0.71
5509	Yarn(oth Thn Swng Thread)of Synthtc staple Fibres,Not Put Up For Retail Sale	3.90	16.77	39.59	43.13
5510	Yarn(oth Thn Swng Thread)of Artfcl Staple Fibres not Put Up Fr Rtl Sale	0.04	1.82	1.93	1.81
5511	Yarn(oth Thn Swng Thread)of Man-Made Staple Fibres Put Up For Rtl Sale	0.03	0.08	0.04	0.01
	Total	4.08	18.84	42.11	45.66
	% growth rate		46.59	30.75	8.43
	Grand total	101.00	199.22	205.26	224.89
	% growth rate		18.51	1.00	9.56

Source: DGCI &S, India trade of CMIE

Table 5.9A
Import of fabric from World to India in Quantity Term

(Quantity: Million sq. mts.)

HS code	Type of fabric	2000-01	2004-05	2007-08	2008-09
	Silk fabric				
5007	Woven fabrics of silk or silk waste	0.38	52.25	65.15	66.13
	% growth rate		242.43	7.63	1.50
	Wool fabric				
5111	woven fabrics of carded wool or of carded fine animal hair	0.02	3.50	4.89	5.24
5112	wovn fbrcs of cmbd wool/fine anml hair	0.13	1.78	1.24	0.62
5113	wovn fbrcs of corse anml hair/of hors hair	0.00	0.01	0.02	0.00
	Total	0.15	5.29	6.15	5.87
	% growth rate		143.69	5.15	-4.55
	Cotton fabric				
5208	wovn fbrcs of coton contng>=85% by wt of coton weghng nt more thn 200 g/m2	3.17	51.49	97.36	84.99
5209	wovn fbrcs of cotton, contng >=85% cotn by wt weighing>200 gm per sqm	1.22	19.74	65.08	53.25
5210	wovn fbrcs contng<85% coton,mxd mainly or solely wth manmade fbrs weghng<=200g/m2	0.78	5.61	18.77	19.43
5211	wovn fbrcs of coton,contng<85% cotton,mxd mainly wth mnmd fbrs weighing>200 g/m2	0.21	4.64	2.88	2.28
5212	other woven fabrics of cotton	0.10	1.42	5.09	2.93
	Total	5.48	82.90	189.18	162.88
	% growth rate		97.22	31.66	-13.90
	Man made filament fabric				
5407	wovn fbrcs of synthtc filament yarn incl wovn fbrcs obtnd from mtrls of hdg no.5404	13.46	85.86	132.67	112.37
5408	woven fabrics of artfcs filament yarn,inclfbrcs obtnd from materials of hdg no.5405	0.40	2.05	4.13	2.99
	Total	13.86	87.91	136.80	115.36
	% growth rate		58.70	15.88	-15.67
	Man made staple fabric				
5512	woven fbrcs of synthtc staple fibres cntng85% or more by wt of synthtc staple fibres	0.59	6.23	13.42	13.17
5513	woven fbrcs of synthtc staple fibres cntngless thn 85% by wt of such fibres,mxd mnlyor solely wth cotton of wt<=170 g/m2	1.76	5.73	9.92	7.60

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Table 5.9A
Import of fabric from World to India in Quantity Term

(Quantity: Million sq. mts.)

5514	wvn fbrcs of synthtc stpl fbrs cntng< 85% by wt of such fbrs mxd mainly/solely with cotton of a wt excdg 170 g/m2	0.42	1.09	1.24	2.00
5515	othr wvn fbrcs of synthtc stpl fbrs	1.31	8.37	10.61	12.60
5516	woven fabrics of artificial stpl fbrs	0.17	3.22	2.75	2.01
	Total (staple)	4.25	24.63	37.95	37.38
	% growth rate		55.16	15.50	-1.50
	Total (staple + filament)	18.11	112.54	174.75	152.74
	% growth rate		57.89	15.80	-12.60
	knitted or crocheted fabric				
6001	pile fabrics including"long pile" fabrics and terry fabrics,knitted/crochetted	9.51	9.91	6.35	7.11
6002	knitd or crocheted fbrcs of width <30 cm ,contng elastomeric yarn/rubr>=5% by wt , excpt hdg no 6001	6.69	1.46	0.89	1.57
6003	knitd or crocheted fbrcs of a width<30cm, excpt hdg no 6001 or 6002	-	0.48	0.66	0.46
6004	knitd or crocheted fbrcs of width.30cm , contng elastomeric yarn/rubr>=5% by wt, excpt hdgno. 6001	-	0.21	1.13	1.46
6005	warp knit fbrcs(incl those made on gallon knitd machn), excpt hdg no. 6001 to 6004	-	4.39	18.56	69.80
6006	othr knitted or crochetedbfabrics	-	3.23	17.79	15.32
	Total	16.20	19.68	45.37	95.73
	% growth rate		4.99	32.10	111.00
	Grand Total	40.32	272.65	480.60	483.35
	% growth rate		61.26	20.80	0.57

Source: DGCI &S, India trade of CMIE

Table 5.10A
Import of Articles, apparel and clothing accessories Knitted and crocheted from World to India in Quantity Term

(Quantity: million pieces)		2000-01	2004-05	2007-08	2008-09
HS code	Type of garment				
6101	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, knitted or crocheted, other than those of heading no. 61.03	0.04	0.05	0.03	0.23
6102	Women's/girls' overcoats, carcoats etc (incl ski-jackts), wind-cheaters etc., knitd/crchtd,excpt those of hdg 6104	0.02	0.006	0.03	0.06
6103	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted.	0.14	0.11	0.21	0.25
6104	Women's/girls'suits,ensembles,jackets dresses,skrts & divided skrts,trousers, bib,brace overalls etc,knttd/crocheted	0.050	0.06	0.23	0.19
6105	Men's/boys'shirts,knitted/crocheted	0.08	0.13	0.19	0.28
6106	Women'/girls' blouses,shirts &shirts-blouses,knitted or crocheted	0.25	0.09	0.59	0.57
6107	Men's or boys' underpants, briefs, nightshirts, pyjamas, bathrobes, dressing gowns and similar articles, knitted or crocheted	0.03	0.06	0.49	1.77
6108	Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas, negliges, bathrobes, dressing gowns and similar articles, knitted or crocheted	0.27	0.19	0.69	0.54
6109	T-shirts, singlets & other vests, knitted or crocheted	0.13	0.43	1.34	1.57
6110	Jerseys,pullovers,cardigans,waistcoats &similar articls,knttd/crchtd	0.08	0.11	0.40	0.39
6112	Track suits, ski suits and swimwear, knitted or crocheted	0.28	0.32	0.16	0.24
6116	Gloves,mittens & mitts,knitted/crocheted	0.05	0.30	1.79	5.09
	Total	1.05	1.88	6.17	11.21
	% growth rate		15.68	48.61	81.69
(Quantity: million kg)					
6111	Babies' garments & clothing accessories, knitted or crocheted	0.03	0.08	0.46	0.54
6113	grmnts,made up of knttd/crchtd fabrics of hdng no. 5903 5906 or 5907	0.002	0.001	0.01	0.001

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Table 5.10A

Import of Articles, apparel and clothing accessories Knitted and crocheted from World to India in Quantity Term

6114	Other garments,knitted/crocheted	0.09	0.03	0.04	0.07
6115	Panty hose, tights, stockings, socks and other hosiery, including stockings for varicose veins and footwear without applied soles, knitted or crocheted.	0.10	0.80	2.61	4.94
6117	Othr made up clothng accssrs,kntd/crchtd; kntd/crchtd prts of grmnts/clothng acssrs	0.08	0.37	1.28	1.36
	Total	0.29	1.27	4.39	6.91
	% growth rate		44.66	51.20	57.40

Source: DGCI &S, India trade of CMIE

Table 5.11A

Import of Articles of apparel and clothing accessories not Knitted and crocheted from World to India in quantity term

(Quantity: million pieces)		2000-01	2004-05	2007-08	2008-09
6201	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading No. 62.03.	0.01	0.07	0.07	0.20
6202	Women's/girl's overcoats,carcoats, capes, cloaks, anoraks (incl ski-jackets), wind-chtrs wind-jackets & similar articles excl hdg 6204	0.05	0.01	0.05	0.11
6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib & brace overalls breeches & shorts (other than swimwear)	0.27	0.45	1.83	1.43
6204	Women's/girls' suits,ensembles,jackets, dresses,skirts,trousers,bib & brace ovrals,brechs & shorts etc(excpt swimwear)	0.64	0.32	1.06	0.87
6205	Men's or boy's shirts	1.00	0.95	1.24	2.08
6206	Women/girls' blouses,shirts & shirt-blouses	0.06	0.07	0.39	0.22
6207	Men's or boys' singlets and other vests underpants,briefs,night-shirts,pyjamas, bathrobes,dressing gowns & similar artcls	0.03	0.36	0.06	0.17

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Table 5.11A

Impor t of Articles of apparel and clothing accessories not Knitted and crocheted from World to India in quantity term

6208	Women's or girls' singlets & other vests, slips,peticots,brfs,panties,nightdresses, pyjms,negliges,bathrobs,etc.& smlr artcls	0.02	0.09	0.21	0.16
6209	Babies' garments and clothing accessories	0.01	0.39	1.87	1.67
6210	Garments,made up of fabrics of heading no.5602,5603,5903,5906 or 5907	0.08	0.21	0.07	0.16
6211	Track suits, ski suits and swimwear; other garments.	0.21	0.11	0.05	0.04
6212	Brassieres, girdles, corsets, braces, suspenders, garters and similar articles and parts thereof, whether or not knitted or crocheted.	0.07	0.37	0.55	1.02
6213	Handkerchiefs	0.004	0.05	0.21	0.89
6214	Shawls, scarves, mufflers, mantillas, veils and the like.	0.11	0.20	0.38	0.28
6215	Ties, bow ties and cravats	0.16	0.19	0.84	0.95
6216	Gloves, mittens and mitts	0.01	0.13	0.39	0.74
	Total	2.72	4.00	9.29	10.99
	% growth rate		10.12	32.43	18.30
(Quantity: million kg)					
6217	Other made up clothing accessories, parts of garments or of clothing accessories, excl of hdg 6212	0.17	0.55	0.98	0.87
	% growth rate		34.12	21.23	-11.22
Source: DGCI &S, India trade of CMIE					

Table 5.12A Import of Other made up textile articles, wor n cloth and worn textile articles from World to India in Quantity Term					
(Quantity: million kg)		2000-01	2004-05	2007-08	2008-09
6302	Bed linen, table linen, toilet linen and kitchen linen	0.19	0.47	0.63	0.58
6303	Curtains(including drapes) & interior blinds;curtain or bed valances	0.06	0.19	0.43	0.46
6304	Othr frnshng artcls excl of hdg no. 9404	0.14	1.87	8.94	15.72
6305	Sacks and bags , of a kind used for packing of goods	64.74	9.17	42.11	58.16
6306	Tarpaulins,sails for boats,sailboards orlndcrft,awnngs,sunblnds,tnts & cmpng goods	0.34	0.07	0.19	0.49
6307	Other made up articles incl dress patterns	1.47	2.96	5.84	4.39
6308	Sets consstng of wovn fbrcs & yrn,w/n wth accssrs,fr mkng rugs,tpstrs,embrdrd table cloth & like in pckngs fr rtl sale	-	0.02	0.01	-
6309	Worn clothing and other worn articles	16.01	60.79	36.89	43.64
6310	Usd/new rags,scrp twne,cordge,rope &cbls & worn out artcls of twne,cordge,rope/cbls,of textile materials	97.78	73.61	91.81	84.63
	Total	180.75	149.17	186.85	208.08
	% growth rate		-4.69	7.80	11.36
(Quantity: million pieces)					
6301	Blankets and traveling rugs	0.18	0.19	1.89	6.07
	% growth rate		1.36	115.06	221.16
Source: DGCI &S, India trade of CMIE					

Table 5.13A
Export of Fibre from India to Rest of World in value Term

(Value: Rs. Crores)

HS code	Type of Fibre	1990-91	2000-01	2004-05	2007-08	2008-09
	Silk fibre					
5001	Silk-worm cocoons suitable for reeling	-	0.36	1.70	1.24	0.54
5002	Raw silk (not thrown)	0.01	5.19	7.56	7.45	10.90
5003	Slk wste (incld cocoons nt sutble fr relngyarn wste & garnte stock)	2	45.49	1.49	12.15	3.28
	Total	2	51.05	10.76	20.83	14.72
	Compound annual growth rate		38.26	-32.24	24.63	-29.33
	Wool fibre					
5101	Wool not carded or combed	0.02	2.69	4.59	1.71	1.15
5102	Fine/coarse anml hair nt crded/combed	1	0.73	0.75	0.66	0.93
5103	Waste of wool/of fine/coarse animal hair incl yarn waste excl garnetted stock	-	2.12	2.21	0.86	1.57
5104	Grntd stock of wool/fine/coarse anml hair	1	0.36	3.32	0.55	0.58
5105	Wool & fine/coarse anml hair crded or cmbd(incl combed wool in fragments)	1	16.36	80.16	139.74	146.12
	Total	3	22.26	91.04	143.53	150.35
	Compound annual growth rate		22.19	42.21	16.39	4.75
	Cotton fibre					
5201	Cotton, not carded or combed	486	61.64	357.35	8742.29	3180.06
5202	Coton wast(incl yarn wast & grnted stock)	25	27.27	32.46	112.97	113.90
5203	Cotton carded or combed	1	135.21	32.77	10.14	11.52
	Total	512	224.13	422.58	8865.39	3305.48
	Compound annual growth rate		-7.93	17.18	175.80	-62.71
	Man made filament fibre					
5501	Synthetic Filament Tow	3	8.26	71.28	20.06	14.16
5502	Artificial Filament Tow	0.24	2.91	7.09	4.67	2.39
5503	Synthetic Staple Fibres,not Carded, Combed/Otherwise Processed For Spinning	51	120.61	304.80	798.72	893.81
5504	Artificial Staple Fibres not Carded,Combed/Otherwise Processed For Spinning	2	18.65	61.96	263.31	303.25
5505	Waste(Incl Noils Yrn Waste & Garnettedstock) of Man-Made Fibres	1	8.66	13.29	47.36	88.89
5506	Synthetic Staple Fibres Carded Combed/otherwise Processed For Spinning	1	19.36	13.87	10.19	39.61

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Table 5.13A

Export of Fibre from India to Rest of World in value Term

(Value: Rs. Crores)

5507	Artificial Staple Fibres,Carded,Combed/Otherwise Processed For Spinning	2	0.12	1.49	2.14	11.95
	Total	59	178.58	473.79	1146.45	1354.05
	Compound annual growth rate		11.71	27.63	34.25	18.11
	Grand total	576	476.02	998.17	10176.19	4824.60
	Compound annual growth rate		-1.89	20.34	116.83	-52.59

Source: DGCI &S, India trade of CMIE

Table 5.14A

Export of Yarn from India to Rest of World in Value Term

(Value: Rs. crore)

HS code	Type of yarn	2000-01	2004-05	2007-08	2008-09
	Silk yarn				
5004	Slk yarns(othr thn yrn spun from slk wste)nt put up for retail sale	5.51	3.43	6.27	3.01
5005	Yarn spun from silk waste, not put for retail sale	2.86	12.71	24.92	20.79
5006	Silk yarn and yarn spun from silk waste, put up for retail sale; silk-worm gut.	1.07	27.22	5.51	4.50
	Total	9.43	43.35	36.69	28.31
	% growth rate		46.43	-5.41	-22.84
	Wool yarn				
5106	Yrn of crded wool nt put up fr retail sale	9.55	13.19	26.06	24.36
5107	Yarn of combed wool, not put for retail sale.	84.48	86.55	130.04	156.63
5108	Yarn of fine animal hair(carded/combed) not put up for retail sale	2.06	23.49	21.69	18.09
5109	Yarn of wool or of fine animal hair,put up for retail sale	1.85	9.21	6.85	1.78
5110	Yrn of coarse anml hair/of hors hair(incl gmpd horshair yarn)w/n put up fr retl sale	0.20	0.99	0.01	0.38
	Total	98.14	133.42	184.64	201.24
	% growth rate		7.98	11.44	8.99
	Cotton yarn				
5204	Coton sewng thred w/n put up for retl sale	139.42	148.68	79.23	41.45
5205	Cotn yrn(othr thn swng thrd)cntng 85% ormore by wt of coton nt put up fr retl sale	4182.07	3319.84	6710.82	7399.96
5206	Coton yrn(othr thn sewng thrd)contngcoton <85% by wt nt put for retail sale	8.72	36.62	106.05	129.06

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Table 5.14A
Export of Yarn from India to Rest of World in Value Term

(Value: Rs. crore)

5207	Cotton yarn(other than sewing thread) put up for retail sale	1990.61	2137.08	786.16	381.58
	Total	6320.83	5642.21	7682.26	7952.06
	% growth rate		-2.80	10.84	3.51
	Man made filament yarn				
5401	Sewing thread of man-made filaments, whether or not put up for retail sale	19.39	19.21	51.71	63.43
5402	Synthtc filamnt yrn(othr thn sewng thrd)not put up for retail sale incl synthetic monofilament of less than 67 decitex	736.25	901.96	1796.29	2061.19
5403	Artificial filament yarn(excl sewingthread),not put up for retail sale,incl artificial monofilament of < 67 decitex	237.25	250.06	328.06	203.79
5404	Synthtc monflmnt of>=67 dctx & of crss-sctnl dimnsn<=1mm;strp etc(e.g.artfcl strw)of synthtc txtl mtrls of wdth<=5mm	5.37	18.92	25.71	29.39
5405	Artificial monofilament of 67 decitex or more and of which no cross-sectional dimension exceeds 1 mm; strip and the like (for example, artificial straw) of artificial textile materials of an apparent UNIT	7.44	2.74	1.75	1.78
5406	Man-made filament yarn(other than sweingthread),put up for retail sale	11.28	12.29	12.20	19.07
	Total	1016.99	1205.18	2215.73	2378.67
	% growth rate		4.34	22.51	7.35
	Man made staple yarn				
5508	Sewing Thread of Man-Made Staple Fibres,W/N Put Up For Retail Sale	14.65	19.53	22.19	27.01
5509	Yarn(oth Thn Swng Thread)of Synthtc staple Fibres,Not Put Up For Retail Sale	769.65	1148.59	1569.36	1708.40
5510	Yarn(oth Thn Swng Thread)of Artfcl Staple Fibres not Put Up Fr Rtl Sale	299.26	470.46	692.25	642.67
5511	Yarn(oth Thn Swng Thread)of Man-Made Staple Fibres Put Up For Rtl Sale	6.48	13.21	23.65	16.35
	Total	1090.03	1651.79	2307.44	2394.44
	% growth rate		10.95	11.79	3.77
	Grand total	8535.41	8675.96	12426.77	12954.71
	% growth rate		0.41	12.72	4.25

Source: DGCI &S, India trade of CMIE

Table 5.15A
Export of fabric from India to rest of world in Value Term

(Quantity: Million sq. mts.)

HS code	Type of fabric	2000-01	2004-05	2007-08	2008-09
	Silk fabric				
5007	Woven fabrics of silk or silk waste	1230.09	1593.91	1336.34	1503.18
	% growth rate		6.69	-5.71	12.48
	Wool fabric				
5111	woven fabrics of carded wool or of carded fine animal hair	10.80	28.76	45.66	67.29
5112	wovn fbrcs of cmbd wool/fine anml hair	124.27	64.93	88.24	130.85
5113	wovn fbrcs of corse anml hair/of hors hair	0.44	1.07	0.70	0.78
	Total	135.52	94.77	134.59	198.92
	% growth rate		-8.55	12.40	47.80
	Cotton fabric				
5208	wovn fbrcs of coton contng>=85% by wt of coton weghng nt more thn 200 g/m2	2333.57	1892.75	2414.19	2710.51
5209	wovn fbrcs of cotton, contng >=85% cotn by wt weighing>200 g m per sqm	1464.95	1208.48	1225.34	1178.07
5210	wovn fbrcs contng<85% coton,mxd mainly or solely wth manmade fbrs weghng<=200g/m2	374.00	283.11	68.73	88.47
5211	wovn fbrcs of coton,contng<85% cotton,mxd mainly wth mnmd fbrs weighing>200 g/m2	138.94	484.23	139.47	109.09
5212	other woven fabrics of cotton	145.50	234.10	318.91	308.26
	Total	4456.96	4102.68	4166.65	4394.40
	% growth rate		-2.05	0.52	5.47
	Man made filament fabric				
5407	wovn fbrcs of synthtc filament yarn incl wovn fbrcs obtnd from mtrls of hdg no.5404	1244.35	3086.43	3094.19	4351.56
5408	woven fabrics of artfcs filament yarn,inclfbrcs obtnd from materials of hdg no.5405	82.44	175.08	141.12	151.72
	Total	1326.79	3261.50	3235.32	4503.28
	% growth rate		25.21	-0.27	39.19
	Man made staple fabric				
5512	woven fbrcs of synthtc staple fibres cntng85% or more by wt of synthtc staple fibres	147.70	213.33	745.97	1155.12
5513	woven fbrcs of synthtc staple fibres cntngless thn 85% by wt of such fibres,mxd mnlyor solely wth cotton of wt<=170 g/m2	202.94	233.67	84.40	85.96

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Table 5.15A

Export of fabric from India to rest of world in Value Term

(Quantity: Million sq. mts.)

5514	wvn fbrcs of synthtc stpl fbrs cntng< 85% by wt of such fbrs mxd mainly/solely with cotton of a wt excdg 170 g/m2	79.58	63.21	58.06	39.17
5515	othr wvn fbrcs of synthtc stpl fbrs	457.42	848.63	1095.26	1135.74
5516	woven fabrics of artificial stpl fbrs	48.43	81.20	91.37	67.52
	Total (staple)	936.07	1440.02	2075.07	2483.50
	% growth rate		11.37	12.95	19.68
	Total (staple + filament)	2262.86	4701.54	5310.39	6986.78
	% growth rate		20.06	4.14	31.57
	knitted or crocheted fabric				
6001	pile fabrics including"long pile" fabrics and terry fabrics,knitted/crochetted	57.17	112.01	136.97	124.43
6002	knitd or crocheted fbrcs of width <30 cm ,contng elastomeric yarn/rubr>=5% by wt , excpt hdg no 6001	95.72	39.41	22.04	25.39
6003	knitd or crocheted fbrcs of a width<30cm, excpt hdg no 6001 or 6002	-	25.33	34.91	15.36
6004	knitd or crocheted fbrcs of width.30cm , contng elastomeric yarn/rubr>=5% by wt, excpt hdgno. 6001	-	0.27	6.97	24.29
6005	warp knit fbrcs(incl those made on gallon knitd machn), excpt hdg no. 6001 to 6004	-	13.87	32.25	18.89
6006	othr knitted or crochetedbfabrics	-	7.70	130.43	298.61
	Total	152.89	198.58	363.57	506.98
	% growth rate		6.76	22.34	39.44
	Grand total	8238.31	10691.49	11311.54	13590.26
	% growth rate		6.73	1.90	20.15

Source: DGCI &S, India trade of CMIE

Table 5.16A
Export of Articles of apparel and clothing accessories Knitted and crocheted in Value Term
(Value: Rs. Crore)

HS code	Type of garment	2000-01	2004-05	2007-08	2008-09
6101	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, knitted or crocheted, other than those of heading no. 61.03	202.99	261.12	38.85	48.87
6102	Women's/girls' overcoats, carcoats etc (incl ski-jackts), wind-cheaters etc., knitd/crchtd,excpt those of hdg 6104	58.56	63.83	17.75	28.45
6103	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted.	269.17	464.36	633.67	918.41
6104	Women's/girls'suits,ensembles,jackets dresses,skrts & divided skrts,trousers, bib,brace overalls etc,knttd/crocheted	701.89	718.43	1231.37	1484.02
6105	Men's/boys'shirts,knitted/crocheted	1769.78	1963.09	2028.50	2034.51
6106	Women'/girls' blouses,shirts &shirts-blouses,knitted or crocheted	501.66	1049.93	1505.26	1738.35
6107	Men's or boys' underpants, briefs, nightshirts, pyjamas, bathrobes, dressing gowns and similar articles, knitted or crocheted	472.07	798.48	961.49	1178.79
6108	Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas, negliges, bathrobes, dressing gowns and similar articles, knitted or crocheted	472.38	939.93	1197.67	1379.07
6109	T-shirts, singlets & other vests, knitted or crocheted	2241.96	3822.69	6699.16	7091.99
6110	Jerseys,pullovers,cardigans,waistcoats &similar articls,knttd/crchtd	772.88	744.51	1056.94	1292.26
6111	Babies' garments & clothing accessories, knitted or crocheted	348.83	532.87	1140.05	1296.30
6112	Track suits, ski suits and swimwear, knitted or crocheted	18.66	76.85	29.63	32.98
6113	grmnts,made up of knttd/crchtd fabrics of hdng no. 5903 5906 or 5907	1.17	14.06	-	11.07
6114	Other garments,knitted/crocheted	50.57	111.18	397.89	559.49
6115	Panty hose, tights, stockings, socks and other hosiery, including stockings for varicose veins and footwear without applied soles, knitted or crocheted.	125.33	117.91	153.92	161.07
6116	Gloves,mittens & mitts,knitted/crocheted	33.32	37.40	36.24	48.62
6117	Othr made up clothng accssrs,kntd/crchtd; kntd/crchtd prts of grmnts/clothng acssrs	122.04	151.05	72.64	109.99
	Total	8163.26	11867.69	17201.06	19414.25
	% growth rate		9.81	13.17	12.87

Source: DGCI &S, India trade of CMIE

Table 5.17A
Articles of apparel and clothing accessories not Knitted and crocheted in Value Term

(Value: Rs. Crore)

HS Code	Type of garment	2000-01	2004-05	2007-08	2008-09
6201	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading No. 62.03.	454.10	429.12	145.19	150.81
6202	Women's/girl's overcoats,carcoats, capes, cloaks, anoraks (incl ski-jackets), wind-chtrs wind-jackets & similar articles excl hdg 6204	122.14	209.46	88.46	137.67
6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib & brace overalls breeches & shorts (other than swimwear)	1494.02	1845.72	3027.97	3639.09
6204	Women's/girls' suits,ensembles,jackets, dresses,skirts,trousers,bib & brace ovrals,brechs & shorts etc(excpt swimwear)	4974.49	4667.38	7213.36	7657.93
6205	Men's or boy's shirts	3955.51	3424.79	3230.43	3403.29
6206	Women/girls' blouses,shirts & shirt-blouses	3426.59	4246.15	4490.92	4763.64
6207	Men's or boys' singlets and other vests underpants,briefs,night-shirts,pyjamas, bathrobes,dressing gowns & similar artcls	189.00	234.14	124.54	153.51
6208	Women's or girls' singlets & other vests, slips,peticots,brfs,panties,nightdresses, pyjms,negliges,bathrobs,etc.& smlr artcls	608.57	543.43	508.49	528.61
6209	Babies' garments and clothing accessories	449.04	356.88	506.09	439.09
6210	Garments,made up of fabrics of heading no.5602,5603,5903,5906 or 5907	76.44	113.60	29.15	28.80
6211	Track suits, ski suits and swimwear; other garments.	375.75	312.49	516.90	653.72
6212	Brassieres, girdles, corsets, braces, suspenders, garters and similar articles and parts thereof, whether or not knitted or crocheted.	22.52	26.58	122.60	152.16
6213	Handkerchiefs	17.55	14.34	17.10	17.50
6214	Shawls, scarves, mufflers, mantillas, veils and the like.	1056.94	1143.53	1646.35	2461.71
6215	Ties,bow ties and cravats	8.39	7.87	11.96	29.37
6216	Gloves,mittens and mitts	15.06	20.09	40.11	46.24
6217	Other made up clothing accessories, parts of garments or of clothing accessories, excl of hdg 6212	70.49	74.51	101.63	157.09
	Total	17316.63	17670.10	21821.24	24420.26
	% growth rate		0.51	7.29	11.91
Source: DGCI &S, India trade of CMIE					

Table 5.18A
Export of Other made up textile articles, worn cloth and worn textile articles in Value Term

(Value: Rs. Crore)

HS Code	Type of garment	2000-01	2004-05	2007-08	2008-09
6301	Blankets and travelling rugs	141.63	299.27	210.58	254.07
6302	Bed linen, table linen, toilet linen and kitchen linen	242.49	965.71	1998.16	2417.92
6303	Curtains(including drapes) & interior blinds;curtain or bed valances	307.69	340.37	601.79	621.13
6304	Othr frnshng artcls excl of hdg no. 9404	2806.67	4163.37	4579.66	4888.65
6305	Sacks and bags , of a kind used for packing of goods	307.96	385.76	547.44	948.45
6306	Tarpaulins,sails for boats,sailboards orlndcrft,awnngs,sunblnds,tnts & cmpng goods	44.88	67.31	44.25	44.82
6307	Other made up articles incl dress patterns	1376.42	2582.56	1577.81	1572.53
6308	Sets consstng of wovn fbrcs & yrn,w/n wth accssrs,fr mkng rugs,tpstrs,embrdrd table cloth & like in pckngs fr rtl sale	1.47	1.99	4.09	2.87
6309	Worn clothing and other worn articles	16.84	2.46	2.09	0.12
6310	Usd/new rags,scrp twne,cordge,rope &cbls & worn out artcls of twne,cordge,rope/cbls,of textile materials	9.06	60.83	8.55	8.68
	Total	5255.11	8869.64	9574.42	10759.23
	% growth rate		13.98	2.58	12.37

Source: DGCI &S, India trade of CMIE

Table 5.19A
Import of fibre from World to India in Value Term

(Value: Rs. Crore)

HS code	Type of fibre	2000-01	2004-05	2007-08	2008-09
	Silk fibre				
5001	silk-worm cocoons suitable for reeling	0.55	0.02	0.74	0.09
5002	raw silk (not thrown)	475.15	637.43	734.44	908.87
5003	slk wste (incld cocoons nt sutble fr relngyarn wste & garnte stock)	0.48	8.79	15.52	14.97
	Total	476.18	646.23	750.69	923.94
	% growth rate		7.93	5.12	23.08
	Wool fibre				
5101	wool not carded or combed	457.96	867.02	1089.52	1304.07
5102	fine/coarse anml hair nt crded/combed	10.72	10.24	12.29	9.32
5103	waste of wool/of fine/coarse animal hair incl yarn waste excl garnetted stock	8.55	13.91	5.76	4.70
5104	grntd stock of wool/fine/coarse anml hair	-	0.05	0.15	0.001
5105	wool & fine/coarse anml hair crded or cmbd(incl combed wool in fragments)	7.48	18.09	30.79	65.21
	Total	484.71	909.32	1138.51	1383.30
	% growth rate		17.03	7.78	21.50
	Cotton fibre				
5201	cotton, not carded or combed	1177.66	1116.42	889.65	1361.28
5202	coton wast(incl yarn wast & grnted stock)	5.62	17.08	17.32	11.15
5203	cotton carded or combed	1.44	2.06	5.17	13.16
	Total	1184.73	1135.56	912.14	1385.59
	% growth rate		-1.05	-7.04	51.91
	Man made filament fibre				
5501	Synthetic Filament Tow	70.16	84.31	62.71	89.31
5502	Artificial Filament Tow	47.08	73.26	102.49	165.61
5503	Synthetic Staple Fibres,not Carded, Combed/Otherwise Processed For Spinning	140.95	143.95	180.37	270.76
5504	Artificial Staple Fibres not Carded,Combed/Otherwise Processed For Spinning	13.21	15.04	94.66	154.85
5505	Waste(Incl Noils Yrn Waste & Garnettedstock) of Man-Made Fibres	21.75	50.49	31.98	41.91
5506	Synthetic Staple Fibres Carded Combed/otherwise Processed For Spinning	3.27	20.99	4.59	15.93
5507	Artificial Staple Fibres,Carded,Combed/Otherwise Processed For Spinning	0.45	0.35	1.38	1.53
	Total	296.88	388.39	478.17	739.90
	% growth rate		6.95	7.18	54.74
	Grand total	2442.50	3079.51	3279.52	4432.74
	% growth rate		5.96	2.12	35.16

Source: DGCI &S, India trade of CMIE

Table 5.20A
Import of yarn from World to India in Value Term

(Value: Rs. Crore)

HS code	Type of yarn	2000-01	2004-05	2007-08	2008-09
	Silk yarn				
5004	Slk yarns(othr thn yrn spun from slk wste)nt put up for retail sale	59.86	179.51	97.47	97.72
5005	Yarn spun from silk waste, not put for retail sale	10.39	10.06	21.18	20.12
5006	Silk yarn and yarn spun from silk waste, put up for retail sale; silk-worm gut.	0.98	16.42	18.52	13.48
	Total	71.24	205.99	137.17	131.32
	% growth rate		30.40	-12.68	-4.26
	Wool yarn				
5106	Yrn of crded wool nt put up fr retail sale	1.56	9.06	12.01	4.72
5107	Yarn of combed wool, not put for retail sale.	5.42	5.36	10.97	12.99
5108	Yarn of fine animal hair(carded/combed) not put up for retail sale	0.26	0.80	2.37	5.09
5109	Yarn of wool or of fine animal hair,put up for retail sale	3.44	0.26	3.02	2.79
5110	Yrn of coarse anml hair/of hors hair(incl gmpd horshair yarn)w/n put up fr retl sale	0.53	0.001	0.22	-
	Total	11.21	15.48	28.60	25.59
	% growth rate		8.40	22.71	-10.52
	Cotton yarn				
5204	Coton sewng thred w/n put up for retl sale	1.87	2.74	3.94	5.02
5205	Cotn yrn(othr thn swng thrd)cntng 85% ormore by wt of coton nt put up fr retl sale	29.43	34.19	57.52	57.69
5206	Coton yrn(othr thn sewng thrd)contngcoton <85% by wt nt put for retail sale	0.08	1.65	26.83	4.03
5207	Cotton yarn(other than sewing thread) put up for retail sale	1.60	1.94	2.62	0.47
	Total	32.98	40.53	90.92	67.21
	% growth rate		5.29	30.91	-26.08
	Man made filament yarn				
5401	Sewing thread of man-made filaments, whether or not put up for retail sale	6.27	17.86	50.99	94.19
5402	Synthtc filamnt yrn(othr thn sewng thrd)not put up for retail sale incl synthetic monofilament of less than 67 decitex	631.03	1182.97	1212.03	1456.38

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Table 5.20A
Import of yarn from World to India in Value Term

(Value: Rs. Crore)

5403	Artificial filament yarn(excl sewingthread),not put up for retail sale,incl artificial monofilament of < 67 decitex	31.41	135.71	225.26	380.50
5404	Synthtc mo nflmnt of>=67 dctx & of crss-sctnl dimnsn<=1mm;strp etc(e.g.artfcl strw)of synthtc txtl mtrls of wdth<=5mm	21.49	40.85	74.87	106.97
5405	Artificial monofilament of 67 decitex or more and of which no cross-sectional dimension exceeds 1 mm; strip and the like (for example, artificial straw) of artificial textile materials of an apparent UNIT	0.01	0.77	0.07	-
5406	Man-made filament yarn(other than sweingthread),put up for retail sale	0.70	3.87	5.83	9.90
	Total	690.92	1382.03	1569.05	2047.94
	% growth rate		18.92	4.32	30.52
	Man made staple yarn				
5508	Sewing Thread of Man-Made Staple Fibres,W/N Put Up For Retail Sale	1.53	7.03	15.18	14.17
5509	Yarn(oth Thn Swng Thread)of Synthtc staple Fibres,Not Put Up For Retail Sale	32.49	151.65	321.31	370.59
5510	Yarn(oth Thn Swng Thread)of Artfcl Staple Fibres not Put Up Fr Rtl Sale	0.92	14.62	21.60	17.49
5511	Yarn(oth Thn Swng Thread)of Man-Made Staple Fibres Put Up For Rtl Sale	0.28	0.74	1.84	0.40
	Total	35.23	174.05	359.93	402.67
	% growth rate		49.09	27.40	11.87
	Grand total	841.59	1818.08	2185.67	2674.73
	% growth rate		21.24	6.33	22.38

Source: DGCI &S, India trade of CMIE

Table 5.21A
Import of fabric from World to India in Value term

(Value: Rs. Crore)

HS code	Type of fabric	2000-01	2004-05	2007-08	2008-09
	Silk fabric				
5007	Woven fabrics of silk or silk waste	20.54	597.07	695.91	711.09
	% growth rate		132.20	5.24	2.18
	Wool fabric				
5111	woven fabrics of carded wool or of carded fine animal hair	0.91	114.83	114.84	136.16
5112	wovn fbrcs of cmbd wool/fine anml hair	6.60	46.35	51.81	32.50
5113	wovn fbrcs of corse anml hair/of hors hair	0.01	0.26	0.41	0.08
	Total	7.51	161.44	167.06	168.75
	% growth rate		115.33	1.15	1.01
	Cotton fabric				
5208	wovn fbrcs of coton contng>=85% by wt of coton weghng nt more thn 200 g/m2	53.47	516.23	619.20	579.12
5209	wovn fbrcs of cotton, contng >=85% cotn by wt weighing>200 gm per sqm	24.31	236.13	427.31	431.02
5210	wovn fbrcs contng<85% coton,mxd mainly or solely wth manmade fbrs weghng<=200g/m2	22.62	47.33	93.39	116.92
5211	wovn fbrcs of coton,contng<85% cotton,mxd mainly wth mnmd fbrs weighing>200 g/m2	3.85	26.11	20.86	21.09
5212	other woven fabrics of cotton	3.63	13.38	31.92	20.54
	Total	107.88	839.19	1192.69	1168.68
	% growth rate		67.00	12.43	-2.01
	Man made filament fabric				
5407	wovn fbrcs of synthtc filament yarn incl wovn fbrcs obtnd from mtrls of hdg no.5404	169.48	387.37	377.55	381.66
5408	woven fabrics of artfcs filament yarn,inclfbrcs obtnd from materials of hdg no.5405	6.60	14.93	23.17	22.57
	Total	176.08	402.31	400.71	404.24
	% growth rate		22.95	-0.13	0.88
	Man made staple fabric				
5512	woven fbrcs of synthtc staple fibres cntng85% or more by wt of synthtc staple fibres	12.07	42.82	59.78	61.35
5513	woven fbrcs of synthtc staple fibres cntngless thn 85% by wt of such fibres,mxd mnlyor solely wth cotton of wt<=170 g/m2	30.56	31.75	36.29	30.60

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Table 5.21A
Import of fabric from World to India in Value term

(Value: Rs. Crore)

5514	wvn fbrcs of synthtc stpl fbrs cntng< 85% by wt of such fbrs mxd mainly/solely with cotton of a wt excdg 170 g/m2	12.22	7.52	9.46	24.74
5515	othr wvn fbrcs of synthtc stpl fbrs	25.16	76.38	88.26	97.91
5516	woven fabrics of artificial stpl fbrs	3.96	21.37	17.42	14.11
	Total	83.96	179.84	211.22	228.72
	% growth rate		20.98	5.51	8.28
	knitted or crocheted fabric				
6001	pile fabrics including"long pile" fabrics and terry fabrics,knitted/crochetted	146.15	124.28	78.30	119.37
6002	knitd or crocheted fbrcs of width <30 cm ,contng elastomeric yarn/rubr>=5% by wt , excpt hdg no 6001	81.99	27.17	20.03	35.03
6003	knitd or crocheted fbrcs of a width<30cm, excpt hdg no 6001 or 6002	-	5.18	11.59	5.61
6004	knitd or crocheted fbrcs of width.30cm , contng elastomeric yarn/rubr>=5% by wt, excpt hdgno. 6001	-	4.09	25.77	38.02
6005	warp knit fbrcs(incl those made on gallon knitd machn), excpt hdg no. 6001 to 6004	-	51.06	174.18	240.44
6006	othr knitted or crochetedbfabrics	-	58.60	260.41	197.43
	Total	228.13	270.37	570.27	635.90
	% growth rate		4.34	28.24	11.51
	Grand Total	624.12	2450.21	3237.86	3317.37
	% growth rate		40.76	9.74	2.46

Source: DGCI &S, India trade of CMIE

Table 5.22A
Import of Articles of apparel and clothing accessories Knitted and crocheted from World to India in Value term
(Value: Rs. Crore)

HS Code	Type of garments	2000-01	2004-05	2007-08	2008-09
6101	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, knitted or crocheted, other than those of heading no. 61.03	0.38	1.52	1.48	1.51
6102	Women's/girls' overcoats, carcoats etc (incl ski-jackts), wind-cheaters etc., knitd/crchtd,excpt those of hdg 6104	0.40	0.05	0.28	0.47
6103	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted.	14.44	2.55	8.31	5.46
6104	Women's/girls'suits,ensembles,jackets dresses,skrts & divided skrts,trousers, bib,brace overalls etc,knttd/crocheted	0.40	2.27	9.08	10.36
6105	Men's/boys'shirts,knitted/crocheted	1.41	3.22	7.63	10.83
6106	Women'/girls' blouses,shirts &shirts-blouses,knitted or crocheted	1.52	1.74	12.62	15.21
6107	Men's or boys' underpants, briefs, nightshirts, pyjamas, bathrobes, dressing gowns and similar articles, knitted or crocheted	0.27	0.75	3.33	6.30
6108	Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas, negliges, bathrobes, dressing gowns and similar articles, knitted or crocheted	4.88	1.65	10.66	6.32
6109	T-shirts, singlets & other vests, knitted or crocheted	2.31	10.09	39.96	48.47
6110	Jerseys,pullovers,cardigans,waistcoats &similar articls,knttd/crchtd	0.46	6.71	21.94	21.84
6111	Babies' garments & clothing accessories, knitted or crocheted	0.10	1.32	6.27	9.34
6112	Track suits, ski suits and swimwear, knitted or crocheted	0.32	3.84	2.49	1.71
6113	grmnts,made up of knttd/crchtd fabrics of hdng no. 5903 5906 or 5907	0.06	0.00	0.28	0.01
6114	Other garments,knitted/crocheted	0.92	1.18	1.04	2.28
6115	Panty hose, tights, stockings, socks and other hosiery, including stockings for varicose veins and footwear without applied soles, knitted or crocheted.	1.68	4.92	11.23	15.34
6116	Gloves,mittens & mitts,knitted/crocheted	0.23	2.09	8.96	13.48
6117	Othr made up clothng accssrs,kntd/crchtd; kntd/crchtd prts of grmnts/clothng acssrs	1.01	4.58	7.67	6.56
	Total	30.77	48.47	153.23	175.48
	% growth rate		12.03	46.76	14.52

Source: DGCI &S, India trade of CMIE

Table 5.23A
Import of Articles of apparel and clothing accessories not Knitted and crocheted from World to India in value term
(Value: Rs. Crore)

HS Code	Type of garments	2000-01	2004-05	2007-08	2008-09
6201	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading No. 62.03.	0.48	3.57	4.89	3.93
6202	Women's/girl's overcoats,carcoats, capes, cloaks, anoraks (incl ski-jackets), wind-chtrs wind-jackets & similar articles excl hdg 6204	1.05	0.50	3.77	3.87
6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib & brace overalls breeches & shorts (other than swimwear)	9.11	19.31	98.19	93.90
6204	Women's/girls' suits,ensembles,jackets, dresses,skirts,trousers,bib & brace ovrals,brechs & shorts etc(excpt swimwear)	14.80	11.25	51.26	52.38
6205	Men's or boy's shirts	16.82	21.45	52.09	66.79
6206	Women/girls' blouses,shirts & shirt-blouses	1.01	2.61	12.96	12.40
6207	Men's or boys' singlets and other vests underpants,briefs,night-shirts,pyjamas, bathrobes,dressing gowns & similar artcls	0.58	1.37	1.76	2.39
6208	Women's or girls' singlets & other vests, slips,peticots,brfs,panties,nightdresses, pyjms,negliges,bathrobs,etc.& smlr artcls	0.25	1.13	4.93	1.98
6209	Babies' garments and clothing accessories	0.43	3.22	10.11	11.81
6210	Garments,made up of fabrics of heading no.5602,5603,5903,5906 or 5907	0.90	4.05	4.25	8.80
6211	Track suits, ski suits and swimwear; other garments.	3.24	2.11	1.95	3.19
6212	Brassieres, girdles, corsets, braces, suspenders, garters and similar articles and parts thereof, whether or not knitted or crocheted.	2.22	4.77	9.98	14.88
6213	Handkerchiefs	0.02	0.08	0.52	1.66
6214	Shawls, scarves, mufflers, mantillas, veils and the like.	8.99	4.88	8.53	7.94
6215	Ties, bow ties and cravats	3.50	3.10	9.38	12.44
6216	Gloves, mittens and mitts	0.31	0.37	0.99	2.49
6217	Other made up clothing accessories, parts of garments or of clothing accessories, excl of hdg 6212	4.45	17.31	25.03	23.51
	Total	68.17	101.07	300.57	324.37
	% growth rate		10.35	43.80	7.92

Source: DGCI &S, India trade of CMIE

Table 5.24A
Import of Other made up textile articles, worn cloth and worn textile articles from World to India in value term

(Value: Rs. Crore)

HS Code	Type of textile	2000-01	2004-05	2007-08	2008-09
6301	Blankets and traveling rugs	1.85	6.37	46.37	110.93
6302	Bed linen, table linen, toilet linen and kitchen linen	3.41	4.57	10.89	12.07
6303	Curtains(including drapes) & interior blinds;curtain or bed valances	1.01	3.49	8.36	11.26
6304	Othr frnshng artcls excl of hdg no. 9404	2.27	20.55	51.34	73.68
6305	Sacks and bags , of a kind used for packing of goods	129.67	34.03	117.79	165.65
6306	Tarpaulins,sails for boats,sailboards orlndcrft,awnngs,sunblnds,tnts & cmpng goods	3.70	1.77	4.44	8.57
6307	Other made up articles incl dress patterns	35.06	47.67	82.96	95.32
6308	Sets consstng of wovn fbrcs & yrn,w/n wth accssrs,fr mkng rugs,tpstrs,embrdrd table cloth & like in pckngs fr rtl sale	0.00	0.06	0.13	0.00
6309	Worn clothing and other worn articles	31.18	150.89	74.69	93.22
6310	Usd/new rags,scrp twne,cordge,rope &cbls & worn out artcls of twne,cordge,rope/cbls,of textile materials	144.16	112.94	96.03	87.61
	Total	352.31	382.34	493.01	658.30
	% growth rate		2.07	8.84	33.53

Source: DGCI &S, India trade of CMIE