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DISCREPANCIES IN OFFICIAL ESTIMATES OF PRODUCTION AND EMPLOYMENT IN TEXTILES AND CLOTHING SECTOR

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Central Statistical Organisation (CSO) in its revised series (base 1993-94) has lowered its estimates of gross domestic product in textiles and garment industry (NIC Code 23 to 26) for the year 1995-96 to Rs 26105 crore compared to its original estimates of Rs 40016 crore (base 1980-81), both at current prices. This has resulted in a decline in share of textile and garment industry in the country's GDP to around 2.5 per cent compared to its share of 4 per cent in the original series for the year 1995-96. This is mainly due to the fact that our knowledge about textile industry remains very incomplete, despite its importance due to all indicators, whether income generation, employment or exports. Textile Ministry and Textile Commissioner's (Official) estimates of sector-wise production of fabrics for unorganised sectors are derived on the basis of conversion rates of yarn to fabrics and mill yarn delivery to these sectors. The conversion rates used, however, for these sectors are old and have little scientific basis. The consequence is the peculiar outcome that official estimates of consumption simply do not match the official data on supply. Absence of this basic balance between overall supply and demand, and even greater uncertainty regarding sub-sector breakdowns, plagues almost all existing discussion of structure and change in this industry.

It is in this context that this article makes an attempt to note the basic statistical infirmities regarding the sector. An attempt is made to resolve this problem by working out sector-wise and fibre-wise scientific conversion rates on the basis of which revised estimates of production of fabrics are derived. The estimates of production of fabrics derived thus are 19.5 per cent lower compared to official estimates of production of fabrics. Sector-wise comparison shows that around 41 per cent (234.5 Million. Kg) of yarn packed in hank form during 1999-00, meant for consumption in the handloom sector, was later rewound on the cones and then diverted to the powerloom sector. Interestingly, the value added and employment estimates derived on the basis of sector-wise revised estimates of production of fabrics broadly tally with CSO estimates of value added and National Sample Survey (NSS) estimates of employment, respectively. The difference in estimates derived in this study and CSO estimates could widen over time, as the CSO estimates over time are based on the Index of Industrial Production (IIP). IIP is based on Textile Commissioner's data on production of fabrics, the limitations of which are discussed in detail.

I. BACKGROUND

Textile and Clothing continue to occupy the status of India's most important industry in terms of income, employment and exports, despite significant industrial deepening over the last 50 years. But unfortunately, our knowledge about this important industry remains very incomplete. A lot of literature is available on the structural changes in the textile and clothing

industry, which throws an important light on the process through which economic reforms have tried to modernise the textile and fabric industry. However, there exist certain methodological gaps in many of the studies. One of the major limitations is that most of these studies are based on official statistics on production of fabrics ignoring the accuracy of data derived by official agencies. A large part of production remains in the unorganised sector, i.e. carried out by powerlooms, handlooms and in small-scale garment manufacturing, data on which are unreliable.

The main problem is that the Textile Ministry and Textile Commissioner's (Official) estimates of sector-wise production of fabrics for unorganised sectors are derived on the basis of mill yarn delivery to these sectors and conversion rates of yarn to fabrics. The conversion rates used, however, for these sectors are old and have little scientific basis. The consequence is the peculiar outcome, that official estimates of consumption simply do not match the official data on supply. Absence of this basic balance between overall supply and demand, and even greater uncertainty regarding sub-sector breakdowns, plagues almost all existing discussion of structure and change in this industry.

The limitations in basic data cause discrepancies at all levels in the derived data. The estimates of CSO of value added in textiles and clothing sector over time are derived from base year values on the basis of Index of Index Production (IIP). The IIP is based on Textile Commissioner's data on production of fabrics. This explains why CSO has to revise its estimates of gross value added in this sector several times in recent past. The CSQ in its revised series (base 1993-94) has lowered the estimates of gross domestic product in textiles and garment industry (NIC Code 23 to 26) to Rs 26105 crore compared to its estimates of Rs 40016 crore (base 1980-81) for the year 1995-96, both at current prices. This has resulted in a decline in the share of textile and garment industry in country's GDP to around 2.5 per cent compared to its share of 4 per cent in the original series for the year 1995-96.

An attempt has been made in this article to resolve the discrepancies between estimates of sector-wise production of fabrics and consumption by working out revised estimates of production on the basis of scientific conversion rates. The revised estimates of production of fabrics derived in this study help us to prepare estimates of value added and employment generated in textiles sector to make a comparison with the estimates of CSO and National Sample Survey estimates. The estimates of production of fabrics derived thus are 19.5 per cent lower compared to official estimates of production of fabrics. Sector-wise comparison shows that around 41 per cent (234.5 Million Kg) of yarn packed in hank form during 1999-00, meant for consumption in the handloom sector, was later rewound on the cones and was diverted to the powerloom sector. Interestingly, the value added and employment estimates derived on the basis of sector-wise revised estimates of production of fabrics broadly tally with CSO (revised series) and NSS survey estimates of value added and employment, respectively, but are significantly different from those prepared by the Ministry of Textiles.

With this background note in Section I, this article notes the basic statistical infirmities regarding the sector in section II. Section III contains a review of literature. Section IV deals with methodology used in this study to derive the estimates of production of fabrics by developing conversion rates scientifically. Section V gives the estimates of the total production of fabrics based on conversion rates derived in this study. These total estimates of fabric's production are then compared with official estimates of production and consumption. The sector-wise comparison of production of fabrics and its consumption is

undertaken in Section VI. On the basis of discrepancies in sector-wise estimates of production and its consumption, an attempt is made to estimate the diversion of hank yarn in Section VII. The estimates of sector-wise production of fabrics are further revised in Section VIII, on the basis of hank yarn diversion. An attempt is then made in Section IX, to review the performance of various sectors on the basis of these estimates. In Section X and Section XI, the value added and employment estimates are derived on the basis of these revised estimates of production of fabrics. Section XII sums up the main findings of this study.

II. DISCREPANCIES IN OFFICIAL DATA ON PRODUCTION OF FABRICS

The per capita availability of fabrics for domestic consumption grew at a rate of 3.88 per cent per annum during 1990-91 to 1997-98 and is estimated at 30.98 sq. mts. during 1997-98. The per capita availability is derived by the Textile Commissioner on an yearly basis by dividing the difference in official production and estimates of exports of fabrics in the form of fabrics, made-ups and garments by the mid year population. The comparison of availability of fabrics with the aggregate household purchases published by the Market Research Wing, Textiles Committee reveals that there is wide difference in these two estimates and the difference is widening over the period of time. The difference is wider than what could be explained with the help of consumer non-household purchases or carry over stocks. This clearly brings out that something is wrong with either the statistics of fabrics of production or consumption. The official estimates of consumption are based on regular consumer survey, while the estimates of production of fabrics are derived on the basis of conversion rates, which are fixed long time back and have little scientific basis. This calls for a total review of the methodology used for estimating production of fabrics.

III. REVIEW OF LITERATURE

Scientific Conversion Rates

There exist several studies, which criticise the method adopted in official statistics to obtain the estimates of production of fabrics in the decentralised sector. Misra (1993) argued that official statistics on the production of woven fabrics hide as much as they reveal. Misra argued that the calculation of conversion factors cannot be a one-time exercise but has to be continuously updated to take into account the changing composition and construction of the fabrics woven.

ICRA, (1996) draft study on cotton sector was also critical of the official conversion rates. Misra (1993) and ICRA (1996) tried to rework the conversion rates for various sectors in their studies. But there was a major snag in these studies. Though these studies clearly pointed out that changing composition and construction of the fabrics were important to work out the fabric's weight, no attempt was made in thee studies to scientifically develop the count-range wise conversion rates.

Therefore, it is important to make an attempt to scientifically derive conversion rates based on these parameters for different fibres and sectors independently in a detailed analytical manner. These conversion rates of yarn to fabrics are then applied on the delivery of yarn to these sectors to estimate the production. However, the method to work out the production of fabrics in each sector on the basis of delivery of yarn to various sectors also has

a flaw, since it is believed that yarn packed in hank form is ultimately consumed in the powerloom sector on a large scale.

Hank Yarn Diversion

Jain's (1983) main thesis is that a large proportion of what is officially shown as handloom production is infact produced on powerlooms[1]. Although there is a statutory obligation on the mills to pack at least 50 per cent of the spun yarn produced in the hank form. The yarn wound in hank form is called hank yarn and is meant for consumption in the handloom sector. The reeling of yarn into hank imposes an additional cost, which the mills are usually not willing to bear. Most mills do not comply with these regulations since it is uneconomical to do so. The diversion of hank yarn to powerloom sector means that the hank yarn is either later rewound in the cone form or the yarn wound in the cone form is unlawfully declared as hank yarn to fulfil the obligations.

Keeping these issues in mind, this study first tried to estimate the production of fabrics in each sector on the basis of delivery of yarn to various sectors. An attempt is made later to estimate the extent of hank yarn diversion by using the sector-wise estimates of consumption and production. The estimates of sector-wise production of fabrics are then revised on the basis of this diversion. Based on these revised estimates of production of fabrics, the value added and employment estimates in textiles, garments and tailoring segment is worked out in this study.

The methodology adopted in this study is discussed in detail below.

IV. METHODOLOGY TO WORK OUT ESTIMATES OF PRODUCTION OF FABRICS

The weight of woven fabrics for each variety is worked out by using following formula.

Weight of woven fabric in gms/sq. mt =

$$\frac{(\text{Reeds} \times 39.37 \times 1.06 \times 1000) +}{(1690 \times S_2 / \text{Ply})} \quad \frac{(\text{Picks} \times 39.37 \times 1.09 \times 1000)}{(1690 \times S_1 / \text{Ply})} \qquad ...(i)$$

S_1 and S_2 are count of yarn used for fabric products; S_1 is warp count and S_2 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 sq. mt. (1.09) than warp (1.06).

The conversion rate is the inverse of weight of fabrics. Using this formula, the conversion rate of yarn from fabrics for main varieties of fabrics being produced from each count of yarn is estimated. The data regarding major varieties of fabrics produced is obtained from Ahmedabad Textile and Industry Research Association (ATIRA), 1984, fifteenth comprehensive study (second part) on Inter-firm comparison. AITRA has published details about various parameters (like reeds, picks and ply) for various varieties of fabrics produced in 33 mills. Data in ATIRA report are collected through questionnaires.

These conversion rates for each variety are used to estimate the count-wise weighted conversion rates of fabrics for different sectors. The weightage to each variety in a given count range is given according to the number of varieties being produced from a particular

count. The conversion rate for powerloom sector for a given count is generally higher compared to mill sector for the same count. This is because the variety of fabrics produced in powerloom sector is such that reeds and picks woven are less dense compared to mill sector. The fabrics produced from a given count composition in handloom sector is lighter even compared to powerloom sector for fabrics produced from same count composition. The conversion rate of fabrics also depend upon the variety of yarn such as cotton, polyester and viscose and is also taken into account in this study.

The other details are also required to estimate the count range-wise weighted conversion rates. Data on the main counts of yarn being consumed by various sectors are available from South India Mills Association (SIMA), 1996. This along with weighted count wise conversion rates for mill, powerloom, handloom and hosiery sector are used to estimate the weighted count range-wise conversion rates for these sectors (Statements 1 to 5 of the annex).

V. TOTAL PRODUCTION OF FABRICS

The count range-wise conversion rates are then applied on the fibre-wise and sector-wise count range-wise yarn consumption to find the count range-wise production of fabrics for various fibres. The advantage of working count range-wise production of fabrics is that it captures quality changes in the fabrics in addition to accuracy at aggregate level caused by capturing variations at various count ranges. The results in Table 1 are presented for the overall production and consumption of fabrics. The count range-wise estimates of production of fabrics are not presented in this study, as it was beyond the scope of this study.

The total estimate of production is then compared with overall consumption in Column 2 of Table 3. The overall consumption of fabrics includes consumption of household, non-household and exports sector. This is derived by working out fabrics equivalent square metre consumption in the form of hosiery fabrics, fabrics in piece length, made-ups and garments over time from available data in metres, pieces and rupees by using appropriate conversion rates. Such data for exports are available from Textile Export Promotion Council, Garments Export Entitlement Policy. The conversion rates for export data are obtained on the basis of available information from Garments Export Entitlement Policy and Directorate General of Commercial Intelligence & Statistics (DGCIS). The proportion of various kinds of goods exported is available from DGCIS data. Household and non-household consumption data are available in metres and are converted into square metres by finding the average length of various kinds of fabrics consumed in the household sector. Data on various varieties of fabrics consumed in household sector is available from Textile Committee data on household sector. Average length of these products consumed in household sector is obtained from available information in Textile Export Promotion Council, Garments Export Entitlement Policy. In a few cases, where information is not available, experts' opinion is also used. It is assumed that the consumption pattern in the non-household sector is similar to the household sector and so the overall conversion rates taken are same in both the sectors. Data for non-household sector consumption are available only till the year 1993-94.

The estimates of production of fabrics derived are comparable with the above estimates of consumption, but are much different than the official estimates of production of fabrics (Columns 1, 2 and 5 of Table 1). Thus either official estimates of production of fabrics or consumption estimates are wrong. This is based on simple economic logic that demand and

supply should match in the long run. Stocks cannot just go on accumulating. Why should one go on producing a product, which has less demand in the market? The fact that the estimates of production of fabrics derived by us are not much different than the estimates of consumption, these should give credence to the methodology used in this study. The difference between production estimates and consumption estimates derived in our study ranges between 2 to 6 per cent of the derived estimates of production of fabrics over the period of time (Column 3 of Table 1). Data for non-household consumption are available till year 1993-94. The difference in data in column 8 and column 9 of Table 1 shows the extent to which the non-household consumption has risen after 1993-94. This shows that the per capita availability of cotton fabrics for non-household consumption increased from 13.31 square metres to 16.70 square metres during the five-year period 1993-94 to 1998-99. The per capita availability of cotton fabrics for non-household consumption increased from 9.89 square metre to 13.31 square metres during the five-year period 1988-89 to 1993-94. The high growth rate achieved in the hotel industry, during both eighties and nineties and slow down in employment growth in police and defence forces after economic reforms during 1993-94 could explain this pattern. Thus the data for non-household consumption for the period after 1993-94 could be taken approximately close to availability for the purpose.

VI. DISCREPANCIES IN THE ESTIMATES OF PRODUCTION OF FABRICS AT SECTORAL LEVEL

The comparison of total estimates of fabrics production derived in this study with the overall consumption estimates hides wide discrepancies at sectoral and fibre level. Some inherent draw-backs in the survey, like short memory of consumers, communication and other errors, wrong identification of fabrics, fibres and sectors, could result in segment and sector-wise discrepancy between production and consumption estimates. Other reasons could be that fabrics produced in the mill and powerloom sector is not easy to distinguish. Similarly, 100 % cotton fabrics are not easily identifiable from cotton-blended fabrics with high share of cotton fibre. Thus some degree of discrepancies could be explained due to these factors.

There are however instances in which the difference cannot be explained due to these factors alone. The hosiery is one such sector. The difference is visible in estimates of hosiery production derived in this study and its estimates of consumption. The production of hosiery fabrics has increased at a very high rate, while consumption estimates are not reflecting it. The possible reason for it could be that the consumer survey is not able to capture the rapid changes in hosiery domestic consumption pattern. Another possible explanation for the same lies in the fact that the information for hosiery fabrics was not available separately till recently. This information used to be combined with powerloom data.

Handloom is another sector for which there exist wide difference in the estimates of production and consumption of fabrics. The explanation given in case of hosiery fabrics is not applicable here as fabrics produced in handloom sector are easily distinguishable. Bhide (1996) however was of the other opinion and argued that powerloom fabrics are being exported as handloom fabrics to take advantage of various incentives in trade agreements given to the handloom sector. This argument however, failed to explain the decline in overall handloom exports from 782 million square metre equivalent fabrics during 1994-95 to 664 million square metre in 1996-97, when the exports from all other sectors was rising. Thus, it seems reasonable to stick to the argument that margin of error due to wrong reporting in the

Table 1
Comparison of Total Estimates of Production and Overall Consumption of Fabrics

Year	Production (Derived) Mn. Sq. Mts.	Consumption	Difference %	Production (Official)	Exports Mn. Sq. Mts.	Availability (Derived)	Per Capita Availability (Derived) Sq. Mts.	Per Capita Household Consumption
	(2)	(3)	(4)=(2-3)/2	(5)	(6)	(7)	8=7/Population	9=3/Population
(1)								
1983	13989	13576	3.04	13137	966	13023	18.12	11.23
1988-89	18131	17644	2.76	20018	2094	16037	20.07	10.18
1989-90	18395	18970	-3.03	20598	2629	15766	19.33	9.32
1990-91	20412	19262	5.97	22928	3098	17314	20.80	8.26
1991-92	19824	20746	-4.44	22588	3608	16216	19.04	8.35
1992-93	21162	21183	-0.10	25045	4016	17146	19.76	8.56
1993-94	24006	23520	2.07	27472	4739	19267	21.92	8.61
1994-95	24369	—	—	28175	5421	18948	21.30	7.77
1995-96	27919	—	—	31460	5727	22192	24.31	7.79
1996-97	27794	—	—	34298	6374	21420	23.36	7.69
1997-98	31481	—	—	36896	6821	24660	26.50	7.85
1998-99	29847	—	—	35543	7479	22368	23.79	7.09
1999-00	31127	—	—	38627	7910	23217	24.38	—

Source: As derived by the author.

survey for the handloom fabrics may not be wide, as the handloom fabrics is easily distinguishable from fabrics produced in other sectors. Thus the difference in the estimates of consumption and production of handloom fabrics is probably due to diversion of hank yarn to powerloom sector.

VII. DIVERSION OF HANK YARN TO POWERLOOM SECTOR

An attempt has been made in this study to work out the extent of diversion of cotton hank yarn to the powerloom sector. The analysis was only possible for cotton fibre, as estimates for domestic consumption of synthetic handloom fabrics were not available.

The difference between the estimates of the production of handloom fabrics based on delivery of yarn and estimates of consumption of handloom fabrics are approximately 1656 million square metres during 1999-00. The diversion of fabric can also be worked out in terms of yarn equivalent by applying the handloom sector conversion rates. The approximate diversion of hank yarn to the powerloom sector during 1999-00 seems to be 210 million kilograms, which comes to around 40.9 per cent of the total cotton hank yarn delivery. Column 7 of Table 2 shows that the diversion of cotton hank yarn to the powerloom sector has increased at a very rapid rate during the second phase of liberalisation. The difference increased mainly after 1991-92. In fact the handloom sector was producing more fabrics than allowed by the delivery of hank yarn till year 1991-92 and thus there was a shortage of hank yarn prior to 1991-92. The share of hank yarn delivery in the total production of yarn remains more or less constant due to government regulations. The economic reforms introduced after 1991-92 seems to have affected the handloom sector the maximum. This benefit is obtained either by the powerloom sector by availing benefits of excise meant for hank yarn. The other possibility is that mills produced this amount of yarn as cone yarn at first place and were able

Table 2
Diversion of Cotton and Synthetic Hank Yarn to Powerloom Sector

Year	Consumption (Exports Plus Domestic)	Production Derived from Hank Yarn Delivery	Difference between Production & Consumption	Hank Yarn Delivery	Hank Yarn Require ment	Diversion of Hank Yarn	
		Mn. Sq Mts			Mn. Kgs	Mn. Kgs	% of production
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1983	4545	3134	1411	342	491.7	-149.7	-44.6
1988-89	4620	3316	1304	354	493.3	-139.3	-39.3
1989-90	3215	3189	26	348	351.3	-3.3	-0.8
1990-91	3173	3355	-182	375	354.2	20.8	5.5
1991-92	3946	3194	752	364	449.5	-85.5	-23.5
1992-93	2594	3603	-1009	415	298.4	116.6	28.0
1993-94	3174	3977	-803	464	370.5	93.5	20.2
1994-95	2908	4197	-1289	490	340.0	150.0	30.7
1995-96	3034	5022	-1988	571	345.5	225.5	39.6
1996-97	2990	4470	-1480	590	394.5	195.5	33.1
1997-98	3171	4270	-1099	598	444.1	153.9	25.7
1998-99	2342	3783	-1441	529	327.7	201.3	38.1
1999-2000	2391	4048	-1657	574	339.5	234.5	40.9

Source: As derived by the author from Textile Committee and Texprocil data.

to declare it as hank yarn to meet the obligations. Whatever the reason may be, this results in around 41 per cent lower production of handloom fabrics compared to the estimates on the basis of delivery of hank yarn.

One of the important reasons for rise in diversion seems to be the fact that handloom sector has become non-competitive in open environment. This is because of non-availability of adequate and timely credit facility, lack of marketing facility, replication of handloom products on powerlooms at a lower cost, and the gradual phasing out of the Janata Cloth Scheme. Comparisons of per kilogram prices of hank and cone yarn for various counts reveal that prices of hank yarn are lower compared to cone yarn, mainly for higher counts. In fact, the hank yarn prices are higher for counts upto 20s compared to cone yarn. So the diversion of hank yarn to powerloom sector must be taking place in finer counts.

Due to lack of data on sector-wise domestic consumption of synthetic fabrics in the household and non-household sector, it has been assumed that percentage of hank yarn diversion to powerloom sector is same both for cotton and synthetic yarn. The extent of total hank yarn (cotton and synthetic) diversion to powerloom sector on the basis of this assumption is estimated to be 234.5 million kgs.

VIII. SECTOR-WISE REVISED ESTIMATES OF PRODUCTION OF FABRICS

Based on these estimates of diversion of cotton and synthetic hank yarn, the sector-wise revised estimates of production of fabrics in handloom and powerloom sector are worked out[2]. The sector-wise revised estimates of production of fabrics derived in this study along with official estimates are given in Table 3.

Comparison of the estimates derived in this study show that during 1999-2000 the total production of fabrics is 7500 million metres lower compared with the official estimates. This means that during 1999-2000 the official estimates are 24.1 per cent higher compared to estimates derived in this study. In other words, derived estimates in this study are 19.5 per cent lower compared to official estimates. Total production of fabrics derived in this study grew at 5.59 per cent per annum during 1990-91 to 1999-2000 compared to 6.41 per cent per annum for official estimates during the same period (Table 3).

The fibre-wise estimates derived in this study show that the growth in production of cotton fabrics is low at the rate of 1.28 per cent per annum. The substitution of cotton woven fabrics with fabrics made from other fibres along with shifts in demand in favour of hosiery fabrics are the possible reasons for the slow growth in cotton fabrics. The estimates derived in this study are much different compared to official estimates due to differences in conversion rates (Statement 2 of Annex). Textile Commissioner's estimates of production of cotton fabrics during 1999-2000 are 5760 million square metres (43.5 per cent) higher compared to estimates derived in this study for the same period.

The sector-wise data in Table 3 reveals that the performance of mill and handloom sector is poor and performance of powerloom and hosiery sector is quite good on the basis of estimates derived in this study. The official estimates of production of hosiery fabrics during 1999-2000 are 1684 million square metres higher compared to estimates derived in this study. The production of fabrics in the powerloom sector is estimated at 22589 million square metres in this study during 1999-2000. Thus even the revised estimates even after taking into account the diversion of hank yarn to powerloom sector are 855 million square metre lower compared

Table 3

Estimates of Sector-wise Production of Fabrics derived in this Study and Official Estimates

Cotton and Synthetic Fibre Production of Fabrics (Mn. Sq. Mt)

Year	Mill	Powerloom		Handloom		Hosiery		Total		Cotton Share Total	
	Derived	Derived	Official	Derived	Official	Derived	Official	Derived	Official	Derived	Official
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1983	3604	4840		4545		1001		13989	13137	9331	10130
1988-89	2902	8876	10974	4620	3993	1733	2149	18131	20018	11296	13658
1989-90	2667	10622	11632	3215	3924	1892	2375	18395	20598	11394	13936
1990-91	2589	12502	13348	3173	4295	2148	2696	20412	22928	12390	15431
1991-92	2376	11255	13262	3946	4123	2247	2827	19824	22588	11507	14647
1992-93	2000	14079	14644	2594	5219	2490	3182	21162	25045	12575	16343
1993-94	1990	15957	15994	3174	5851	2885	3637	24006	27472	13551	17790
1994-95	1987	16493	16260	2908	6180	2981	3748	24369	28175	12918	17019
1995-96	1726	19159	17494	3034	7202	3999	5038	27919	31460	15203	18900
1996-97	1666	18785	19643	2990	7456	4353	5533	27794	34298	14068	19841
1997-98	1658	21888	21241	3171	7603	4764	6394	31481	36896	14089	19992
1998-99	1517	21358	20957	2342	6792	4630	6277	29847	35543	12688	17948
1999-00	1457	22589	23444	2391	7352	4690	6374	31127	38627	13229	18989
					Percentage Per Annum Growth Rates						
1990-91 to 99-00	-6.02	8.16	6.56	-2.72	6.72	10.22	11.13	5.59	6.41	1.28	2.87
t statistics	-11.88	8.89	18.45	-1.58	5.68	10.61	12.55	10.12	14.50	1.60	4.13
R²	0.94	0.91	0.97	0.16	0.78	0.93	0.95	0.92	0.96	0.15	0.64

Source: Official data taken from Handbook of Statistics on Cotton Textile Industry. ICMF and other figures are as derived by the author.

to Textile Commissioner's estimates of 23444 million square metres during 1999-2000. The official estimate of production of fabrics in powerloom sector (including non-SSI weaving mills) is estimated on the basis of delivery of yarn and do not include the diversion of hank yarn to powerloom sector.

The production of fabrics in handloom sector is estimated at 2391 million square metres during 1999-2000, which is only 32.5 per cent of the Textile Commissioner's estimates of 7352 million square metre during the same year. The growth rate in case of handloom production of fabrics derived in this study is estimated to be (–) 2.72 per cent during the nineties compared to 6.72 per cent derived from official data during the same period.

IX. SECTOR-WISE PERFORMANCE

The analysis in this study reveals that the powerloom and hosiery sector performed well during nineties and that of handloom and mill sector poorly during the same period. The good performance of hosiery sector is attributed to shift in demand from woven to hosiery fabrics. In the weaving segment, the powerloom sector gained at the cost of both mill and handloom sectors.

This diverse behaviour in performance of various sectors in woven fabrics has been reviewed. Mazumdar (1984) suggests that at identical wages, mills are more efficient than powerlooms. Misra (1993) used somewhat different data set from that of other studies to argue that, in fact, the difference between mill and powerloom favours the mills at pre-tax prices. But when the excise on fabrics is added to mills, the balance tilts in favour of powerlooms because of the alleged tax evasion by them. The powerloom sector avail other benefits as well in the form of evading excise duties, resort to power theft, get long labour hours of work etc.

This view has however been disputed. It is argued that the databases used in these studies are not reliable. This is because these studies have taken data from best practice mills and compared it with the data for average powerlooms. It is also argued that there is no need to take identical wages in different sectors as cost of living in towns where powerloom sector is concentrated is low compared to cities in which mills are located. It has also been pointed out that in actual practice the main benefit like low interest rates on loan and other modernisation subsidies is mainly availed by mill sector on large scale. The powerloom sector does not get these incentives and instead has to borrow money from the moneylenders at very high rate in the absence of getting it from financial institutions. Thus the policies are not always conducive for the powerloom sector (Roy, 1998).

There are several arguments and counter arguments to these facts, but the data from several studies clearly point to the fact that the ex-factory price of production in mill sector is lower compared to powerloom sector. The prime factor affecting the competitiveness of mill sector is the demand of fabrics in smaller lots by small garment units spread all over the country. The reservation of garments for the small-scale sector was one of the main reasons for the small garments units to spread all over the country for catering the demand for domestic segment. The production of fabric in smaller lots is not very conducive for the powerloom sector, especially for units operating with modern technology such as air jet or shuttle less looms, having very high speed. Thus, modernisation could not take place in weaving units except for mills producing denim for exports or super fine verities, which is

demanded in larger lots. The technological progress in mill sector is not taking place due to relatively disadvantageous position of this sector compared to powerloom sector. The technological progress in powerloom sector is not taking place as modernisation in this sector could lead to disqualification from the benefits of SSI sector.

The most significant feature of the New Textile Policy (NTP), 2000 has been dereservation of garment from the small-scale sector. The dereservation of the garment industry will, over time, induce restructuring in the entire textile and clothing industry after the spinning stage. As was expected as a follow-up step after dereservation, the finance bill 2001 introduced MODVAT from the fibre to the garment stage. Subsequently, steps were taken to rationalise, excise duty on grey and dyed fabrics. Under the old rates, the escalating duty on additional value added was discouraging investment in large dyeing units. These were splitting into smaller units and quality was compromised to get advantage of excise benefits meant for smaller units. The high price of better quality dyed fabrics was putting a constraint on the demand for them. The exports of better-dyed products were also suffering, as exports alone are generally not attractive. This was one of the major disincentives for the mill sector to utilise their economies of scale.

Thus irrational excise along with excise evasions, and numerous restrictions imposed in the path of gradual transformation of SSI into the medium and large-scale sector are among the important reasons generally forwarded for the slow technological improvement in weaving segment during twentieth century. Thus the cheap availability of machinery did not lead to capital accumulation in the mill sector. In fact, the powerloom sector and not the mill sector took the maximum advantage of liberalisation. The production share of powerloom fabrics increased at the cost of both mill and handloom sectors.

X. VALUE ADDED IN TEXTILES AND CLOTHING INDUSTRY

Methodology

To work out value added in textile and clothing sector, the estimates of total production of fabrics is divided into its final usage for exports and domestic consumption in the form of hosiery products, fabrics in piece-length, made-ups, garment in piece-length, and garments. This information is not readily available in square metres and is converted using information from various sources as explained in Section V. The textile value added is worked out by using ex-factory price of these items for each sector. The ex-factory prices for these items are estimated from retail price available in Textile Committee household survey data. The Textile Commissioner also provides information for mill sector ex-factory and retail prices. This ratio is applied on Textile Committee data for retail prices to obtain ex-factory price for other items. The value added ratio to the value of output is estimated for textile sector from Annual Survey of Industries (ASI), factory sector data at NIC three-digit level. The same information for these products and garments is available from cost of production data for various items, from the International Textile Manufacturing Federation (ITMF), Zurich.

Methodology adopted by CSO

CSO in its publication 'Source and Methods' published in 1989 estimated value added in textile sector by first calculating value of output by applying sector-wise ex-factory prices on their respective estimates of production of fabrics in square metres. The production of fabrics

in square metre for cotton blended and manmade fabrics were obtained from the reports of the Textile Commissioner and for woollen, acrylic, polyester woollen, pure silk and hosiery were available in the reports of the *Consumption Panel Project*, All India Annual Survey of Textile Committee.

CSO changed this methodology after realising that the Textile Commissioners data on conversion rates of yarn to fabrics are not scientifically worked out. National Sample Survey (NSS) results for unregistered manufacturing for year 1984-85 were used to work out the production and value added in the unregistered sector over time. For the registered manufacturing sector, CSO used ASI results. The estimation of Private Final Consumption Expenditure (PFCE) on textiles and clothing continued to be obtained from Office of the Textile Commissioner. There was inconsistency in the estimates of PFCE and estimates of GDP in textiles and clothing sector. CSO further changed its methodology during 1999 while introducing the new series with base 1993-94. In the new series the PFCE estimates of textile products for unregistered manufacturing in consonance with the GDP estimates, are based on results of ASI, SSI and enterprise survey of unregistered manufacturing.

The methodology adopted by CSO using 1993-94 as base year is discussed in detail. In the present method, the data used for registered sector continues to be of the ASI. The estimates of Gross Value Added (GVA) for the unregistered units belonging to Small Scale Industries group are worked out using the estimates of GVA per worker based on the results of *Second All-India Census on Small Scale Industrial Units*, 1987-88 published by Development Commissioner, Small Scale Industries and the corresponding work force. This GVA per worker is duly inflated for the base year 1993-94 using WPI. The GVA per worker from the 51st round of NSS relating to the year 1994-95 is suitably deflated to the year 1993-94. The estimates of work force for this portion of unregistered manufacturing i.e. for the units neither belonging to ASI nor to SSI, are obtained from the total work force on manufacturing activities subtracting the work force relating to ASI and SSI (non-ASI) segments. In this method, the estimates of GDP from textiles sector get revised downward.

The figures for latter years are then calculated by using IIP for various commodities, which is one of the limitations of CSO methodology. The Textile Commissioner's data on production of fabrics in quantity is one of the main inputs on which IIP for textile sector is based. The limitations of production of fabrics data provided by Textile Commissioner is already discussed in detail. Thus growth rate in CSO methodology could deviate from the actual depending upon the difference in unscientific conversion rates taken by Textile Commissioner and actual conversion rates. As explained earlier, the weighted actual conversion rate goes on changing over time depending upon change in composition in counts, fibres and sectors.

Total Value Added in Textiles and Clothing Sector for the Cotton & Synthetic Products

The share of textiles and clothing in total GDP worked out is 2.52 per cent during 1999-2000 (Table 4). Its share was 2.44 per cent of the GDP during 1990-91. The value added in textiles and clothing sector has grown by 6.1 per cent per annum during 1990-91 to 1999-2000 as against the GDP growth of 6 per cent per annum during the same period. The production of fabrics in quantity terms grew by 5.59 per cent during the same period.

Table 4

Total Value Added in Textiles, Clothing, Cotton and Synthetic Sectors

	Value Added at 1993-94 Prices (Mn. Rs.)					Milk & Readymade Garments Share Derived	CSO estimates of Textile Garments and Tailoring Mn. Rs	Registered Share	Share in GDP at 1993-94 Prices Derived in this Study				
	Cotton	Synthetics	Textiles	Clothing	Total				Cotton	Synthetics	Textiles	Clothing	Total
1983	57563	19710	54828	22445	77273	40.86	85031		1.22	0.42	1.16	0.48	1.64
1988-89	77961	51894	88283	41572	129855	38.55	124574		1.27	0.84	1.44	0.68	2.11
1989-90	80066	57794	92387	45473	137860	34.61	143665		1.22	0.88	1.41	0.69	2.10
1990-91	91652	77671	110402	58921	169323	31.04	156035		1.32	1.12	1.59	0.85	2.44
1991-92	96136	96483	128319	64300	192619	33.28	152929		1.37	1.37	1.83	0.92	2.74
1992-93	108483	88971	113009	84445	197454	37.94	157209		1.47	1.21	1.53	1.14	2.68
1993-94	117018	115328	139562	92784	232346	33.29	231030	32.67	1.50	1.48	1.79	1.19	2.97
1994-95	96845	113069	125244	84670	209914	38.44	239830	31.47	1.16	1.35	1.49	1.01	2.50
1995-96	110487	111483	126822	95148	221970	41.94	235250	26.53	1.23	1.24	1.41	1.06	2.47
1996-97	115628	141976	155376	102228	257604	40.29	273770	23.43	1.19	1.46	1.60	1.05	2.66
1997-98	122445	158955	169405	111995	281400	37.96	279590	22.30	1.20	1.56	1.67	1.10	2.77
1998-99	117335	179437	184253	112519	296772	40.65	266035	40.06	1.08	1.66	1.70	1.04	2.74
1999-00	116405	173502	173527	116380	289907	42.29	286258		1.01	1.51	1.51	1.01	2.52
Percentage Per Annum Growth Rates During 1990-91 to 1999-2000													
Gr. Rt.	2.57	9.14	5.43	7.19	6.06								
t-stat.	3.43	10.38	5.83	7.68	9.49								
R2.	0.55	0.92	0.79	0.87	0.91								

Notes: 1. The values added figures derived in this study at current prices are converted at 1993-94 constant prices by using respective WPI index. The values before 1993-94 are converted to 1993-94 prices using WPI 1980-81 and WPI 1993-94.

2. CSO (NAS) estimates include NIC code 23,24, 26 and part of service activity related to tailoring.

3. The clothing estimates derived in this study include garments and tailoring products.

Source: As derived by the author.

The share of textiles is 1.51 per cent and stitching of ready made and tailoring goods 1.01 per cent of GDP. The total value added in the cotton textile, clothing and tailoring segment account for 1.01 per cent of the GDP and that of synthetic textile, clothing and tailoring segment 1.51 per cent. Thus the share of cotton products is low compared to synthetic products in total textiles and clothing production in the estimates derived in this study.

The results derived in this study are comparable with CSO estimates at aggregate level. The small difference is expected, due to difference in definition of various products. However, there is difference in pattern over time in the estimates derived in this study and CSO estimates, as the CSO estimates over time are based on the IIP, based on production data from Textile Commissioner. The difference could widen over time as Textile Commissioner's data could deviate from actual depending upon the change in share of various sectors, fibres and count composition of yarn used in these sectors.

Explanation for Difference in Sector-wise, Fibre-wise Estimates Derived in this Study and CSO Estimates

As discussed, the results derived in this study are comparable with CSO estimates at aggregate level. The sector-wise, fibre-wise and product stage-wise estimates derived in this study are not comparable with CSO estimates, as there are several definitional and procedural differences in the two methods.

CSO estimates for textile, readymade garments and tailoring (the data for which are available separately) include following as per NIC two-digit classification.

NIC Code Description of Industry

23   Manufacture of Cotton Textiles

24   Manufacture of Wool, Silk and Synthetic Fibre Textiles.

25   Manufacture of Jute, Hemp and Masta Textiles

26   Manufacture of Textile Products

Service activity related to tailoring only

Firstly, the data as per above classification not only include fabrics and related products, but also includes all other textiles and related activities such as ropes, blankets, carpets, coir etc. The results derived in this study, however, include only fabrics and related products, which constitutes major share of textiles and clothing products.

Secondly, the data collected by CSO includes unit in NIC 23, which are dominantly cotton-producing units. Thus all products including non-cotton products of such units are put under the cotton textiles, as a unit could only be classified under one head. The same is true about other NIC classifications. This is a major limitation of CSO data.

In the method adopted in this study, the products covered under cotton textiles include only those products, which are produced from 100 per cent cotton fibre. It is also true about other fibres and sectors. Due to these reasons, the CSO estimates at sub-sector level are quite different from estimates derived in this study. As one to one comparison at sub-sector level is not possible, the CSO estimates are reported at aggregate level only in this study.

XI. EMPLOYMENT

An attempt is made in this study to work out the estimates of employment in textiles and clothing sector. This is important, as estimates of employment provided by Textile Commissioner are not observed but are derived from these estimates of production of fabrics.

The sector-wise estimates of employment in textile and clothing are estimated by applying sector-wise ratio of employment to per unit of fabrics on the sector-wise estimates of fabrics production. The ratio of employment to per unit fabrics is obtained from the information available on the basis of World Bank Survey of a textile town, Mau in Uttar Pradesh undertaken by Mazumdar (1991). The other information such as number of shifts per day each sector works and number of average working days for each sector is obtained from Handloom Census 1987 and experts (associated with various associations) opinion.

It has been derived that on an average 2 adult male equivalent workers are required (one adult male, which is assisted by other family members casually) per loom per 8 hours to produce 11 metre handloom cloth. The working period for handloom sector on an average is 9 months in a year, as handloom weavers do not operate in the rainy seasons. It can work only for one shift per day during the daylight.

In case of powerloom and hosiery sector 1.6 male equivalent workers (one weaver and others) are required per loom to produce 33 metre fabrics per 8 hours shift. This sector works 1.5 shifts on an average per day. Thus, 2.4 adult workers produce on an average 49.5 metre of fabrics in the powerloom and hosiery sectors per day per loom. These fall under unorganised sector. The workers in this sector are employed in case there is need and get one-day off per week on an average in addition to some other holidays. Thus the workers employed in the powerloom sector are utilised on an average 90 per cent.

The information for mill, garments and clothing segments is obtained from other sources. The employment data on mill sector is available from ASI, factory sector, CSO, various issues. The employment estimate for garment and tailoring per unit of fabrics stitched could be obtained by dividing the total labour cost of stitching per unit of fabrics available from Werner International Inc. Management Consultants with data on wage rate in India for the same year from International Textile Manufacturing Federation, Zurich.

These coefficients for various segments are applied on the sector-wise and product-wise estimates of production of fabrics derived in this study to estimate the total employment in textiles and clothing sector. The employment in textile and ready-made garment sector (main) derived this way is estimated at 8.15 million for the year 1993-94 as compared to CSO estimates of 7.30 million during 1993 (NIC 23, 247, 248, 260, 263, 265, 266, 267 & 268) (Table 5). These two estimates are not quite different, but differ widely from the Textile Ministry estimates.

In case the estimates of employment in tailor segment are added, the total main employment generated by textiles and clothing segment adds up to 9.20 million and main and casual add to 12.37 million during 1993-94. These estimates were 10.17 million (main) and 13.14 million (main and casual) respectively during 1999-2000, which are much lower compared to Textile Ministry estimates (Column 12 & 13 of Table 5). For the year 1998-99, the Ministry revised its estimates downward to 17.40 from its earlier estimates of 21.75 million, based on their internal survey. These revised estimates are also much higher compared to 9 million main employment in textiles and garment sector, 10.17 million main

Table 5

Estimates of Employment in Textile and Clothing Sector (Million Equivalent Workers)

Year	Handloom	Powerloom & Hosiery	Mill	Textile (Main Employees)	Ready-made Garment	Text & Ready-made Garment	CSO Estimates of Textiles & Ready-made	Tailoring	Textiles & Clothing (Main)	Textiles & Clothing (Main &	Ministry Estimates*	Ministry Estimates (Revised)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1983	4.54	0.81	1.18	6.53	0.51	7.04		0.98	8.02	12.56	11.18	
1988-89	4.61	1.47	1.1	7.18	0.88	8.06		1.03	9.09	13.69	14.64	
1989-90	3.20	1.72	1.16	6.08	0.93	7.01		1.05	8.06	11.27	15.54	
1990-91	3.17	2.01	1.1	6.28	1.07	7.35		1.17	8.52	11.69	16.49	
1991-92	3.94	1.84	1.06	6.84	1.14	7.98		0.95	8.93	12.87	17.8	
1992-93	2.59	2.25	1.1	5.94	1.21	7.15		0.98	8.13	10.72		
1993-94	3.17	2.54	1	6.71	1.44	8.15	7.3	1.05	9.20	12.37		
1994-95	2.90	2.62	1	6.52	1.52	8.04		1	9.04	11.94		
1995-96	3.03	3.10	1	7.13	1.84	8.97		1.3	10.27	13.29	21.04	
1996-97	2.98	3.08	1.03	7.09	1.91	9.00		1.17	10.17	13.14	21.75	17.97
1997-98	3.16	3.20	1.03	7.39	2.09	9.48		1.49	10.97	14.12		
1998-99	2.33	3.60	1.01	6.94	2.11	9.05		1.3	10.35	12.69		17.40
1999-2000	2.38	3.47	1.04	6.89	2.2	9.09		1.4	10.49	12.87		
						Percentage Per Annum Growth Rates during						
1990/1 to 99/0	-3.27	7.34	-0.66	1.38	8.83	2.79		3.93	2.93	1.47		
t-stat	-2.35	9.66	-1.81	2.41	14.15	5.06		3.26	5.23	2.02		
Rsq.	0.33	0.91	0.20	0.35	0.96	0.73		0.52	0.75	0.25		
1983 to 99-00	-3.96	9.52	-0.79	0.33	9.57	1.61		2.25	1.69	0.15		

Note: # Derived by using Textile Commissioner's data on Sector-wise Production of Fabrics

Ministry estimate of employment is 21.75 million, which is revised downward to 17.97 million for the year 1996-97, based on certain survey results undertaken by the Ministry.

Source: CSO and as derived by the author

employment in textiles, garments and tailoring sector, 13.14 million main and casual employment in textiles, clothing and tailoring sector. The reason for this is obviously related to Textile Ministry (Textile Commissioner's) over estimation of production of fabrics especially in labour intensive handloom sector.

It has been estimated in this study that to produce the same amount of fabric in handloom, powerloom and mill sectors, the employment potential differs quite a lot. Powerloom sector need to employ 2 times the worker employed in the mill sector to produce the same amount of fabric, while handloom sector need to employ 7.5 times for the same amount of fabric production. Moreover, the handloom sector works only 9 months if one takes into account the rainy season stoppages as well. The handloom sector is also not utilised more than 60 per cent, as it remained closed due to various socio-economic factors. These include closures due marriages of relatives and friends and other functions. The number of casual workers employed is large in handloom sector. Due to lack of any technological development in the handloom sector, this sector is not competitive. But this sector employs around 12 to 15 times more workers compared to mill sector and 6 to 7 times more workers compared to powerloom sector to produce the same amount of fabrics. The gap must further be widening with the technology progress in various sectors, as the technology progress in handloom sector is taking place at a slow pace.

The labour intensity of handloom sector emerges more strongly in case the employment per unit value added in various sectors is looked into. It has been estimated that the value added per unit of fabrics in mill sector is 3.16 times and 3.02 times that of powerloom and hosiery sector compared to handloom sector. Thus the employment per Rupee of value added in handloom sector is expected to be 12.5 to 16 times higher at 1999-2000 prices compared to only 2 to 2.5 times in case of powerloom sector.

The estimates of main employment in textiles and clothing sector derived in this study suggest that it grew by only 2.93 per cent per annum, while main and casual by 1.47 per cent during 1990-91 to 1999-2000. This is against the 6.1 per cent per annum growth of value added in textiles and clothing sector. Thus the employment per unit of output has come down though the labour productivity has increased due to shift in production from handloom to powerloom sector during the nineties. Considering the fact that the employment generation in registered manufacturing sector grew at negligible rate despite 7 to 8 per cent growth in value added during nineties, the textiles and clothing sector seems to have not done badly in employment generation. However, looking at the entire period 1983 to 1999-2000, the growth in employment has taken place at a very marginal rate. The growth in employment in textiles and clothing sector including tailor made products is estimated to grow by 0.15 per cent during 1983 to 1999-2000 as against 1.48 per cent per annum during 1990-91 to 1999-2000. These estimates are based on the assumption that additional outputs in a sector generate same amount of employment. However, the labour productivity must have increased in various sectors due to capital deepening and technology progress. The technological progress has taken place in the powerloom sector after mid eighties to take benefit of the export opportunities, while it could not persist for long at the same rate due to fear of losing SSI incentives. Considering the growth in labour productivity in each sector, the actual growth in employment generation would have taken place to a lesser extent. Thus the policies pursued till now have failed to bring the desired technology progress in textiles and clothing sector and the growth in employment in this labour intensive sector has not been to the expected level.

XII. CONCLUSION AND POLICY IMPLICATIONS

There exist several discrepancies in official estimates of production of fabrics both at aggregate and sector levels. This causes further discrepancies in the estimates derived on the basis of official estimates of production of fabrics. The obvious results are mismatch at several stages in the derived results and require corrective measures from time to time. The revised estimates of sector-wise production of fabrics are derived in this study on the basis of count range-wise conversion rates derived for various fibres and sectors. These conversion rates need to be adopted by the Ministry for better results.

The estimates of sector-wise production of fabrics are further revised on the basis of diversion of hank yarn. These estimates indicate that the mill and handloom sector are performing poorly, while the powerloom and hosiery sector are performing well. The most disturbing factor however is the fact that policy till recently failed on account of both technology improvement in mill, powerloom and hosiery sector and employment generation in the handloom and other textile sectors during nineties. The shift in production of fabrics from mill and handloom sector to powerloom sector mainly took place not on quality consideration but on the basis of cost consideration.

The advantage of handloom is linked to certain type of yarn or certain type of loom-woven design, which is more common in made-up varieties. Thus instead of allowing the evasions, it is better to target the sector directly, for which these are meant. These include creating handloom parks, marketing products, developing research activities in areas like better printing design etc. The implementation of these packages requires help from government in the form of cheap loan for modernisation, training help etc, but also require initiative from respective organisations. The development of database for specific sectors and products is essential to make such programmes more successful. This study has a made a beginning in that direction.

Acknowledgments

Notes

1. Infact, National Council of Applied Economic Research (NCAER) has conducted a detailed census on handloom and powerloom sector. The results from handloom census are expected to be much lower than the estimates of production of fabrics published by Textile Commissioner in compendium of statistics.

2. There is some difference in the reed and picks used to produce fabrics in handloom compared to powerloom sector. The difference in reeds and picks would not make much difference in the total estimates of production of fabrics and is thus not considered for conversion rates on the hank yarn being diverted

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Annexture

Statement 1
Count Range-wise and Sector-wise Fabrics Weight and its Conversion Rates for Cotton Fabrics

CountRange	Mill Sector		Powerloom Sector		Handloom Sector	
	Gms/Sq. Mt.	Conversion Rate	Gms/Sq. Mt.	Conversion Rate	Gms/Sq. Mt.	Conversion Rate
0-10s	244.94	4.08	222.68	4.49	213.00	4.69
11-20s	176.00	5.68	149.33	6.70	142.69	7.01
21-30s	120.50	8.30	119.79	9.48	114.09	9.93
31-40s	110.00	9.09	109.52	9.78	104.31	10.24
41-60s	73.75	13.56	69.75	14.34	66.58	15.02
61-80s	51.94	19.25	49.47	20.21	47.22	21.18
>80s	78.44	12.75	78.44	12.75	74.87	13.36

Source: Derived by the author.

Statement 2
Various Sectors Share and Weighted Conversion Rates for Cotton Fabrics

Sectors	Conversion Rate (Sq. Mts/Kg)					Share of Various Sectors in Total Production of Cotton Fabrics				
	1983	1990-91	1991-92	1996-97	1999-2000	1983	1990-91	1991-92	1996-97	1999-2000
Mill	7.64	7.50	7.47	7.05	7.05	2785	1859	1651	1193	1067
Powerloom and Handloom	9.55	9.59	9.35	8.24	7.98	5665	8613	7872	9088	8176
Hosiery	9.62	9.74	9.68	9.52	9.47	881	1918	1984	3788	3986
Decentralised sector	9.56	9.62	9.41	8.58	8.42	6546	10531	9856	12876	12162
Total	8.89	9.23	9.07	8.42	8.29	9331	12390	11507	14069	13229
Official conversion rate for Decentralised sector	10.00*	12.40	12.40	12.40	12.40					

*Linear metres per

Source: As derived by the author.

Statement 3
Conversion Rates for Various Blended Fabrics

Year	Cotton Viscose	Cotton Polyester	Cotton & Other	Polyester Viscose (Sq. Mts/Kg)	PVC Total	Others	Blended	Production of Mn. Sq. Mt	
								Derived	Official
1983	13.56	13.74	11.55	10.51	11.51	10.06	11.97	1683	1265
1990-91	13.03	13.07	11.96	10.51	12.48	10.12	11.51	2312	2371
1991-92	12.34	13.44	10.90	10.79	12.82	9.94	11.74	2614	2712
1996-97	9.25	12.69	8.63	9.90	9.97	9.39	10.59	4658	4888
1999-2000	9.36	11.41	8.41	9.48	10.36	10.31	10.04	6292	5913
Official Conversion Rate	12.90	12.90	12.90	12.90	12.90	12.90	12.90		

Source: As derived by the author.

Statement 4
Conversion Rates for 100 % Non-cotton Spun Fabrics

Year	Viscose Fabrics	Polyester Fabrics	Acrylic Fabrics	Other Fabrics	100% Spun	Production of Fabrics
			Sq.Mts/Kg			Mn. Sq. Mts
1983	8.89	21.54	9.93	9.62	9.40	709
1990-91	8.78	21.45	10.36	9.38	9.76	1007
1991-92	8.88	20.51	10.31	9.62	10.14	1095
1996-97	8.79	19.86	10.12	9.53	11.73	1586
1999-2000	8.73	17.58	9.51	9.68	12.96	2894
Official Conversion Rate	12.90	12.90	12.90	12.90	12.90	

Source: As derived by the author.

Statement 5
Conversion Rate for Various Filament Yarn

(Sq.Mts/Kg)

Year	Nylon	Polyester	Viscose	Total
1991-92	34.54	14.05	11.65	15.79
1996-97	33.47	11.80	11.43	13.16
1999-2000	38.63	12.02	11.09	12.90
Official Conversion rate	31.00	14.50	16.00	

Sources: As derived by the author.