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Trade, Restructuring and Labour: A Study of the Textile and Apparel Industry in India[†]

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Abstract

This paper investigates the impact of trade liberalisation and industrial restructuring on labour in India's textile and apparel industry. India has liberalised its trade policy and industrial regulations since 1991. This reform process has had industry-specific features that are often overlooked. They are particularly striking as in the case the textile and apparel industry. This industry, by its sheer size, in terms of employment, had always occupied an important place in the state policy that shaped its structure and in turn its performance over the years. What are the salient features of reform policies with respect to the textile and apparel industry? What are the features of the 'restructuring' that has taken place in the reform years? How this restructuring has impacted the local labour markets? What types of jobs have been created? Which segment of the textiles and apparel industry have prospered and benefited workers at the same time?

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1 Introduction

Whether the greater opportunity to participate in global trade will benefit unskilled workers is a controversial question in India and elsewhere. Industry specific studies assume importance as the costs and benefits of trade participation often depends on the structural features of the given industry. Several papers have examined the impact of quota removal on the competitiveness of India's textile and apparel industry (Tiwari 2005a and Tiwari 2005b). However the impact on the labour market has not received much attention. This paper attempts to fill this gap by undertaking a detailed examination of employment and wages in textile and apparel industry (T&A) in India. The scope of global market access in textiles and apparels industry has enlarged with the elimination of all remaining quotas on textile and apparel on 1 January 2005. The stage-wise integration of the textiles and apparels, that was back loaded, has been completed. Imports of T&A in the United States, the European Union and Japan are now subject only to system of national tariffs and the buyers in these countries are largely free to source textiles and apparel in any amount from any country. The special safeguard mechanism, included in United States-China agreement on China's World Trade Organization (WTO) accession, aimed to prevent a surge of imports from China will remain in effect until 31 December 2008 (Dayaratna-Banda and Whalley,2007).Correspondingly, the suppliers are supposedly free to export any quantity depending on their production capability. India is one of the countries predicted to be one of the leading gainers of this change in the rules of world trade in textiles and garments (Nordas [WTO] 2004). T&A in India employs a large proportion of its industrial workers. India liberalised its trade regime in 1991 and at the same time reformed industrial regulatory policies. However India's domestic regulatory policies towards the T&A industry had it own specific features. This is an outcome of the regulatory regime starting with the Cotton Textiles (Control) order introduced in 1948. This domestic policy also underwent slow changes later first in 1985 and then in 1999 as reflected in official textile policy. What has been the impact of this policy regime change on India's T&A industry? What are the salient features of the industrial restructuring that has taken place in response to liberalisation of trade and domestic industrial regulatory policies? How has it impacted the labour in terms of employment and wages in the T&A industry? This is the main focus of this paper.

Including this introduction, this paper is divided into five sections. In Section 1.2 we first set out the broad changes in India's trade and industrial policies with particular reference to T&A. This is followed by a description of trends in India's export performance in the T&A industry in Section 2. Then we discuss the salient features of restructuring the T&A industry in Section 3. The main features of upgrading that has been taking place are discussed. Section 4 contains a discussion of labour market outcomes. Section 5 provides some concluding observations.

1.2 Trade Liberalisation and Restructuring of T&A Industry

India undertook far-reaching trade liberalisation beginning in the year 1991. The simple mean tariff was reduced to 30 percent in 2001 from 80 percent in 1990.The share of products subject to quantitative restrictions decreased from 87 percent in 1987/88 to 45 percent 94/95. However, 95 percent of the tariff lines were freed from non-tariff barriers in 2001. This facilitated access to imported intermediates used in goods produced for exports. In the 1990s export as well as import of goods and services increased indicating India's integration with the world economy. India's speed of global integration has accelerated in recent years. This is indicated by the trade to gross domestic product (GDP) ratio shown in Figure 1.

Figure 1: Trade in goods and services to GDP ratio: India



The trade and industrial policy reforms of the 1990s had two important effects on the T&A industry. First, it intensified the pressure for reforms in the T&A industry. The government responded by initiating the new textiles policy in 2000. Secondly, it facilitated the expansion and restructuring of the T&A industry through access to international intermediate inputs, raw-material and machinery, and scale expansion. This has set in motion a process of deeper restructuring of the T&A industry in India. This is elaborated in the following paragraphs.

1.3 T&A Industry: Reforming Domestic Policy Regime

The current structure of the T&A industry evolved over the years largely in response to domestic policy regime that provided differential incentives and regulatory controls over the years (See Roy (2005); Roy (2004) and Chandra (2006) for details). The T&A industry composition is made up of four main activities, namely, spinning, weaving, (including knitting), fabric processing and apparel-making units (factories). In spinning and weaving three segments are distinguished: the handloom, powerloom, and the mill sector. The mill segment has mills that undertake integrated production of cloth (spinning, weaving and processing) and stand alone units doing only spinning or weaving. The handloom and powerloom units are producers of cloth in a disintegrated fashion. They depend on other firms for yarn and processing. They constitute the small-scale segment of the textiles industry. The apparel making segment has a wide range of factory types that includes large formal sector factories, small-scale units but functioning within the formal sector and a huge number of small-scale tailoring units functioning in the informal sector. It is important to recognise the differences in terms of technology between textile and apparel production. Textile industry is characterised by technological heterogeneity and greater product variety. The spinning units are technologically more advanced, capital intensive and enjoy clear economies of scale. Weaving uses three distinctive technologies, namely, handloom, powerloom and knitting machines. Weaving activity is largely scale-neutral and the large-scale composite mills that used to perform weaving, using powerlooms, have lost out to

small-scale powerlooms partly because of the absence of significant scale economies (Roy 2004). Spinning and Weaving industries have experienced continuous technological improvement (automation) in western economies in order to fight increasing labour costs. In spinning and weaving, technology is also a function of product quality. Production of higher quality of cloth using integrated processes of spinning and weaving can result in economies of scale and scope. Technological upgrading in textile production could be capital intensive and has greater scope for automation (Chakravarty, 2002). In contrast, technology of garment making is scale neutral and large garment factories are essentially scaled-up versions of tailoring establishments. Scale upgrading in apparel manufacturing units is not expected to reduce labour intensity of production and labour demand.

Pre-Reform Growth 1985-1990

The remarkable export growth of T&A began much early and well-before India liberalised its trade regime. India's apparel exports had clocked an annual average compound growth rate of 19 percent between 1985 and 1990 (see Table 4). The year 1985 was also the year in which significant reform of the textiles policy took place following the announcement of the new textiles policy. The new textiles policy of 1985 relaxed a number of restrictions on capacity expansion, liberalised import of textile machinery, provide export subsidies and credit through technology modernisation fund. The exchange rate policy was also favourable with the rupee depreciation against the dollar between 1982 and 1989. An additional helpful factor was that world trade in textiles and apparel recovered in the period 1985-90 to grow at more than 15 percent per annum relative to the negative growth recorded during 1980-85. However, several other distortions remained unchanged. They are discriminatory excise and custom duties against the man-made textiles, hank yarn obligation for the spinning mills and reservation of garments both woven and knit for small-scale industries under the small-scale industries (SSI) reservation policy. The latter one effectively ruled out entry of new players into the industry and foreign direct investment (FDI).

Trade and Industrial reform in the 1990s

The trade policy reform in the 1990s has resulted in the gradual lowering of customs duties in each of the budgets presented from 1991 onwards. A number of changes were also made to simplify the system - reduction in inter-product variations and rationalisation of the tariff structure. The effective rate of protection in product categories relevant to the T&A industry is shown in Table 1. Cotton imports were liberalised in 1991 by terminating the import monopoly of the Cotton Corporation of India and imports were placed under Open General License (OGL). The removal of quantitative restrictions has enabled access to high quality cotton, man-made intermediates, fibres, and yarns for the Indian manufacturers.

Description	Phase-I 1980-85	Phase-II 1986-90	Phase-3 1991-95	Phase 4 1996-00
Cotton Textiles	109.7	125.4	68.4	42.9
Synthetic Fibres	173.1	157.7	78.7	40.6
Food & Textiles Machinery	48.6	59.7	37.7	29.3
Apparel	138.3	149.8	98.4	54.2

Source: Extracted from Table 4 in Deb Kusum Das (2003).

Financing Modernisation

The government responded to the need for modernisation of the textiles industry by initiating the Technology Upgradation Fund (TUF) in 1999. In simplified terms the TUF provided subsidised low-interest loans, for example at 6 percent as compared to the ruling market rate of 12 percent. More elaborately, TUF provided 5 percent interest reimbursement of the normal interest charged by the lending agency on rupee term loan (RTL); or coverage of 5 percent exchange fluctuation (interest & repayment) from the base rate on foreign currency loan (FCL); or 15 percent credit linked capital subsidy for SSI textile and jute sector; or 20 percent credit linked capital subsidy for power-loom sector; or 5 percent interest reimbursement plus 10 percent capital subsidy for specified processing machinery. Between 1999 and 2007 about US\$6.5 billion have been disbursed under the TUF scheme and nearly 70 percent of this total disbursement has gone to the spinning and weaving sector.

Reduction of Entry Barriers for large Firms and FDI

India is well known for its protection of small-scale enterprises by prohibiting entry of large scale firms into many product lines. This set of products accumulated over the years and contained more than 1200 products at the beginning of reform year in 1991. This is called the list of products reserved for exclusive manufacture by small-scale industries. Periodic industry specific deletions to this list took place in the 1990s. However, it should be noted that SSI reservation for woven garments was removed in 2001 and included the woven segments. The knitted segment was reserved only in the year 2004. This belated liberalisation delayed the entry of large firms into the apparel sector. The entry of new units were permitted if the new units exported 75 percent (reduced to 50 percent later) of their output. FDI into the industry was also correspondingly restricted due to the product reservation policy. That is by implication FDI is not permitted in product lines reserved for SSI. The FDI policy in the nineties also permitted foreign ownership (100 percent) for units that would be set up in the special economic zones. The government removed the 49 percent cap on foreign ownership of firms in the weaving sector in 2001. The 24 percent cap on FDI in the apparel sector continues to restrict the flow of FDI into the apparel industry. Since 1991, T&A has accounted for only 1 percent of FDI inflow in India. Upgrading in the SSI sector was also facilitated by the raising of the investment limit for SSI firms to Rupees 30 million from Rupees 10 million in the 1990s.

Fiscal Reform

India has used discriminatory excise duties to discourage the consumption of synthetic and blended fabrics. The excise duty difference between cotton and synthetic fabrics used to be more than 10 to 20 percent in the 1980s and much more varied and complex in the case of yarns (cotton yarn had zero duty while polyester filament yarn producer had to pay 80 percent to give an extreme example). The excise duty difference was brought down to zero in the year 2000-01. The fiscal reform in India was facilitated by the introduction of central value added tax in 1999-2000. The excise duty exemption for SSI producers up to certain sales turnover in T&A continued in various forms. In general the policy effort is to set a more level playing field for different types of producers in textile industry.

2 Textile and Apparel Exports

2.1 Main features of India's T&A Exports

The export performance of India's apparel sector, beginning in the late 1980s, is well documented (Chatterjee and Mohan, 1993, Ramaswamy and Gereffi 1998 and Tiwari 2005, among others). We focus on both Textiles and Apparels and summarise the main features. In 2005-06, the value of India's total T&A exports is US\$17 billion (Economic Survey, GOI, 2006-07). It was just US\$4,711 million in 1990 (see Table 2). Textiles exports constitute more than 20 percent of India's exports of manufactures. India's share in world exports of textiles and apparels has stagnated since 2000 at around 4 percent and 3 percent respectively. India is world's sixth leading exporter of textiles, and in apparels India is the third leading exporter next only to the European Union, China and Turkey. In the post-quota era textiles exports have registered strong growth, increasing from US\$14.03 billion in 2004-05 to US\$17.08 billion in 2005-06, recording a growth of 21.7 percent (Annual Report, Ministry of Textiles, 2006-07).

Value in US\$ Millions				
	1990	1995	2000	2005
Textiles	2180	4358	5998	7850
Share in World Exports	2.1	2.9	3.8	3.9
Apparel	2530	4110	6178	8290
Share in World Exports	2.3	2.6	3.1	3.0
Total	4711	8471	12180	16144

Source: WTO International Trade Statistics, Various Years

Figure 2: Growth rates in Textile Exports: India and the World



The trend in the world demand of Textiles and Apparel is the key determinant of India's T&A exports. This follows from the growth rate of world exports and India since 1980 as shown in Figure 2 (Textile) and Figure 3 (Apparel) respectively. India's exports closely follow the world trend. This is further supported by the estimates of growth rates for different time periods for India and the world (see Table 3). In a preliminary exercise a highly positive association is found between India and world exports of textile and apparel¹.

Figure 3: Growth rate of Apparel Exports: India and World



What were the facilitating factors that aided this transformation? First India has been well endowed with extensive fibre base in cotton and modest MMF production capacities. India is the third largest global producer of cotton yarn, and the fifth largest producer of synthetic fibre and second largest producer of silk next only to China (Annual Report 2006-07, Ministry of Textiles). Secondly, the policy initiatives of the 1990s that improved access to international inputs (raw-materials and accessories), machinery at international prices and credit for investment helped modernisation.

Table 3: Growth rate of India's Exports of Textile and Apparel

Period	Textile Exports: India	Textile Exports: World	Apparel Exports: India	Apparel Exports: World
1980-85	-1.1	0.6	8.7	4.9
1986-90	19.4	15.5	24.5	18.8
1991	16.3	3.7	2.5	8.6
1992	15.9	9.6	3.1	15.6
1993-1997	16.1	8.7	10.4	8.9
1998-2001	6.3	-0.5	5.5	2.4
2002-2006	9.9	4.7	14.7	7.1

Source: Average of Y-o-Y change estimated Using COMTRADE-WITS

3 Restructuring of T&A Industry: Main Features

The weakest links in India's T&A supply chain are the fabric weaving and finishing sectors as they use outdated technology. Firms, both large and small, in the textile and apparel sectors are rapidly restructuring to face global competition. Some large textile firms have integrated forward to become suppliers to global buyers (Century Textiles, Raymonds and Siyaram to name a few) and some apparel firms have integrated backward to ensure quality fabric (The Shirt Company, Mumbai). Global buyers have induced some of the suppliers (Gokuldas Images, Bangalore in South India) to set up dedicated facilities exclusively manufacturing their orders. The inducement for firm restructuring is initiated by the processes of global textile trade liberalisation and global buyers looking to India as an outsourcing base. Global lead buyers in the T&A industry have acted as focusing devices in India calling attention to the upgrading requirements of full package supply. This requires investment in new equipment and machinery. So we turn to capital formation textiles and apparel.

3.1 Investment and Scale Upgrading and Technology

In Figure 4, we present the percentage growth rate of Gross Fixed Capital Formation (GFCF) since 1980 using the nominal GFCF in textile and apparel. One clearly observes the acceleration since 1990s and after 2001. The fall in the year 1997 is due to recessionary conditions that prevailed in the economy. An alternative approach is to estimate the share of GFCF in Gross Value Added (GVA). This is a good indicator of investment effort by firms in the T&A industry. It measures the percentage devoted to capital formation out of GVA. This series is shown in Figure 5.

Figure 4: Gross fixed capital formation (GFCF) in textiles and apparel

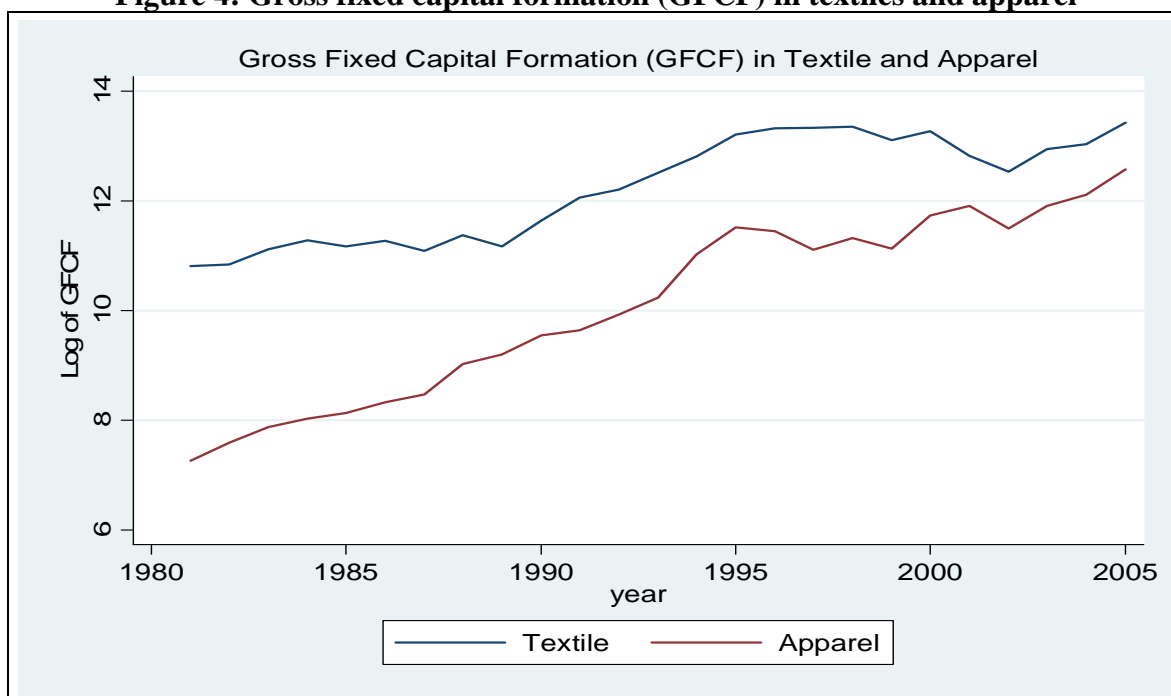
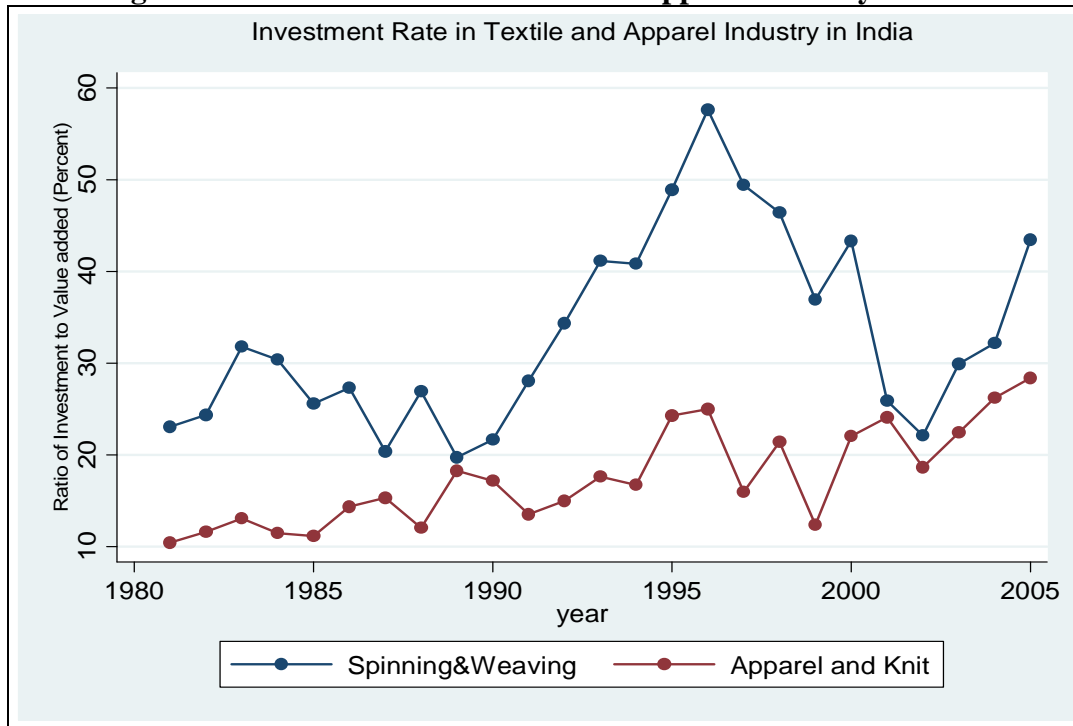


Figure 5: Investment rate in textile and apparel industry in India



3.2 Technology Upgrading

Spinning sector is considered to be the more technologically advanced sector in the Indian textile industry. It is claimed that nearly 55 percent of investment in technology upgrading investment in the last decade has taken place in the spinning sector (Chandra 2007). Most of the rapid growth has taken place in the production of 100-percent manmade yarns and blended yarns suggesting higher product quality. Similarly, in the case of fabric or cloth production, the output of 100-percent manmade and blended cloth has grown much faster compared to that of traditional cotton cloth. The weaving mills upgraded by investing in shuttle-less looms (see Table 4). The 1990s also witnessed upgrading by powerlooms (perhaps in the formal sector) by using automatic and shuttle less looms (see Table 5).

Country	1998			2005		
	Total Looms	Shuttle-less	Share percent	Total Looms	Shuttle-less	Share percent
India, total**	1726590	10170	0.6	1983974	45442	2.3
Composite Mills	123590	7170	5.8	NA	NA	NA
Mexico	49500	14500	29.3	50854	14704	28.9
Brazil	133400	35200	26.4	81257	41257	50.8
China	733300	45800	6.2	1163762	263503	22.6
Pakistan	221300	13200	6.0	500925	25925	5.2
Indonesia	227000	27000	11.9	260255	29255	11.2
Taiwan	23090	20050	86.8	51600	31826	61.7
Thailand	55000	10000	18.2	179816	55216	30.7

Source: USITC (2001) and Ministry of Textiles (2006)

Loom Type	2001-02	2002-03	2003-04	2004-05	2005-06	Total
Semi-Automatic	483	14994	4732	3161	2298	25668
Automatic	1230	1916	1193	1912	2466	8717
Shuttle less	1923	3595	3639	3809	4165	17131
Total	3636	20505	9564	8882	8929	51516

Source: Ministry of Textiles: Annual Report 2005-06

3.3 Size Structure and Scale Upgrading in the Formal Sector

The Indian manufacturing sector is well-known to suffer from the problem of the missing middle. That is that the firm size distribution is characterised by a large number of small firms and a small number of very large firms. The absence of medium-size enterprises (say firms with 200 to 1000 workers) seems to be getting corrected in recent years as evident from Table 6. At present, 70 percent of workers in the formal segment of the apparel sector are working in factories with more than 200 workers. The upsizing in the apparel sector is due to the entry of large plants and scaling-up of existing small-scale factories. Downsizing in the textile industry clearly shows up in the reduction of employment share of large textile mills with more than 1000 workers. This is consistent with the closure of mills in the textile industry as shown in Table 7.

Size-Class	Textiles- 1994-95	Textiles: 2003-04	Apparel: 1994-95	Apparel: 2003-04
50 or Less	10.9	12.2	19.6	8.5
51 to 100	8.5	7.9	16.8	8
101 to 200	7.8	10.1	22.4	13
201 to 500	14.5	19.6	28.4	27.6
501 to 1000	18.4	15.5	9.5	20
1000 and above	39.8	34.9	3.3	22.9
All	100	100	100	100

Source: Annual Survey of Industries 1994-95 and 2003-04

Table 7: Closure of Cotton Textile/Man-Made Fibre Mills in India		
Year*	No .of Mills	Employees on Roll ('000)
1980	17	26
1981	37	78
1982	28	32
1983	63	94
1984	77	991
1985	78	107
1986	84	108
1990-91	105	145
1991-92	130	184
1992-93	123	178
1993-94	132	173
1994-95	132	178
1995-96	171	228
1996-97	209	252
1997-98	220	260
1998-99	313	311
1999-00	240	334
2000-01	262	344
2001-02	295	362
2002-03	349	390
2003-04	374	329
2004-05	376	335
2005-06	387	339
* For the period 1980 to 1986 the data refers to the year ending December 30. Source: Government of India, Ministry of Textiles, Annual Report 1986, 1998-99 and 2006-07. Data for 1990-91 and 1991-92 is based on www.Indiastat.com		

4 Labour Market Outcomes: Employment and Wages

The labour market outcomes need to be discussed separately for the total sector and the formal sector (registered sector in Indian parlance). The formal sector is perceived to represent 'good jobs' created as the factory and labour laws define certain labour standard for the factories in this sector and are subject to state monitoring. Time series data is available for the formal sector based on the annual surveys of manufacturing. Total sector numbers are based on quinquennial household surveys carried out by the National Sample Survey Organization (NSSO). They are called employment and unemployment surveys (EUS). The estimates for the T&A industry are based on EUS results for the years 1993-94, 1999-2000 and 2004-05 (NSSO 1997, NSSO 2001 and NSSO 2006). Our estimates are shown in Table 8.

The following comments are in order:

- The T&A industry provides employment to more than 17 million workers and its share in total manufacturing is 32 percent in 2004-05. Over the period 1993 to 2004 Indian manufacturing added 12 million workers (Ramaswamy, 2007). Of this nearly 7 million came from the T&A industry (58 percent of the additional jobs). In others

words, the T&A industry has led the recovery of manufacturing employment in India in the first five years of the 21st century.

- The three groups in particular, namely, Other Textiles² , Apparel and Knit articles in particular have registered a high rate of employment growth of 8.8, 22.2 and 23.1 percent respectively in the years between 1999 and 2004.
- The absolute level of employment in Spinning and Weaving has regained its 1993-94 level in 2004. This is impressive considering the intensity of change and employment loss due to closure of mills in the private and public sector noted above. The loss in employment in the large-scale-mill sector is offset by employment growth in the SSI sector that consists of both SSI mills and powerlooms. The relative growth of cloth production in the mill sector and the powerlooms (see Figure 6) support this proposition.

Figure 6: Production of cloth in India: Mill versus powerloom

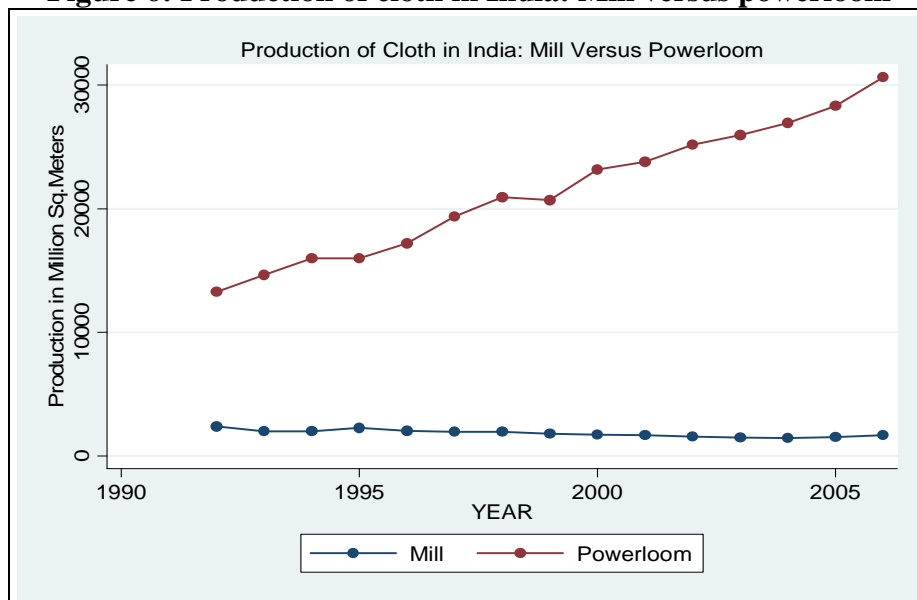


Figure 7: Employment in textiles and apparel formal sector



Table 8: Employment Growth in Textile and Apparel in India: 1993-2004

	1993-94	1999-00	1993-94 to 1999-00		1999-00	2004-05	1999-00 to 2004-05		1993-94 to 2004-05
Description	Millions		Growth Rate	Absolute change	Millions		Growth Rate	Absolute change	Growth Rate
Spinning, Weaving & Finishing of Textiles.	5.95	5.20	-2.2	-0.7	5.20	5.97	2.8	0.8	0.03
Other Textiles	2.00	2.45	3.5	0.5	2.45	3.7	8.8	1.3	6.5
Knit Articles	0.28	0.17	-8.1	-0.1	0.17	0.46	22.2	0.3	5.1
Wearing Apparel	4.73	2.64	-9.2	-2.1	2.64	7.5	23.1	4.8	4.7

Source: NSSO Employment and Unemployment Surveys, 1993-94, 1999-00 and 2004-05

Formal Sector

An analysis of growth trends in employment and real wages in the formal sector is carried out for the period 1981-82 to 2004-05. It is useful to divide the entire period into two sub-periods, i.e., 1981-82 to 1991-92 (period I) and 1992-93 to 2004-05 (period II).

These two sub-periods broadly conform to years of pre-trade and post-trade reform years. However, this is not to be construed as a test of trade liberalisation as our description of reforms in Section 2 showed liberalisation of the T&A industry began in 1985. We have used this division based purely on the observation of jumps in employment time-series in three industry groups, i.e., National Industrial Classification (NIC) codes 172, 173 and 181 in the year 1992-93 (Not shown here to save space). Further, we have aggregated the three industry groups, namely, Other Textiles (NIC-172), Knit Products (NIC-173) and Apparel Woven (NIC-181) into one category calling it Apparel. This is more convenient for two reasons. First, the group 'Other Textiles' consists of textile products such as made-ups, furnishings, towels etc and not textile inputs such as yarn and fabric. Second, Knit products group essentially produces Knitted garments and articles. Growth rates for the three constituting industries are shown only in the case of employment and real wages. Textile industry refers to the Spinning, Weaving and Finishing Textiles (171) segment in our discussion. Finishing forms a small segment of the total formal textile sector. Finishing processes are mainly done in the informal sector. The trend in the aggregate employment in T&A is shown in Figure 7. The growth of nominal wages and real wages are shown in Figures 7 and 8 respectively. The estimates of growth rates of employment and real wages are presented in Table 9.

Figure 7: Nominal wages in textiles and apparel: 1982-2005

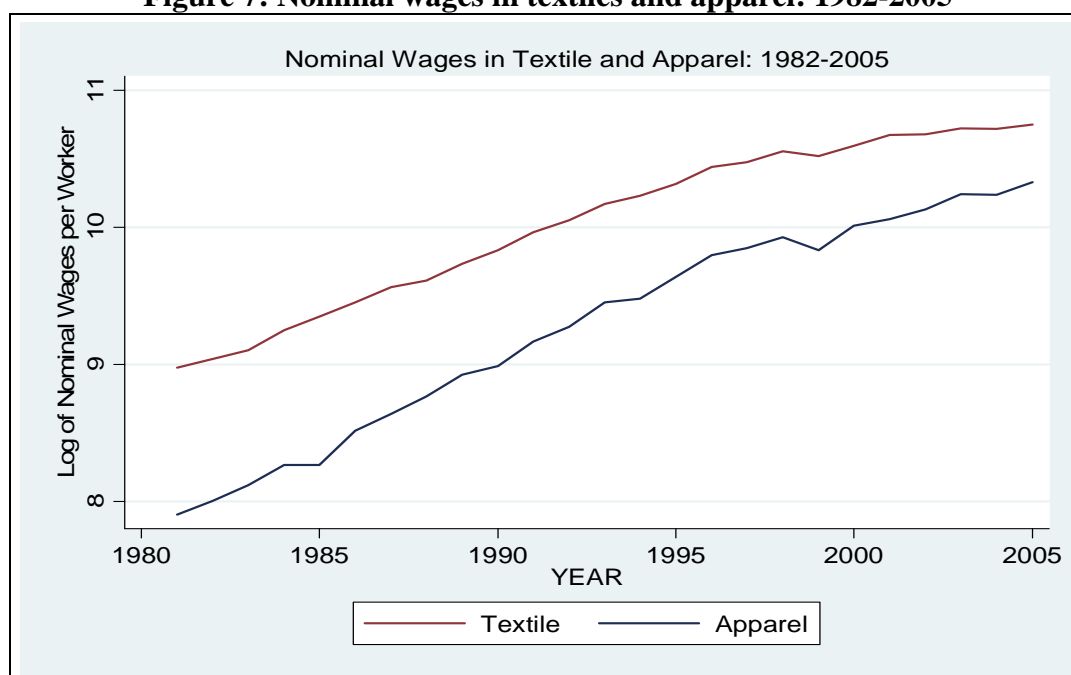
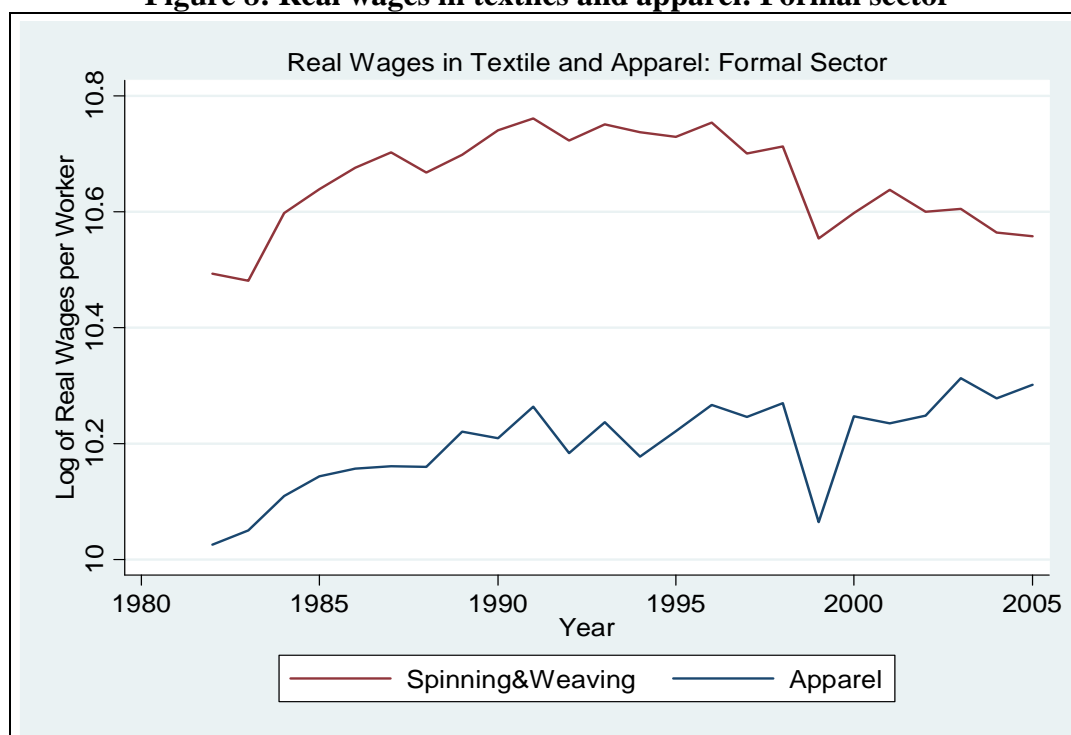


Figure 8: Real wages in textiles and apparel: Formal sector



Industry (NIC-98 code)	Employment		Real Wages**	
	1981-1990	1993-2005	1981-1990	1993-2005
Spinning & Weaving (171)	-1.0	-4.3	2.6	-1.8
Other Textile Products (172)	-0.7	10.3	2.3	-1.1
Knit Articles (173)	7.7	11.3	3.4	-0.8
Apparel (181)	10.2	7.0	2.7	1.4
Apparel *	6.9	8.3	1.9	0.6

Note: Growth Rates based on semi-logarithmic regressions
 *Defined as the aggregate of industry groups 172,173 and 181
 **Estimated using the Consumer Price Index for Industrial Workers (CPIW) with the base 1999-2000.
 Source: Annual Survey of Industries, EPW data base Volume-II

The following points emerge based on estimates in Table 9.

- The fall in employment in textile industry accelerated in period-II. This is consistent with the sharp rise in the closure of factories in the 1990s (see Table 7). Using disaggregated we found that nearly 200,000 workers lost their jobs between 1998-99 and 2003-04 in the textile mill sector (NIC Code 1711 that includes only Spinning and Weaving in mills). Growth rate of real wages of workers have decelerated in period-II.
- Apparel industry recorded high rate of employment growth in period II. Textile products like made-ups and knit products register more than 10 percent growth in employment. Very interestingly, disaggregated data at 4-digit level showed that

between 1998-99 and 2003-04 more than 200,000 workers were absorbed in textile products that include made-ups, apparel-woven and apparel-knit. This effectively offsets the loss of jobs in the mill sector noted above. The growth rate of real wages in apparel industry has slowed down perceptibly in period II. This is to be expected given the relatively high rates of growth of real wages in period I. Apparel-woven industry experienced positive growth of real wages in period II. However real wages in the Apparel-Knit industry has declined relatively sharply. This is perhaps explained by the increasing employment of women whose wage rates were less than men. We observed a rapid rise in the employment of female workers in Apparel-Knit between 1999-2000 and 2003-04 (annual average of more than 25 percent). This is in contrast to Apparel-Woven industry where the rate of growth of female workers was only 4.3 percent.

The measured total number of workers in a factory is a sum of two types of workers: (i) Regular workers (ii) Workers hired through contractors. Regular workers are those directly hired by the firm and get the specified social security benefits. They are subject to retrenchment and compensation regulations under the Industrial Disputes Act 1947 (IDA Section 5B). Contract workers are those hired through contractors (or contract worker supplier firm/agency). They are outside the purview of IDA as they are not on the muster roll of the factory. Their employment and working conditions are governed by another act called 'The Contract Labor (Regulation and Abolition) Act 1970' (CLRA 1970). This act is applicable to all establishments employing more than 20 contract workers in the preceding 12 months. It is widely known that wage rate for contract labor is much lower than that for regular workers. Consequently, the wage bill of the factory declines as the proportion of contract workers rises in the total workforce. The growth in the number of contract workers and contract intensity is a measure of the quality (poor quality) of employment generated in an industry (Contractualisation). Our estimates of employment growth in different worker categories and contract intensity are presented in Table 10.

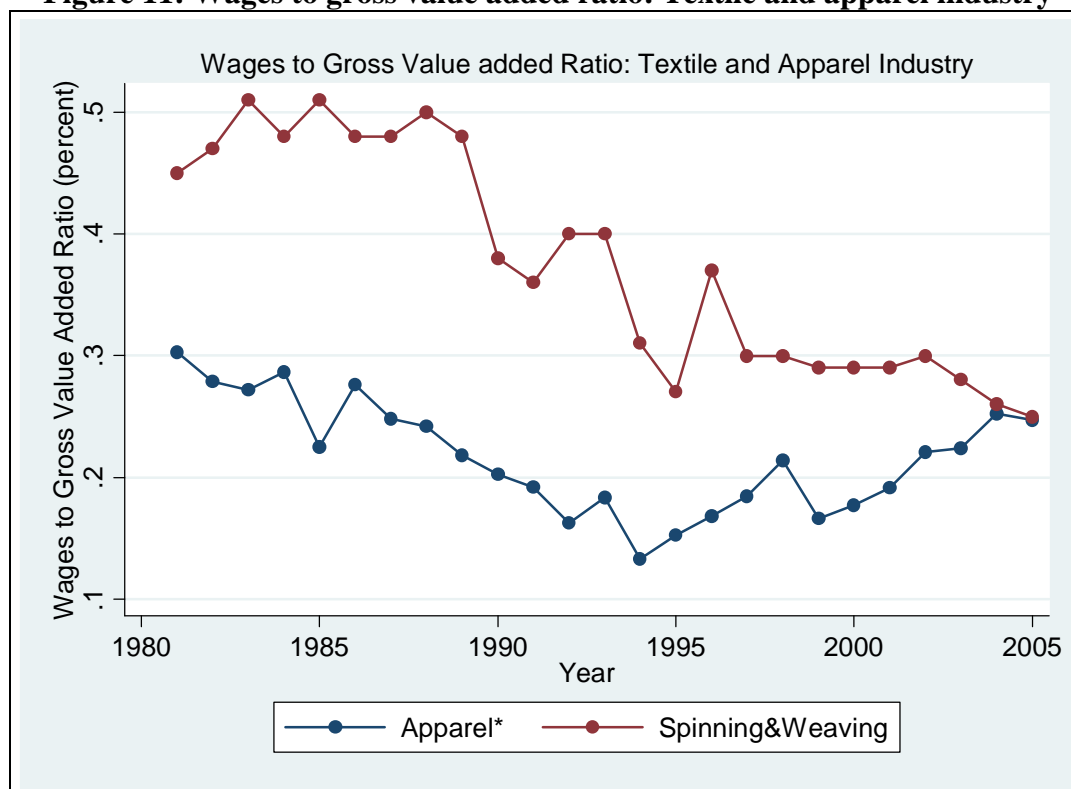
A surprising result emerges. Notice that in textile the number of direct workers has declined while the number of contract workers shows positive growth. This is a clear indication of workforce restructuring in textile. Perhaps those who were regular workers became contract workers in a number of cases in addition to new hires as contract workers in the textile industry. Contract intensity has gone up by three percentage points in a short period of 6 years. Apparel industry in contrast has created employment for both direct and contract workers. Contract employment has grown rapidly in apparel (18 percent). This perhaps explains the slower growth rate of real wages in the formal apparel sector (see Table 9) in the years of high employment growth. Outsourcing of labour through contract labour supplier firms is an important source of flexibility for apparel firms subject to greater market uncertainty under globalisation. This is more so for Indian apparel firms specialising in the fashion and seasonal apparel segments.

What is happening to the income share of labour in T&A during the years of greater global market participation? The share of wages in value added is an index of labour bargaining power. It is found to decline in the second half of the 1980s (see Figure 6). In textile labour share fluctuates in the first-half of 1980s as it was a phase of changing trade union structure and turmoil in union-management relations in the organised industry (Bhattacharjea 1999). The decline continues in the 1990s coinciding with the closure and downsizing in the mill sector. In the apparel industry, wage share curve appears to be U shaped. Initially high in the beginning of 1980s but falls continuously till 1993-94 and rises again in the later years with a

sharp dip in 1999-2000. We conjecture that this rising income share of labour suggests tightening of the labour market in the apparel industry in recent years of rapid employment growth (see Figure 5). In other words, workers have been able to capture part of the additional value added in recent years. This may be interpreted as suggestive evidence indicating the positive impact of global trade participation on the Indian apparel industry.

Table 10: Employment by Type of Workers: Textiles and Apparel			
Spinning, weaving & finishing Textiles	99-00	03-04	Growth Rate*
Men	815373	658069	-5.2
Women	76577	83458	2.2
Direct Workers	891950	741527	-4.5
Contract Workers	76026	86052	3.1
All workers	967976	827579	-3.8
Employees	1137796	967671	-4.0
Other Textile Products			
Men	43121	54390	6.0
Women	11757	11761	0.0
Direct workers	54878	66151	4.8
Contract Workers	12637	19606	11.6
All Workers	67514	85756	6.2
Employees	85398	105364	5.4
Knit Products			
Men	31862	69034	21.3
Women	12218	31425	26.6
Direct workers	44080	100459	22.9
Contract Workers	4851	13279	28.6
All Workers	48931	113738	23.5
Employees	62577	137349	21.7
Apparel			
Men	83501	118684	9.2
Women	153686	181610	4.3
Direct workers	237187	300294	6.1
Contract Workers	12548	26757	20.8
All Workers	249878	327052	7.0
Employees	294746	378542	6.5
*Average Annual Compound Growth Rate			
Source: ASI Labour Bureau, Simla			

Figure 11: Wages to gross value added ratio: Textile and apparel industry



The process of industry restructuring due to trade and regulatory reforms have had differential outcomes in the T&A industry. This may be summarised as in Table 11.

Textile	Apparel
<ul style="list-style-type: none"> • Technology & Product Upgrading in Mills • Rising Capital Intensity • Down Sizing and Closure of Mills • Work Force Restructuring • Weakening of Labour Bargaining power 	<ul style="list-style-type: none"> • Plant-scale Upgrading • Correction of Missing Middle • No Scale Bias against Labour Use • Greater Demand for Labour • Rising Income Share of Labour

Wage Differentials in T&A Sector: Is it deteriorating?

Has international trade participation led to a widening of wage disparities in the T&A industry? The changes in the ratio of informal to formal sector wage rate would be a good indicator of wage disparities over time. It is important to know, because lower relative wages in the informal sector, encourages production subcontracting that is not conducive to labour welfare (one form of race to the bottom). We have estimated this ratio using informal sector wage rates based on NSS results for the year 1999-00 and 2004-05 and the corresponding estimates for the formal sector based on ASI data (Table 12).

Table 12: Nominal Wage Rates: Formal and Informal sector (Rs. per day)				
	Textiles		Apparel	
	1999-00	2004-05	1999-00	2004-05
Male Workers				
Formal*	127.8	148.0	112.5	134.1
Informal Sector	95.5	106.8	88.9	105.6
Ratio**	0.75	0.72	0.79	0.79
Female Workers				
Formal Sector*	73.7	86.7	74.5	96.7
Informal Sector	38.7	70.0	50.9	73.0
Ratio **	0.52	0.88	0.70	0.75
Average Wages Informal Enterprises in 2004-05:All Industries				
Urban Male	104.8			
Urban Female	81.05			
*Directly Employed (Factory Sector) ** Informal to Formal				
Source: Annual Survey of Industries: 2003-03 and NSSO Surveys				

Our findings are as follows:

- No worsening of relative wages of informal relative to formal within both textile as well as apparel. In 2004-05 the relative earnings position of informal sector workers remain stable
- The relative position of female workers has improved as indicated by the higher ratio in 2004-05 in both the industries.
- Male informal workers are getting the same wage rate as that of the average urban informal sector (all industries).

The above findings support the proposition that the relative wage disparities in T&A has not worsened in the years of greater global trade participation.

4.1 Local Labour Market Conditions: As Seen through the NSS data

In this section we attempt to give a broad picture of the state of labor markets in T&A using some detailed information gathered for the first time in the most recent round of NSSO Survey on employment and unemployment in the year 2004-05 (NSSO 2006). In this section the two industries are very broadly defined. The industry category textiles (NIC-17) that includes other textile product in addition to spinning and weaving activity, and apparel (NIC-18) that includes manufacture of all types of garments, clothing accessories and fur products. Let us note two important worker definitions used in the surveys (NSSO 2006): (1) Own Account Worker: those self-employed persons who operated their enterprises on their own account or with one or a few partners and who, during the reference period, by and large, ran their enterprise *without hiring any labour*.

(2) Regular Wage/Salary Worker: those persons who worked in others' enterprises (both household and non- household) and, in return, received salary or wages on a regular basis (i.e. not on the basis of daily or periodic renewal of work contract) (3) Casual Wage Worker: A person who was casually engaged in others' enterprises (both household and non-household) and, in return, received wages according to the terms of the daily or periodic work contract, was a casual wage worker. The distribution of workers by employment status provides an important dimension of quality of employment. We have estimated the first two categories for T&A and the residual workers are included under the heading *others* (see Table 13). In apparel, we observe a rapid rise in the share of own account workers from more than 40 percent in 1993 to more than 60 percent in 2004. Textile industry is characterised by an initial change in the second half of the nineties and followed by a more stable distribution in the period 2000-05. There has been a general trend across the board of an increase in level of informality in the labor force in the T&A industry. This is not surprising as informalisation is process that began in India very much before trade liberalisation.

Work Status, Contractual jobs and Social Security Benefits: 2004-05

Our findings are based on Tables 14 and 15.

- More than 95 percent of workers in the NSS sample have got jobs in informal enterprises, i.e., proprietary and partnership enterprises. Less than 3 percent said they worked in private corporate sector. This percentage is more in the textiles industry as it is less skewed in favour of small enterprise.
- More than 90 percent in the apparel said they had no written job contracts. Only 6 percent had job contracts with more than 3 years. This suggests that most workers in the proprietary and partnership enterprises have no written job contracts. This implies that a major chunk of the labour force working in T&A does not enjoy any modicum of labour rights. Any strategy of decent work needs to address seriously this segment of workers in the future.
- Absence of social security benefits is very stark, only 2.6 percent of the sampled workers said they are eligible for social security benefits and the proportion is little more in textiles (5.5 percent)

Status Type	1993-94	1999-2000	2004-05
Apparel			
Own Account Workers	40.2	48.0	61.0
Regular Wage/Salary Worker	26.2	26.2	14.7
Others	33.6	25.8	24.3
Textiles			
Own Account Workers	22.0	29.9	28.6
Regular Wage/Salary Worker	38.8	29.7	28.3
Others	39.2	40.4	43.1

Source: NSSO surveys of respective years

	Textile	Apparel
Proprietary & Partnership	84.9	95.7
Private Corporate /Public sector	11.8	2.9
Others	3.3	1.4

Source: NSSO survey 2004-05

Contract Type	Textile	Apparel
No Written Contract	87	90.6
Between 1 and 3	1.9	3.1
More than 3 year	11.1	6.3
Total	100	100

Source: NSSO survey 2004-05

Educational Status	Textiles		Apparel	
	1993	2004	1993	2004
Not Literate	28.8	28.5	26.3	13.0
Literate Below Primary	16.9	10.6	11.9	9.3
Primary	20.5	20.6	20.1	20.6
Middle	15.1	17.6	18.9	28.6
Secondary	9.2	9.9	11.9	14.5
Higher Secondary	3.1	3.8	4.8	5.7

Source: NSSO surveys: 1993-94 and 2004-05

The educational profile of workers in T&A does not show any substantial change over the years (see Table 16). The marginal improvement in the share of secondary education workers in apparel should be a matter of serious concern. According to the report of committee to assess the human resources for textile industry, (Ministry of Textiles, Vision 2010 Report) it is expected that over 12 million jobs are likely to be created in the textiles industry and related areas. The facilities available for the training of the workforce at the operatives' level in maintenance and skilled jobs availability are very weak. Out of the 5 million jobs on the production floor, the largest share will be for skilled and semi-skilled labour, for which there is no worthwhile training infrastructure available in the country. The manpower requirement, as observed, will be 5.75 lakhs in Spinning, 1.57 lakhs in Weaving, 92 thousand in Knitting, 1.76 lakhs in Processing and 40 lakhs in Garmenting, thereby throwing up the need to train approximately 5 million workers.

5 Conclusion

The Indian textile and apparel industry underwent a process of restructuring following the liberalisation of trade and industrial regulatory policies beginning in the 1990s. This paper studied the main features of this change in policy regime and the corresponding changes in the industry. The focus was on production structure and labour market outcomes. We documented how the T&A industry has restructured itself through investment in technology, upgrading size and product mix. The labour market data of recent years revealed differential outcomes in the formal segment of textile and apparel industry. Employment in textile

industry declined but not in the apparel industry. This may be attributed to technological modernisation and downsizing in addition to closure of large factories in the textile industry. The boom in the apparel sector facilitated employment absorption by scale upgrading without any bias against the use of labour. Overall the quality of employment has declined as suggested by the growth of contract labour in both textile and apparel industries. The global trade opportunities opened to India in T&A has created substantial employment opportunities. The T&A industry has led the Indian manufacturing sector to recover from years of job-less growth. Improved income shares of labour shares suggest tightening of labour market a desirable outcome. Over all the 'Worker Status' in T&A is found to be rather poor. The lack of improvement in the educational status of workers in T&A suggests the need for greater re-training and skill upgrading of workers in the T&A industry in India.

Endnotes

¹ The regression estimates are not reported here to save space.

² The group 'Other Textiles' is the group numbered 172 in the National Industrial Classification 1998. It contains industries producing textile products such as made-ups, ropes etc. The NIC-98 classification is as follows:

- (1) 171: Spinning, Weaving and Finishing of textiles
- (2) 172: Manufacture of other textiles like made-up articles, carpets etc
- (3) 173: Manufacture of knitted and crocheted fabrics and articles
- (4) 181: Manufacture of wearing apparel, except fur
- (5) 182: Dressing and dyeing of fur; manufacture of articles of fur

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